1 Literature Review

1.1 Predictions of Minimum Wage Effects on Employment

Stigler (1946) states "...[minimum wage] reduces the earnings of those substantially below the minimum. These are undoubtedly the main allocational effects of a minimum wage in a competitive industry." Indeed, the standard model of a competitive market predicts increased minimum wage will cause an increase in unemployment. However, frictions in the labor market or a lack of binding minimum wage can drastically change this prediction.

If there is a large presence of monopsonies, increased minimum wage does not force firm profits to fall below the marginal cost of production (Robinson, 1933; Stigler, 1946; Bhaskar and To, 1999; Manning, 2003; Azar et al., 2019). Hence, there could be little or positive effect on employment.

Flinn (2006) develops a Nash bargaining model in which increased minimum wage intensifies job search and improves employer-employee match quality. In turn, this increases productivity and offsets any negative employment effects.

Another explanation offered is the concept of an "efficiency wage". An efficiency wage is a wage offered by employers that is higher than the market-clearing wage in order to reduce costs associated with turnover (Shapiro and Stiglitz, 1984; Rebitzer and Taylor, 1995). Therefore, firms may be willing to pay higher wages to insure a consistent workforce.

Dessing (2002) suggests workers are "backward-bending" and take jobs below their real reservation wage and productivity level in order to earn some income to feed their families.

Alternatively, unions could affect the labor market. With unions present, firms cannot terminate their employees at will and this generates a cascade effect over the entire wage structure (Lee, 1999; Autor et al., 2016; and Kearney and Harris, 2014).

With many possible alterations to the standard competitive market framework, there is no clear theoretical prediction of the effects of increased minimum wages. However, some argue market frictions may be negligible and the magnitude of the theorized effects of market frictions has been disputed.

1.2 Empirical Results on Low-wage Workers

Traditional empirical work using observational data found an increase in minimum wage led to decreases in employment.[1] However, following the groundbreaking work of Card and Krueger (1994), the empirical consensus has somewhat shifted to supporting the view that an increase in minimum wage does not increase unemployment. Card and Krueger used a "natural experiment" to compute the change in employment due to minimum wage and compare it to a counterfactual "control" state change in employment. Subsequent minimum wage papers generally used two-way fixed effect (e.g. Neumark and Wascher, 2008).

[1] See Fernández-Villaverde (2018) for discussion

However, Card and Krueger's work was not without criticism and concerns. Using phone survey data of a sample similar to Card and Krueger's, Neumark and Wascher (2000) results led to opposite conclusions. Meer and West (2016) argue that minimum wage impacts happen over time and while immediate relative employment levels might remain stable, the growth rate of job openings likely decreased. Others have shown that the elasticity of employment decreases in the long-run (Sorkin, 2015; Aaronson et al., 2018). Jardim et al. (2017) argue the relevant market as well as the reduction in hours worked was not considered.[2] While most studies—including Card and Krueger—use a proxy for low-wage industries such as teenagers or restaurant workers, they use Seattle data to identify low-wage industries and examine the average treatment effect of a minimum wage increase on both hourly wage and hours worked. They find the increased minimum wage reduced a low-wage worker's monthly earnings by an average of $74 per month.

Additionally, Card and Krueger and similar papers have been the subject of methodological concerns. These papers assume "parallel trends" between treatment and control states, which has been criticized especially since the adoption of minimum wage laws appears to be clustered by geographical region (Allegretto et al., 2018). However, there is a large literature that attempts to address these concerns (see Neumark, 2018).

While the empirical effects of minimum wage are disputed, most empirical work does not draw a clear link to a theoretical prediction. If there is indeed no change in employment due to minimum wage increases, then what theoretical market friction is causing it? Since different theoretical market frictions should have different effects at different parts of the wage distribution, considering distribution effects—discussed in the next section—is critical to understanding the effects of minimum wage.

1.3 Distribution Effects of Minimum Wage

Undoubtedly, minimum wage has heterogeneous effects on the distribution of wages. While some might benefit from increased minimum wage, others might be hurt by it. The relevant policy question is whether increased minimum wage increased or reduced poverty and inequality.[3]

Following the classical work of Lee (1999), traditional analysis of distribution and inequality changes were concerned with "spillovers". Do workers earning below the minimum wage "spillover" into other parts of the wage distribution, earn the new minimum wage, become disemployed, or some combination of the previous possibilities?

Extending DiNardo et al. (1996), which did not account for spillovers, Lee (1999) compared the change in the ratio of 50th to 10th percentile of wage,

[2] Another notable paper that examines how minimum wage affects the average hours worked is Belman et al. (2015)

[3] Kearney and Harris (2014), MaCurdy (2015), and Harasztosi and Lindner (2019) consider the effectiveness of minimum wage relative to other antipoverty programs and the extent to which firm or consumers are paying for the minimum wage changes

calculated the reduction in real minimum wage, and concluded that minimum wage increases substantially increased inequality. Autor et al. (2016) considered a longer period of time and included state and time fixed effects and found similar but smaller effects of minimum wage on reducing inequality.

An additional concern to interpreting changes in the wage distribution due to increased minimum wage is the possibility of high-wage workers being substituted for low-wage workers. Cengiz et al. (2019) consider the bottom of the wage distribution and find a "bunching effect" which explains the lack of job loss is not due to labor-labor substitutions.

The previous literature does not account for the possibility of firms substituting hours worked by low-wage workers with those of high-wage workers whereas this paper does.

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