# Minimum Wages and the Fed's Push for Slower Wage Growth

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The implications of slower wage growth on monetary policy cannot be overstated. Federal Reserve Chair Jerome Powell has previously drawn a straight line from wage pressures to inflation in nonenergy, nonhousing services, which account for more than half of the Fed's preferred inflation gauge. All else equal, slower wage growth would take the edge off the Fed's current hawkish stance and help reduce the odds of a misstep by the U.S. central bank.

The employment cost index for private industry workers is tracking at a 4.5% pace on a year-over-year basis, while wage growth, according to the Atlanta Fed, has only recently slowed below 6%. The Indeed Wage Tracker,[1] which captures the average yearly change in wages and salaries advertised in job postings on Indeed while controlling for job titles, topped out at 9% in early 2022 and has since descended to 5%. Nevertheless, all these measures of wage growth remain above the 3.5% pace that would be consistent with the Fed's long-run inflation target of 2%.

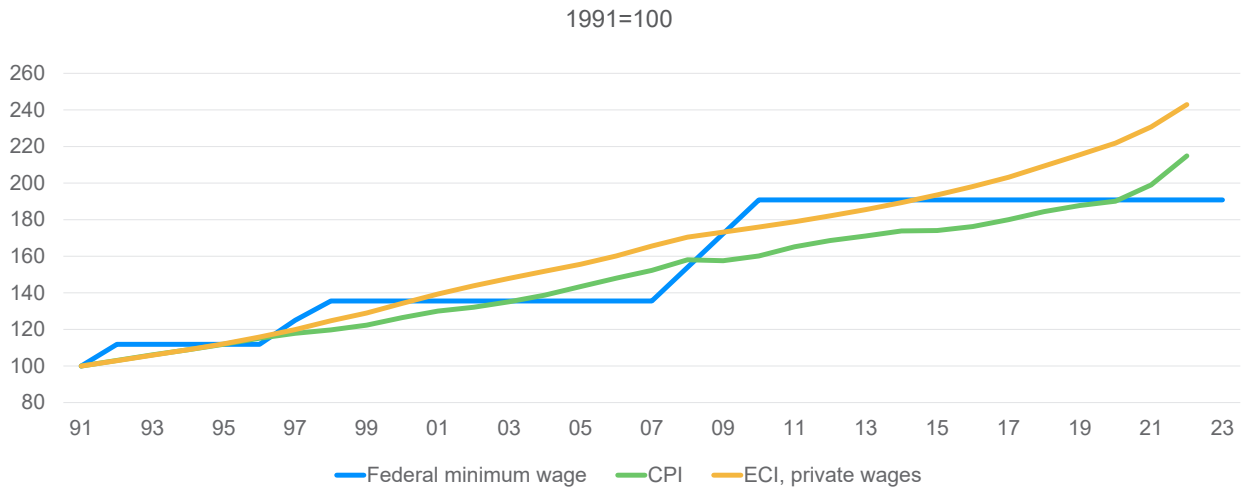
Tight labor supply has no doubt played a role in the recent spate of strong wage growth, but there is also a question of whether recently legislated minimum wage increases have been a contributing factor as well. This article explores whether the state-level push for higher minimum wages has had a material impact on overall wage growth.

## Federal minimum wage support has been lacking…

Increases in the federal minimum wage have been few and far between over the last 30 years. The most recent change to the federal minimum wage occurred 14 years ago, which represents the longest period without a mandated increase since the Fair Labor Standards Act was enacted in 1938.[2] As a result, total growth in the federal minimum wage since 1991 has failed to keep pace with total growth in inflation, which has been particularly pronounced since the onset of the COVID-19 pandemic (see Chart 1). This means that minimum wage workers have seen real wages decline since 1991. Conversely, growth in overall wages, as measured by the employment cost index, outpaced inflation by nearly 30 percentage points over the same period, which translates to about 1% real wage growth per year for the broader labor force.

