

# Why do Economists Still Estimate Total Factor Productivity Growth? A Misleading Representation of an Accounting Identity

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**Abstract:** The Cobb-Douglas (C-D) production function, a cornerstone of economic theory for nearly a century, has recently received rigorous theoretical validation. While the computation of total factor productivity (TFP) growth remains valid, its estimation at the economy or sector level can yield misleading results. This study critically examines the deceleration of TFP growth across U.S. states from 2009 to 2021, offering insights into the dynamics distinguishing high and low TFP growth states. This research contributes to the ongoing debate surrounding the measurement and interpretation of TFP, emphasizing the need for caution when using aggregate production functions to draw conclusions about economic performance. Our findings have significant implications for policymakers and economists seeking to understand and stimulate productivity growth at both the state and national levels.

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