

Demographic Dividend Explained by Infrastructure Costs of Population Growth Rate, Distinct from Age Dependency

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Abstract : Although it is widely believed that fertility decline has benefitted economic advancement, particularly in East and South-East Asian countries, the causal mechanisms for this stimulus are contested. Since the turn of this century, demographic dividend theory has been increasingly recognised, hypothesising that higher proportions of working-age people can contribute to economic expansion if conditions are met to employ them productively. Population growth rate, as a systemic condition distinct from age composition, has not been similar attention since the 1970s and has lacked methodology for quantitative assessment. This paper explores conceptual and empirical quantification of the burden of expanding physical capital to accommodate a growing population. In proof-of-concept analyses of Australia and the United Kingdom, actual expenditure on gross fixed capital formation was compiled over four decades and apportioned to maintenance/turnover or expansion to accommodate population growth, based on lifespan of capital assets and population growth rate. In both countries, capital expansion was estimated to cost 6.5-7.0% of GDP per 1% population growth rate. This opportunity cost impedes the improvement of per capita capacity needed to realise the potential of the working-age population. Economic modelling of demographic scenarios have to date omitted this channel of influence; the implications of its inclusion are discussed.

Keywords : age dependency, demographic dividend, infrastructure, population growth rate

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