1 https://www.hiringlab.org/2023/06/07/us-wage-growth-remains-solid/
2 https://www.dol.gov/agencies/whd/minimum-wage/history/chart

**Chart 1: Falling Behind**




Sources: BLS, U.S. Dept. of Labor, Moody's Analytics

However, there is an argument to be made that the federal minimum wage is a relatively blunt policy instrument. Given the disparate landscape of labor market pressures and living costs across the country, allowing states to set a suitable minimum wage should generate improved outcomes. The federal minimum wage should act as a safety net for workers in states that fail to act accordingly, though it has failed to live up to the task over the last decade. As a result, states are increasingly owning this responsibility for setting a more appropriate minimum wage.

## …But states are making moves

Currently, 30 states and the District of Columbia have minimum wages that are set above the existing federal minimum of $7.25 per hour. Twenty-eight states and the District of Columbia are raising their minimum wage in 2023. Minimum wages in those states are rising by an average of nearly 8%, ranging from a modest 2.3% gain in Michigan to a 16.7% increase in Nebraska and an 18.8% jump in Hawaii.

Minimum wage reform at the state level has already garnered substantial momentum, and nearly all the states that have increased their minimum wage in recent years, continue to do so. This is due to the incremental methodology that many state legislatures are using to implement minimum wage increases. States have elected to either set fixed dollar amount increases each year, peg the increases to the consumer price index, or to use a combination of both—fixed increases to a specified level, followed by future raises tracking CPI growth. Connecticut, for example, scheduled $1 annual increases until the minimum wage reached $15 per hour this year, and it will now track inflation in subsequent years.

To quantify the changing minimum wage landscape, a population-weighted minimum wage can be calculated to capture the binding minimum wage for different segments of the population (see Chart 2). In 2010, this wage measure remained close to the federal minimum, as only 15 states still had minimum wages set above the federal requirement following a series of increases in 2007, 2008 and 2009. Since 2010, states have

**Chart 2: National Minimum Wage Has Hardly Budged, but States Are Making Moves**


Sources: Multiple sources, Moody's Analytics

increasingly pushed the envelope. The population-weighted minimum wage stood at $9.08 at the beginning of 2019 and is now quickly approaching $11 as scheduled increases continue to take hold. Starting in 2014, the population-weighted minimum wage has increased between 2% and 6% each year, and gains have averaged better than 4% since the beginning of 2020. Given the recent acceleration in population-weighted minimum wage gains, it becomes even more important to determine whether those changes have a meaningful impact on overall wage growth.

In the years preceding the COVID-19 pandemic, demand for raising minimum wages was most urgent, and found the most political support, in areas of the country where living costs were highest. Affordability issues caused an outflow of residents and reduction in economic activity once the pandemic hit. The subpar recoveries in these high-cost areas kept their labor markets comparatively soft and wage growth below average.

