

Abstract

The Impact of Demographic Changes on the Industrial Structure and Labor Market

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This study analyzes changes in the industrial structure and labor market due to demographic changes in examining overall impacts across industries and the labor market.

In order to analyze the effects of demographic change on the industrial structure, we look at both the demand and supply sides in the product market; that is, changes in consumption structure due to aging on the demand side and changes in net capital stock, labor and total factors in the production function on the supply side.

In the former, itemized consumption expenditures by household age group were analyzed using input-output tables to project future product demand by industry. The results of the analysis showed that although the magnitude of the changes due to aging is not large in terms of industry share itself, the share of agriculture and fishery products, food and beverages, health and social services increased while the share of education, restaurants and accommodation services decreased.

In the latter, industrial growth rates were analyzed using an economic growth decomposition method. The results showed that aging is negative for value-added growth through negative effects on the growth of net capital stock, labor and total factor productivity. Changes in industry have been shown to reduce the share of the manufacturing industry while increasing the share of the service industry. In particular, aging

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significantly reduced the proportion of the ICT industry while significantly increasing the proportion of the health and social services sectors.

In the labor market, the following three empirical features were evident concerning industrial growth. First, there is visible age segregation among workers by industry: workers exhibit a significant difference in industry employment concentration by age. The average age by industry varies widely, from 34 to 64 years, and the average age by occupation also varies, from 36 to 64 years. Second, industries with higher average worker age tend to be low-productivity industries with lower value-added per capita. Average age and value-added per person were found to have a negative correlation across industries. Third, age segregation by industry is largely explained by the age effect and is maintained through active labor redistribution. Higher value-added industries maintain a low average age through active age management, which encourages the employment of new young people and the release of older, middle-aged workers. In addition, lower-value added industries are actively engaged with net entry of workers in their 40s and 50s. We have also shown that workers from the same birth cohort tend to move from high value-added industries to low-value-added industries as they get older.

It can be concluded that demographic changes due to aging may increase the consumption of low-value-added goods, and thus expand the low-productivity and low-value-added sectors. This also includes an increase in demand for labor in these sectors. We have also found that workers tend to move from high value-added industries to low-value-added industries as they get older.

In total, demographic changes due to aging could place the Korean economy at risk of low-growth equilibrium without a proper response.