ABSTRACT

The basic concern of any empirical work is to employ statistical data that correspond to the notion of the theoretical variables in the model. The problems and economic consequences connected with the measurement of selected economic variables are the focus of this thesis. It consists of three chapters that in succession analyze the issues associated with the measurement of economic growth, multi-factor productivity and capital input into production.

The first chapter looks into the differences among the growth rates of GDP per capita based on data from the three most commonly used databases, namely International Financial Statistics, World Development Indicators and Penn World Table. Using a wide international dataset, we find significant differences in the growth rates that are mainly due to the adjustment for cross-country comparability of GDP per capita levels. Importantly, these differences are correlated with the level of development. We replicate six recent studies of growth determinants and find their results sensitive to the choice of data.

The second chapter analyses the sensitivity of calculated multi-factor productivity (MFP) growth to assumptions of growth accounting, concentrating on the measurement of quantity, composition and the respective shares of labor and capital inputs, and the time period. The analysis is carried out for seven OECD countries. The importance of the measurement issues varies substantially. The MFP growth rates are greatly influenced by the decision how the labor input is accounted for and by the assumptions about the efficiency of production and competition in product markets, which determine the weights with which capital and labor enter the growth accounting equation.

The last chapter presents an experimental measure of capital services for the Czech economy that is more appropriate than net capital stock when describing capital input to aggregate production. It weights the contributions of different types of assets by their marginal product instead of by their price, which is the case when using net capital stock. The analysis shows that growth in net capital stock, if used as an input into production function, underestimates the growth of capital input by more than one percentage point.