

Using Natural Capital Accounts to Integrate Environmental Change into Measures of Output and Productivity

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We demonstrate how SEEA-compatible natural capital accounts can be used to integrate environmental change into measures of economic output and productivity. Using the UK ONS's natural capital accounts, we construct environmentally-adjusted productivity metrics in the context of a rapid slowdown in productivity growth since the financial crisis and subsequent economic downturn of 2007-09. Formally incorporating Nature (e.g. CO2 emissions) into productivity metrics is crucial to understanding how domestic and international policy commitments relating to the Paris Agreement, Glasgow Pact, and Net Zero targets might affect economies and industries. For instance, if businesses face growing abatement costs but do not record a corresponding output, this would reduce measured productivity. If instead, such costs were recorded as capital investment (in natural capital) they would add rather than detract from GDP. Previous studies have adjusted productivity measures to incorporate 'bad outputs' (Schreyer et al 2013), and produced cross-country comparisons of environmentally-adjusted productivity metrics (OECD). Our contribution is two-fold. First, we believe we are the first to treat environmental protection expenditure as capital investment in the UK context. More fundamentally, where previous studies have adjusted economy-wide (i.e. aggregate) productivity measures to reflect emissions, we utilise the richness of UK data to construct sector-specific environmentally-adjusted productivity. This enables us to answer questions over whether improvements merely reflect a change in industrial composition. They don't.