

Minimum Wage and EITC: Correlation and Policy Implications

Jae-Ryang Nam, Young-Jun Jeon

Abstract

This study aims to analyze the correlation between minimum wage and the earned income tax credit (EITC) and present policy implications. The two rounds of sharp increase in the minimum wage in Korea in 2018 and 2019 and the drastic expansion of the EITC with the intent of addressing the side effects of the minimum wage hike require analysis of the mutual interactions. If it is found that combining or interrelating the two programs are likely to produce positive effects, new policy combinations need to be considered.

The challenge in this type of analysis is the lack of data on the programs' effects. At this point in time it is impossible to empirically analyze the effects of the parallel scaling of the two programs. Still, the spike in minimum wage and expansion of the EITC are such major policy changes that warrant an assessment of the implications, whatever the approach.

A relatively recent study, Newmark and Wascher (2011), analyzed the correlation. It argued that single women with children, because of their fixed cost associated with employment, will see improvement in their income if they are entitled to EITC and higher minimum wage at the same time. With the minimum wage serving as the backstop to the possible drop in their wage resulting from increased labor supply, they would replace unskilled workers in the teens. The study also demonstrates the hypothesis through an empirical analysis.

With focus on such literature, this study tries to analyze the effects of the combination of minimum wage and EITC from two angles. First is based on the fact that the Korean economy has already experienced minimum wage increase that outpaced the market's nominal wage growth and that the EITC has been steadily broadening. This study takes an empirical look into the changes in the EITC payments to single mothers and changes in their labor supply when both programs expanded at the same time. The analysis is undertaken in Chapter 2.

Another approach is to simulate policy changes assuming a situation similar to the Korean economy. In fact, this study establishes a general equilibrium model to analyze the benefits of the sharp increase in minimum wage and EITC and conducts a simulation of the benefits of combining the two programs. This analysis is found in Chapter 3.

In Chapter 2, this study first reviews Korea's minimum wage and EITC. It assesses the level of minimum wage and the increase rate, the EITC program and the payout performance, as well

as the relationship between the two programs. It also reviews the impact on EITC and child tax credit (CTC) performance when the minimum wage increase outpaces the nominal wage growth by analyzing the National Tax Service data. The analysis was broken down by household demographics. This allowed the study to concentrate on households of single women with children. It also tried to gain as much information as possible to find indicators of association between the two programs.

And to further discover empirical evidence on the interactions between minimum wage and EITC that cannot be accessed by the NTS data, the Korea Welfare Panel Study data was used for additional analysis. Notably, analysis of the number and share of mother-child households revealed an increasing trend. It is an important finding that when the minimum wage outgrows nominal wage, expanded EITC benefits could result in increased supply of labor from single mother households. In other words, for single mother households where there is fixed cost involved in labor supply, if the minimum wage is there to prop up the wage that would otherwise fall due to increased labor supply, single mothers with more human capital accumulation are likely to replace teenage workers, for example.

In addition, the EITC and CTC payments to single mothers far outsize those to other households. This is because the minimum payment to single mother households is much higher. Single mothers' education level was higher than that of other heads of beneficiary households, and their age, distributed in the late 30s and middle 40s, also put them at a relative advantage.

Based on the analysis, this study presents the possibility that the combination of the EITC and minimum wage is increasing labor supply by women of mother-child households. It is noteworthy that the number of mother-children households receiving EITC and CTC benefits is increasing, and that their share out of total beneficiary households is on the rise, although not very sizeable at this time.

Chapter 3 attempted an analysis on how the upward adjustment in minimum wage and stronger EITC have affected the national economy. Not only the impact of each program independently, but also the interactions between them was a topic of analysis. There have been a broad range of analyses on the employment effect of minimum wage and EITC. Literature on the minimum wage is finely detailed in Neumark and Wascher (2007). Most studies concluded that minimum wage hike decreased employment, while Card and Krueger (1994) and a few others saw little impact, or an upward push in employment. The two sets of studies were based on a similar context: the former set saw unskilled labor market as competitive while the latter perceived it as a demand monopoly. Given the questions on acceptability of the assumption that unskilled labor market is a demand monopoly, and the predominant conclusion that minimum

wage hike negatively affects employment, it would be safe to conclude that minimum wage growth decreases employment or has little significant impact. Most studies on the Korean labor market also conclude that minimum wage leads to reduced employment (literature review in Dae-II Kim, et al., 2016).