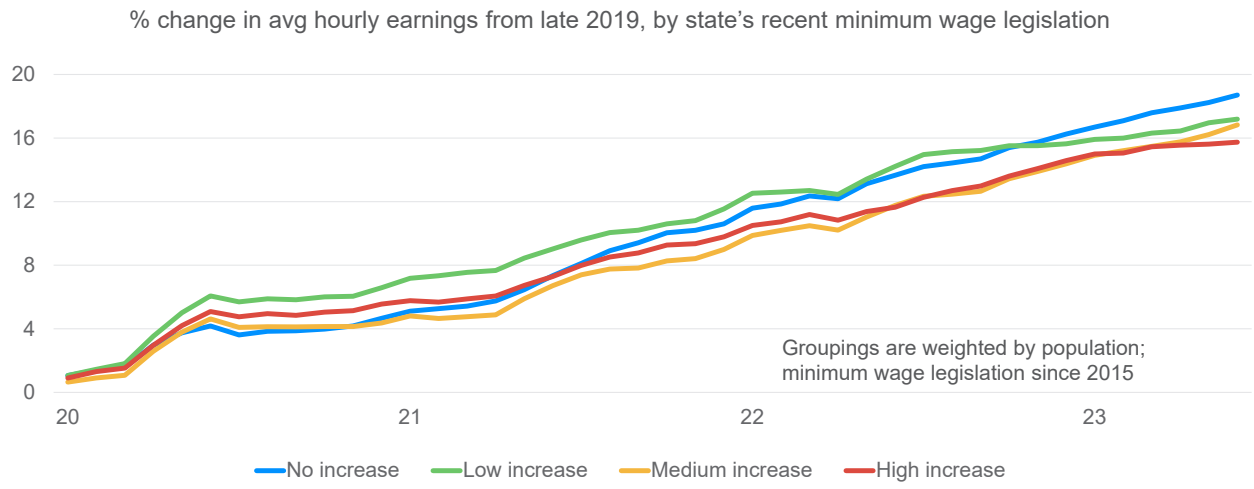
Average hourly earnings are a secondary wage measure, though still keenly monitored for signs that the labor market is perpetuating too-high inflation. Grouping states by their legislative approach since 2015, we find that states that have most aggressively increased their minimum wage have seen the slowest growth in average hourly earnings since the second half of 2019 (see Chart 3). Softer earnings growth has been a function of the comparatively sluggish economic performances in states that have passed larger minimum wage increases. Yet, it is important to note that, because of the differential economic performances across the country since the COVID-19 recession, any analysis of the effect on wage growth, and subsequently inflation, requires an accounting for a host of other macroeconomic indicators, which is discussed in more detail in the following section.

## Do minimum wage changes move the needle on overall wage growth?

To estimate the impact of minimum wage increases on wage growth, a regression model for the U.S. is specified as follows:

$$ECI_t = \alpha_t + \beta_t MinWage_t + \gamma_t X_t + \varepsilon_t$$

## Chart 3: But It Is Not Clear if It Matters




Sources: Multiple sources, Moody's Analytics

where ECI is the year-over-year percent change in the employment cost index for private workers' wages and salaries at time *t*, MinWage is the year-ago percent change in the population-weighted minimum wage, and X is a vector of controls including the quits rate, the annual percent change in core inflation, the output gap,[3] the unemployment gap ratio,[4] and the unemployment rate. The ECI is our preferred measure of wage growth since it accounts for industry composition and includes both wage earners and salaried workers. However, the limitation to using this metric is its scant history. While national-level data are available from 1980, ECI data at the census division level have only been published since 2006. Further, the data were averaged to a quarterly basis to accommodate the ECI's quarterly frequency. The number of observations is further constrained by the incorporation of JOLTS data. We control for the quits rate in the U.S. and regional regressions since job switchers tend to capture higher rates of wage growth than job stayers, according to the Atlanta Fed's Wage Growth Tracker.[5] Our sample is therefore restricted to 2001 for the U.S.

Economic theory undergirds our regressors. As mentioned, job switchers tend to earn higher wage growth than job stayers. Theory and empirical evidence also suggest that workers' compensation is raised in accordance with price and productivity gains as well as when the economy is overheated. Finally, the Phillips curve denotes a negative relationship between unemployment and wage growth: When unemployment is high, wage growth slows; when unemployment is low, wage growth accelerates.

