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TOPICS IN FACTOR SUBSTITUTION AND ECONOMIC GROWTH

This master level course treats theoretical and empirical aspects of economic growth with a special focus on the ease of substitution between factors of production. Generally, models of economic growth work with production functions of Cobb-Douglas type that do not adequately mirror the essential role of factor substitution for different patterns of long-term growth. Making use of the more general form of CES production functions and introducing an explicit normalization procedure has more recently opened the door for new analyses in almost all areas of economic growth theory and empirics pointing out the decisive role of factor substitution for long-term development. This includes studies of monetary growth, of biased technical change and of the differences in the long-term growth patterns between major economic players in the 21st century.

Basic literature:

Klump, R. / McAdam, P. / Willman, A. (2012), "The normalized CES production function: theory and empirics, Journal of Economic Surveys 26, 769-799.

De La Grandville, O. (2016), "Economic growth. A unified approach", 2. ed., Cambridge.

Knoblach, M. / Stöckl, F. (2019), "What determines the elasticity of substitution between capital and labor? A literature review", DIW Working Paper 1794, Berlin.

1. *Factor substitution, elasticity of substitution and CES production functions*

Klump, R. / Preißler, H. (2000), "CES production functions and economic growth", Scandinavian Journal of Economics 102, 41-56.

2. *Factor substitution and models of economic growth*

Klump, R. / de La Grandville, O. (2000), "Economic growth and the elasticity of substitution: two theorems and some suggestions", American Economic Review 90, 282-291.

Klump, R. (2001), "Trade, money and employment in intertemporal optimizing models of growth", Journal of International Trade & Economic Development 10, 411-428.

Klump, R, / McAdam, P. / Willman, A. (2007), "The long-term SucCESs of the neoclassical growth model", Oxford Review of Economic Policy 23, 94-114.

3. Income distribution, firm size and growth

Aquilina, M. / Klump, R. / Pietrobelli, C. (2006), "Factor substitution, average firm size and economic growth", in: Small Business Economics 26, 203-214.

Klump, R. / Irmen, A. (2009), "Factor substitution, income distribution, and growth in a generalized neoclassical model", German Economic Review 10, 464-479.

4. *Factor substitution and monetary growth theory*

Klump, R. / Jurkat, A. (2016), "Monetary policy, factor substitution, and convergence", Macroeconomic Dynamics 20, 1-14.

5. *Factor substitution and directed technical change*

Acemoglu, D. (2002), "Directed technical change", Review of Economic Studies 69, 781- 809.

Acemoglu, D. (2003), "Labor- and capital- augmenting technical change", Journal of European Economic Association, 1, 1-37

Klump, R. / Miralles Cabrera, C. (2008), "Biased technological change in agriculture: the Hayami-Ruttan hypothesis revisited", Working Paper, Goethe-University Frankfurt / Main.

6. *Long-term growth patterns in the US, the Eurozone and China: A comparison*

Klump, R. / McAdam, P. / Willman, A. (2007), "Factor substitution and factor augmenting technical progress in the US: A normalized supply-side system approach", in: The Review of Economics and Statistics 89, 183-192.

Klump, R. / McAdam, P. / Willman, A. (2008), "Unwrapping the Euro Area Growth Puzzle", Journal of Macroeconomics 30, 645-666.

Manu, A.-S. / McAdam, P. / Willman (2019), "The role of factor substitution and technical progress in China's great expansion", ECB Working Paper No. 2180.

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