Analysis of the effects of Total Factor Productivity on Employment*

It is desirable to expand the base for domestic demand in order to improve the high export dependence of the Korean economy. In this regard, the relationship between total factor productivity and employment, estimated by the growth accounting method, was analyzed in this paper, with the use of the labor demand function and a structural VAR model.

Total factor productivity has increased by an annual average of 1.8% since 1990. By industry, Total factor productivity of the manufacturing sector grew by 5.7%, while that of the services sector declined by 0.2%. If seen in terms of period before/after the currency crisis, the pace of growth in total factor productivity has accelerated across all industries, centering around the manufacturing sector, and the pace of decrease has decelerated in the services sector since the crisis.

According to the results of the estimation of the labor demand function, total factor productivity has improved since the currency crisis, while the job creation effect has decreased in the manufacturing and services sectors and it has not been statistically significant across industry as a whole.

The estimation of the labor demand function has limitations in that it cannot capture the effect of employment changes triggered by factors determining total factor productivity. With this taken into consideration, an analysis using a structural VAR model was conducted of how technological shocks, a major determinant of total factor productivity, affect employment. The analysis shows that technological shocks do not have a significant influence on the growth of employment in manufacturing itself and that they actually reduce job creation in the services sector. In contrast, it was found that there was the effect of an increase in employment across industry as a whole from technological shocks. This can be interpreted as showing that technological shocks in the manufacturing and services sectors have a positive effect on employment in other

industries. After the currency crisis, however, technological shocks in a certain industry had a decreasing influence on the growth of employment in other industries.

These analysis results suggest that technology development and investment for higher productivity in a certain industry work to increase nationwide employment, rather than making a direct contribution to job creation in the particular industry. To expand the basis for domestic demand through job creation, it is important to ease price stickiness, enhance the price elasticity of demand and strengthen industrial linkages, along with expanding technology development and investment. This will act to heighten the effects of productivity on job creation which have declined since the currency crisis.

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