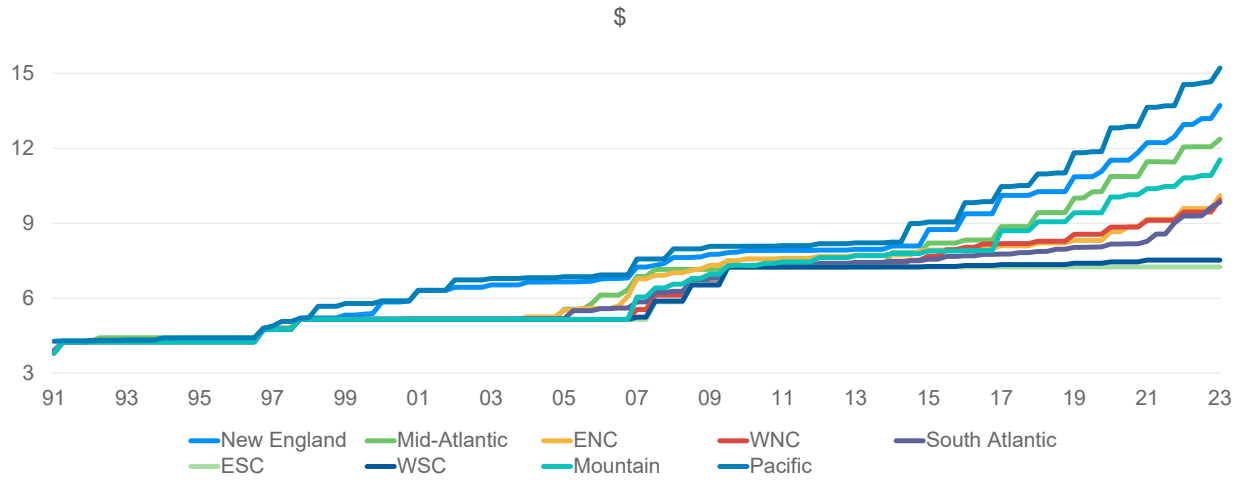
Regressions are also run for each census division. Considering the varying minimum wage laws across states, we estimate a population-weighted minimum wage for each census division (see Chart 4). The specification differs slightly from the national model due to data limitations, though we attempt to preserve consistency where possible. The regional regressions are specified as follows:

3 The output gap is defined as 100*(Real GDP – Real Potential GDP)/Real Potential GDP. Real potential GDP estimates are sourced from the CBO's *Outlook for the Budget and the Economy*. See https://www.cbo.gov/topics/budget/outlook-budget-and-economy

4 The unemployment gap ratio is defined as the unemployment rate divided by NAIRU.

5 https://www.atlantafed.org/chcs/wage-growth-tracker?panel=1

**Chart 4: Wage Floor Is Rising in Most Regions**




Sources: Multiple sources, Moody's Analytics

$$ECI_{it} = \alpha_{irt} + \beta_{it} MinWage_{it} + \gamma_{it} Quits_{it} + \delta_{rt} Inflation_{rt} + \tau_t OutputGap_t + \varphi_{it} UnempRate_{it} + \varepsilon_{irt}$$

Here, we replace core inflation with the year-ago percent change in inflation including food and energy. Inflation data are only available on the national and census region level while data for core inflation are available only at the national level. Therefore, we assign to each census division *i* the inflation rate reported in its corresponding census region *r*. We also include the quits rate and unemployment rate for each census division as well as the national output gap. The unemployment ratio term is dropped.

For each regression, it is the coefficient β that we are most interested in, as it denotes the impact that the population-weighted minimum has on ECI growth.

## Results

On the national level, we find evidence of a positive relationship between growth in the population-weighted minimum wage and growth in the ECI for private workers' wages and salaries. Specifically, a 1-percentage point increase in the yearly growth rate of the population-weighted minimum wage is associated with a 0.04-percentage point increase in the ECI (see Table 1). Therefore, across the U.S., state-level changes in the minimum wage are contributing to the current spate of high wage growth, although the effect is on the margin.

While the national minimum wage has changed little over time, the population-weighted minimum wage has increased substantially. Changes are caused by public policy decisions, which can be abrupt, even if planned. Therefore, minimum wages will impact wage growth only following momentary jumps. When the labor market absorbs the policy shock, wage growth returns to a steadier growth path (see Chart 5). Hence, over the long run, the impact of increasing the minimum wage has a muted effect on aggregate wage growth.

