

Major Employment Policies and Employment Substitutability between Workforce Groups

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Abstract

The purpose of this study is to determine Korea's employment substitutability between different workforce groups. The existing domestic and international discussions on this issue have mainly been about intergenerational employment substitution. In Korea, there has been a heated debate over the possibility of employment promotion policies for the elderly, such as the extension of retirement age, hindering youth employment. In major European countries, there has been much discussion about the negative effects of raising the pension age on youth employment.

However, recent research findings show empirical evidence for employment substitutability between young people and middle-aged, and between the elderly and middle-aged, rather than between young people and the elderly. In this situation, we should refine the discussion about the possibility of employment substitution between young people and their age neighbors and look for empirical evidence. If such evidence is found, it may be necessary to significantly change the direction of the discussion on employment substitutability.

Chapter 2 offers a theoretical discussion on employment substitutability among workforce groups, and based on this, substitutability is estimated using aggregate data. The following section summarizes the information of Chapter 2.

Despite the heterogeneity of the workforce, a certain level of substitutability generally exists according to the operating principle of the labor market. In Chapter 2, an empirical analysis was conducted on the possibility of substitution between different age groups, which inevitably arises from the practice of implementing job-related financial support policies mainly based on age. Under a typical competitive market, this study assumed a homogeneous production function of degree 1 (CRS), differentiated several age groups of the labor force using certain criteria, conceptualized them as input elements of the CES function, and attempted to estimate the substitutability between them.

Although age is one of the important factors for classifying the workforce, other criteria such as educational level and gender can also be used to explain the heterogeneity of the workforce. Therefore, this study divided the workforce by educational level and gender, and then added age to these categories, thus attempting to estimate the substitutability that mutually exists between age-segmented workforce groups subdivided by educational level and gender. For this purpose, the weights provided in the survey

data on economic activities (MDIS) were appropriately utilized to identify the number of employed persons and the distribution of manpower corresponding to different categories of educational level, gender, and age, and then the wage data corresponding to these heterogeneous groups were matched and analyzed. This study analyzed accessible samples from the year 2000 onwards.

The major empirical analysis results can be summarized as follows. First, when defining the workforce by age, the estimate of the elasticity of substitution between groups was very high, showing a high degree of substitutability. In general, similar size estimates were obtained across various age groups. In some cases, a smaller positive (+) value appeared due to limitations in the number of samples used for estimation, but this is judged to be resulting from statistical standard error rather than complementarity, and is seen to occur in cases where substitutability is somewhat weak.

Second, when limiting the sample to a low-educated workforce to conduct a detailed sample analysis, a clear substitution relationship appeared in terms of statistical significance between age groups. In particular, this trend was noticeable between young people and middle-aged people who are middle school graduates or lower and high school graduates. Between the college graduate groups, there was a tendency that a somewhat weak level of substitutability was estimated, perhaps due to the importance of appropriate employment size distribution by age (i.e., a certain level of complementarity) resulting from the firm's HR management practices or the nature of the job.

Third, while substitutability was generally estimated to be high for workforce groups belonging to similar age groups, there was a tendency for slightly smaller estimates to appear as the gap between age groups increased.

Fourth, a similar analysis of the elasticity of substitution was attempted after broadly dividing the workforce into young, middle-aged, and elderly groups. As a result, clear substitutability was still found, but a tendency for some substitutability to appear in a somewhat reduced degree was also discovered. This can be said to be an expected result because the following factors appear to be partially reflected in the estimates: first, there is some degree of mutual heterogeneity between each group when the workforce is divided broadly in terms of age; and second, there is a larger age gap between different workforce groups, meaning that substitutability is bound to be weakened.

Fifth, the results of applying a more generalized methodology of estimating between subdivided age groups (first-stage estimation) followed by re-aggregating the workforce as broader age groups and estimating between them (second-stage estimation) were confirmed to show very similar trends.

Overall, the elasticity of substitution between different age groups was found to be very high, which means that there could be many side effects from implementing job policies limited to specific age groups. Even so, these results do not mean that there are problems with all age-specific labor market policies. Surely, if the policy target is defined broadly with the age criterion alone, the substitutability issue discussed in this paper may arise. However, in the case of small-sized workforce groups that are

narrowly targeted by adding other criteria in addition to age (e.g., groups that are subject to detailed criteria including age and vulnerable group conditions), substitutability problems are unlikely to occur by definition with other workforce groups. This fact appears to have been taken into consideration in the active labor market policies implemented in most major countries. It is believed that labor market policies can be improved if these perspectives are properly considered in the design and implementation of policies.

Chapter 3 empirically analyzes the actual implementation effect of the “Youth Additional Employment Incentives” policy, one of the most representative youth employment promotion policies among recently implemented ones, using two different data. Based on the theoretical discussion in Chapter 2, an empirical model was established and the effect of policy implementation was estimated using the double difference method (DID). The data used in the analysis are the “WPS Plus” data, which combines the Workplace Panel Survey (WPS) data with the administrative data (ILMOA DB and Employment Insurance DB); and the “Combined Administrative Panel (CAP)” data, which combines different administrative data to construct a panel data. These two data from different sources revealed some common trends between the treatment group that participated in the policy project and the comparison group that did not, such as the ratio of employment by age group to total employment and youth employment. This shows that there is no problem in estimating using the double difference method.

The results estimated using two different data based on the empirical model were exactly consistent with the issues raised in this study. In other words, the large-scale subsidy policy targeting youths had a statistically significant negative impact on the employment of age groups other than young people. In particular, the impact was particularly severe for the employment of the age group closest to young people, whereas the magnitude of the negative impact was smaller for age groups further away from young people.

The implications of these findings are significant. First, in discussing employment substitutability, there is a great need to transition the focus from the existing inter-generational substitutability issue into the issue of substitutability with neighboring age groups. Next, the employment substitutability between young people and their neighboring age groups is quite high. Considering this, it is essential to fundamentally reexamine the large-scale long-term subsidy policy targeting young people in general. In a situation where today’s youths largely replace yesterday’s youths, such large-scale policies for today’s youths are unlikely to receive support from many people for their feasibility.