

Capital-Skill Complementarity, Labor Mobility, and Aggregate Elasticity of Substitution

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Abstract

This paper formulates to characterize an endogenous aggregate elasticity of substitution using capital-skill complementarity production technology, and labor mobility reallocation mechanism. The aggregate elasticity of substitution between capital and overall labors is an important concept concerning the functional distributive shares and the economic growth in the aggregate economy. Robert M. Solow has suggested that the large aggregate elasticity of substitution, which has to be more than a technological fact, especially at high capital-labor ratios may be postpone or hold off the influence of diminishing returns and allow sustained growth without technological progress. We show that a high capital intensity level at some capital-skill complementarity creates wage differentials which reallocate the large proportion of employment in skilled sector through mobility. This labor reallocation effect is likely to produce the larger aggregate elasticity of substitution. It implies that movements of aggregate labor shares in the short run are sharply different from those in the long run due to the endogenous aggregate elasticity of substitution that is an increasing function of the capital intensity. Moreover, the implication of the sensitivity of labor mobility on the aggregate elasticity of substitution is also investigated.

JEL classifications: E23, J24, O40

Key words: capital-skill complementarity, aggregate elasticity of substitution, labor mobility

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