## Table 1: United States

Dependent variable: ECI for private wages and salaries, % change yr ago

| | (1) | (2) | (3) |
|---|---|---|---|
| Population-weighted minimum wage, % change yr ago | 0.0782*** | 0.0345*** | 0.0438*** |
| | (0.018) | (0.012) | (0.013) |
| Quits rate, % | - | 2.038*** | 2.116*** |
| | | (0.155) | (0.304) |
| Core inflation, % change yr ago | - | - | 0.346*** |
| | | | (0.052) |
| Output gap, % | - | - | -0.121** |
| | | | (0.052) |
| Unemployment gap ratio[1] | - | - | -6.435*** |
| | | | (0.988) |
| Unemployment rate, % | - | - | 1.374*** |
| | | | (0.222) |
| Constant | 2.684*** | -1.416*** | -2.790*** |
| | (0.086) | (0.283) | (0.812) |
| n | 125 | 89 | 89 |
| R-squared | 0.081 | 0.719 | 0.873 |
| Is minimum wage growth associated with wage growth? | Yes | Yes | Yes |

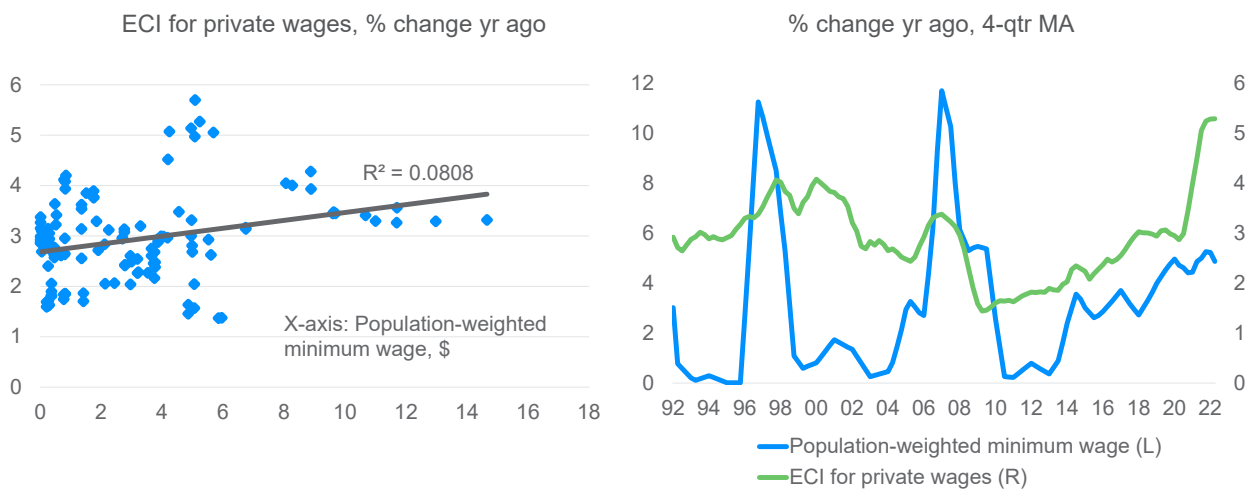
Note: *** p<0.01, ** p<0.05, * p<0.1; standard errors in parentheses

[1]The unemployment ratio is defined as the unemployment rate divided by the nonaccelerating inflation rate of unemployment.

*Sources: BEA, BLS, CBO, U.S. and State Departments of Labor, Moody's Analytics*

We find similar evidence when examining the effect at the census division level. In all census divisions except New England, increasing the minimum wage is associated with higher wage growth (see Table 2). The effect is most pronounced in West North Central, where a 1-percentage point increase in the population-weighted minimum wage leads to a 0.08-percentage point increase in the rate of wage growth. Still, the impact is small. In New England, there seem to be other factors driving wage growth. Indeed, out of the five carefully selected regressors, only the quits rate influences wage growth at a statistically significant level—a 1-percentage point

