

Effects of Infrastructure Investment on Economic Performance: A Meta-Analysis

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Abstract

Disentangling the nature, the role and importance of (the direct and indirect) economic effects in the evaluation of public investments in infrastructure remain a key issue in recent cost-benefit (CBA) studies. Empirical studies on the impact of public investment in infrastructure on economic performance in terms of output elasticities vary a lot and some of them are implausibly large. This is due essentially to different methodological approaches and analytical methods used to estimate them, which in turn depend on the type and nature of infrastructural project and the geographical scale and context where they take place.

The aim of this paper is to explore the way applied empirical studies try to calculate and integrate the economic effects of infrastructure investment on economic performance i.e. productivity or growth. We use a simple meta-analysis to systematically synthesize the results of previously studies and analyze their source of variation. First, we review and summarize existing literature so far and analyze –in a more systematic way- the source of (quantitative) variation in results reported by previously obtained empirical studies concerning the difference in the elasticity's reported. Second, we measure the contribution of public investments in infrastructure on (private) output using meta-analysis based on panel data.

We specifically ask the following questions: (1). To what extent may meta-analysis improve our understanding of the main causes underlying the differences of the estimated effects of infrastructure investment; (2). How and to what extent can this statistical approach contribute to improve (regional) economic models?; (3). Are there specific lessons to be learned from the use of this meta-analytical method/approach?. We find that estimated output elasticity of public capital show considerable heterogeneity. The type of capital, the level of aggregation of public capital data, the country type, and the econometric specification are identified as sources of this variation among studies analyzed in this paper.

Keywords: Infrastructure investment, Cost-Benefit Analysis, economic performance, Meta-analysis, Meta-regression.

JEL-Code: O40, H43, H54, C80, R11, R15, R53.

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