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Digitalization and productivity: Evidence from EU manufacturing sector

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ABSTRACT

Manufacturing sector productivity is one of main driver for economy grow in Europe. In the context of manufacturing sector digitalization, relevance of influencing factors for productivity increase plays a key role. This paper aims to evaluate digitalization impact on EU manufacturing sector productivity, considering variables as relative size measures for the period of 2013-2020.

There are strong believe that digitalization is an engine of innovation and competitiveness in manufacturing sector. Changing processes and integration of digital technologies leads manufacturing sector towards productivity increase. We perform OLS regression on sample of 5013 records covering 27 EU countries and 642 manufacturing firms over the years 2013-2020. Analysis consists of such factors as operating revenue, number of employees per company, tangible fixed assets, intangible fixed assets, profit and loss, investment to digitalization. Highest value of calculated equations R-Square is 0.299 and significance level is sufficient. We study ratio of digital investment to total assets as dependent variable to understand how investment decision of company can be evaluated with independent variables, identified in literature review. Our results indicate that R-Square is 0.366 for relationship between digital investment and independent variables in analysis. Moreover, intangible assets effect is not significant considering digital investment outlay, which contradict believe stated in literature for direct intangible effect on digitalization. The main variable is number of employees per company with identified significant negative route.

Keywords: digital investment; European Union; impact measurement; manufacturing industry; productivity