## Chart 5: Weakly Related




Sources: Multiple sources, Moody's Analytics

## Table 2: U.S. Regional

Dependent variable: ECI for private wages and salaries, % change yr ago

| | New England | Mid-Atlantic | ENC | WNC | South Atlantic | ESC | WSC | Moutain | Pacific |
|---|---|---|---|---|---|---|---|---|---|
| Population-weighted min wage, % chg yr ago | 0.0623 | 0.0398* | 0.0714*** | 0.0810*** | 0.0687*** | 0.0511*** | 0.0373* | 0.0627*** | 0.0530*** |
| | (0.080) | (0.024) | (0.014) | (0.023) | (0.020) | (0.015) | (0.021) | (0.016) | (0.019) |
| Quits rate, % | 1.281*** | 1.911*** | 0.906** | 0.749** | 1.164*** | 0.626 | 1.455*** | 1.647*** | 0.937*** |
| | (0.418) | (0.313) | (0.370) | (0.372) | (0.307) | (0.475) | (0.325) | (0.344) | (0.263) |
| Inflation, % change yr ago[1] | 0.0665 | 0.145*** | 0.282*** | 0.298*** | 0.143*** | 0.281*** | 0.279*** | 0.321*** | 0.272*** |
| | (0.138) | (0.038) | (0.043) | (0.042) | (0.042) | (0.057) | (0.072) | (0.061) | (0.046) |
| Output gap, %2 | -0.0996 | -0.0357 | -0.354*** | -0.206** | -0.068 | -0.214 | 0.0662 | -0.157 | -0.144*** |
| | (0.132) | (0.073) | (0.092) | (0.085) | (0.100) | (0.131) | (0.138) | (0.104) | (0.035) |
| Unemployment rate, % | -0.0997 | -0.0621 | -0.299*** | -0.269** | -0.0766 | -0.275** | 0.276* | -0.0318 | -0.103*** |
| | (0.131) | (0.055) | (0.085) | (0.127) | (0.082) | (0.129) | (0.162) | (0.105) | (0.036) |
| Constant | 0.66 | -0.505 | 0.966 | 1.005 | -0.0383 | 1.557 | -3.067** | -2.570** | 0.319 |
| | (0.863) | (0.574) | (0.991) | (1.145) | (0.926) | (1.533) | (1.222) | (1.149) | (0.621) |
| n | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| R-squared | 0.238 | 0.805 | 0.852 | 0.734 | 0.771 | 0.782 | 0.642 | 0.803 | 0.899 |
| Is minimum wage growth associated with wage growth? | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note: *** p<0.01, ** p<0.05, * p<0.1; standard errors in parentheses
[1]The inflation rate is at the census region level.
[2]The output gap is at the national level.

*Sources: BEA, BLS, CBO, U.S. and State Departments of Labor, Moody's Analytics*

increase in the quits rate is associated with a 1.28-percentage point increase in wage growth in New England. This could be due to differences in demographics, labor markets and industries[6] contained in each state within the division—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

It is important that we not overstate the results of this analysis. There are many factors that can influence wage growth and our specification may be limited by omitted variables and/or simultaneity, which could bias our estimates. Rather than serve as an expression of causality, what our coefficient estimates show is that there is a positive relationship between growth in minimum wages and aggregate wages, even while controlling for other explanatory factors. Therefore, it is plausible to consider changes in the minimum wage to be a contributing factor to upward movement in the ECI at the national and census division levels, but a small one at that. Other variables such as the quits rate, inflation, economic growth, and the unemployment rate pack a bigger explanatory punch, particularly in the post-pandemic era.

## Conclusion

The underlying cause of the post-pandemic bout of inflation is hotly debated. Supply shocks in the form of the pandemic and the imbalance it created between productive capacity and consumer behavior, and then later on Russia's invasion of Ukraine, are key to accurately understanding today's inflation. So too is the role of generous government stimulus and loose monetary policy that transferred an unprecedented level of cash into the U.S. consumer's pocket and kept borrowing costs too low for too long. Whereas backward-looking analysis is unlikely to converge on a broadly accepted consensus anytime soon, few debate the forward-looking anxiety that too-fast wage growth could make above-target inflation harder to get rid of. For that reason,

6 While some industries endogenously pay higher wages and salaries, some industries are also endogenously more transient. That is, higher intra-industry movement of workers will result in higher wage growth.

it is important to fully understand the dynamics in the labor market that are driving rapid pay increases and, subsequently, inflation. While the analysis in this paper confirms that legislated minimum wage increases have played a role, the impact of those changes should not be overstated as a contributing factor.

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