There was an interesting argument regarding the employment effect of minimum wage made by Neumark and Wascher (2011). This study focused on the minimum wage and EITC. It argues that while EITC boosts unskilled labor supply, it drives down wage, offsetting the effect of employment increase. But minimum wage hike puts a stop to the wage drop, and thus minimizes the offset to the increase in labor supply. Particularly for those with a high fixed cost associated with labor participation, such as single mothers with dependent children, minimum wage growth has a significant employment increase effect - it helps them overcome the fixed cost and increase labor supply. Studies prior to this overlooked the importance of the interactions between minimum wage and EITC. It was easy to miss, because minimum wage directly affects labor demand while EITC affects labor supply. This study is significant in that it pointed out the possibility of interactions between the two programs. But the problem is in the size of such interactions. Despite the interactions potentially increasing employment among the disadvantaged, the overall negative impact of minimum wage could still outweigh the benefits.

Based on this review, this study aims to compare the two effects by quantitatively analyzing the economic effect of minimum wage. It establishes a general equilibrium model that reflects the heterogeneity of labor participation by different population groups. From a lifecycle standpoint, it also simulates a situation where decision-making on consumption, saving and labor is affected by the type of household. Types of household were assumed to be either married couple household or single-person household (or single household). A married household that makes decisions to maximize the welfare of the entire household consists of the main earner (usually the man) and secondary earner (usually the woman). The simulation in this model is: the secondary earner's preference for leisure is overwhelmingly stronger than the main earner's, and thus the main earner's labor participation is overwhelmingly higher than that of the secondary earner. For single households, preference for leisure was assumed to be in between the main earner and secondary earner in a married household. This group needs to participate in labor to sustain their own livelihood, but less so than the main earner in a married household where the main earner has to be responsible for the livelihood of the secondary earner. This type of heterogeneity in the need for labor participation (or intensity in preference for leisure) can be one way of reflecting the heterogeneity in the fixed cost associated with labor participation as described by Neumark and Wascher (2011).

To this model that incorporates individuals' heterogeneity in the need for labor participation, recent empirical studies on the minimum wage impact on demand for unskilled labor were reflected, to analyze the upward adjustment in minimum wage, EITC and the interactions between the two programs. As for changes in labor demand, a situation was simulated where minimum wage hike decreases employment opportunities for unskilled workers. Results of quantitative analysis of this impact was reflected in estimating the labor demand.

Using the resulting model, and after setting the parameters related to the Korean economy and institutions, policy simulations were run, the findings from which can be summed up as follows. Minimum wage hike to 10,000 Korean won, a recent goal by the Korean government, is likely to result in a significant negative impact on the national economy. The GDP could fall by around 4%, and accumulated capital could considerably shrink. The capital-to-GDP ratio could fall from 3.6 to 3.5. But the biggest shock from minimum wage will come in the form of drastic reduction in employment. Minimum wage hike can significantly dampen demand for low-wage unskilled workers. There is a potential increase in labor supply, with stronger job-seeking desire from low-wage unskilled workers encouraged by the higher minimum wage, but the plummeting demand will ultimately drive down employment rate. When the fall in demand is small enough, the labor supply effect could still outpace the demand reduction. But empirical studies on the Korean labor market, which estimate the elasticity in labor demand reduction following minimum wage hike, conclude that such net positive effect can hardly be expected. The drop in employment rate was by 1.7%p in married households (men 3.0%p, women 0.5%p) and by 4.5%p in single households. The extent of the drop was larger in the lower income group. It was 16.2%p for the bottom 20% and 5.9%p for the bottom 20-40%. The fall in employment rate affects the government's financial burden by increasing welfare payments like Basic Livelihood Protection allowances, and also corporations' cost burden. The increase in labor cost, to be incurred by having to pay minimum wage workers more than their productivity's worth, can lead to reduced return on capital and ultimately undermine capital accumulation.

On the other hand, EITC was found to have little impact on the national economy, especially compared to minimum wage. Positive effects are also expected, such as promoting labor participation by the non-participating low-wage workers. But the average working hours were found to slightly decrease.

Minimum wage was found to limit the benefits of the EITC except for some demographic groups. For women workers of certain age (60s) who are characterized by their low participation, minimum wage hike could increase labor market participation when combined with EITC. But it is likely to reduce overall employment rate as it pushes down full-time employment by existing

workers. Minimum wage can reduce employment of the workers who serve as the backbone to the labor market, and can even deter capital accumulation, while bringing about little improvement in income distribution - rather, it could end up worsening it. Given the serious potential impact on the national economy, a cautious approach is needed for the minimum wage program.