

Effects of Domestic R&D Expenditure on Manufacturing Productivity, Investment and Employment

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The shift to a knowledge-based economy has been accelerating, boosted by rapid technical development particularly in IT and telecommunications since the 1990s. In a knowledge-based economy, the accumulation of technology capital through R&D is considered to be the source of sustainable growth, and Korea is also witnessing the continuous growth of R&D expenditures and a gradual increase of its share in GDP. Given the growing importance of R&D expenditure in the national economy, we use panel data on the domestic manufacturing industry to empirically analyze its effects on productivity, real investment and employment, with a particular focus on manufacturing.

The analysis shows that the R&D expenditure of domestic manufacturing industry has contributed to improving labor productivity and positively affected corporate real investment after some time lag. Increased R&D expenditure may lead to a decline in real investment in the short term due to its constraint of available budget resources, but it acts to expand real investment in the long term by creating new areas for investment through improvement in productivity and the development of new products. These results imply that expanding R&D expenditure may have a positive effect to some degree in easing the recent slowdown in the growth in labor productivity and the sluggishness of real investment in the Korean economy. Meanwhile, the direction of the effects of R&D expenditure on employment is seen as being somewhat unclear, which appears attributable to the combination of two entirely different influences on employment, as the technological innovation arising from R&D expenditure has characteristics of both product innovation (which increases production factors inputs) and process innovation (which may cause demand for labor to decline).

In order that R&D expenditure can help boost real investment and employment and consequently heighten dynamism in every sphere of the economy, policy support should be strengthened so as to invigorate R&D expenditure in a balanced way in various sectors including the services industry with its relatively low productivity. In particular, product innovation-related R&D should be given greater support, so that it can act positively to heighten productivity and expand employment by creating new market spheres.

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I. Introduction

II. Current Status of R&D Expenditure in Korea

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