Aggregate capital-labor substitution: preferences, not technology

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Abstract

Will the secular decline in the real interest rate ultimately lead to a rise, or a fall, in the labor share? This, along with many other long-run macro questions, depends on the aggregate substitutability of capital for labor in response to interest rates. In a one-sector model, what matters is the elasticity of substitution in the production function; in a multi-sector model, by contrast, I argue that there is a composite elasticity that depends on preferences, technology, and the network structure of the economy. I derive this elasticity as a function of micro elasticities and shares, and find that it is essential to account for heterogeneity in depreciation rates across different types of capital: longer-lived capital receives an overwhelmingly higher weight in the aggregate elasticity. Applying the theory, I then show that households' *preferences* play a dominant role: their elasticity of substitution between goods that are more and less intensive in longer-lived capital, particularly between housing and all other goods, drives the aggregate result. Empirically, I find that the elasticity of the capital/output ratio with respect to interest rates is most likely less than one, and declining real interest rates will push up the labor share in the long run.

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