

## Reexamining the BLS Capital Measure

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Capital services are a key input of multifactor productivity (MFP) measures. The U.S. Bureau of Labor Statistics (BLS) estimates capital services inputs using investment data and information on the average service lives of different assets from the U.S. Bureau of Economic Analysis (BEA), along with a number of assumptions about rates of return and asset deterioration. BLS is currently evaluating the methods and procedures it uses to estimate capital services. The main goal of this project is to determine the sensitivity of its capital input measure to alternative assumptions. To illustrate, in its implementation of the perpetual inventory method, the BLS assumes that the productive capacity of an asset deteriorates according to a hyperbolic function with a beta of 0.5 for equipment and 0.75 for structures. It also assumes that the distribution of maximum asset lives within an asset class is approximately normal with a mean equal to the average asset life of the asset class. It has been argued that the hyperbolic deterioration function is more realistic than the geometric function that is commonly assumed, because relatively new assets are nearly as productive as brand new assets. However, the beta values used are based on empirical work from the late 1970s and early 1980s, and it is not clear these values are still appropriate. And although the assumed normal distribution of asset lives seems reasonable, it is not clear if there is any empirical evidence to support this assumption. In principal, it would be possible to collect additional data to validate these assumptions. However, before incurring the expense of collecting these data, it makes sense to determine how sensitive productivity growth estimates are to these assumptions. To this end, we will write a series of experimental programs that will allow us to determine the effect of alternative assumptions on the estimated growth of capital services inputs, which can be used to assess their effects on MFP growth.