

Capital and global productivity comparisons

By Robert Inklaar, Pieter Woltjer* and Daniel Gallardo Albarrán

Abstract: The role of physical capital is typically found to be limited in accounting for differences in GDP per worker. Yet this result may be related to a peculiar weakness in the development accounting literature, namely that capital is assumed to be a homogenous unit. However, as is well known from, in particular, the growth accounting literature, this assumption is misleading, as different types of capital assets have different marginal products and thus different user costs of capital. Specifically, a capital service measure will allocate greater weight to assets that have shorter asset life-times or rapidly falling asset prices, as both characteristics will drive up the cost a user would have to pay to hire the asset for a given period. In this paper, we take this point of view to a global dataset, the Penn World Table, to improve cross-country productivity comparisons. Such a global setting necessitates an implementation of the capital measurement methodology that is robust to the data limitations and the great variety of economic circumstances. In this paper, we will show how these new measures of capital input affect both Total Factor Productivity (TFP) levels across countries and growth over time.

* corresponding author: p.i.woltjer@rug.nl