

TITLE: Total factor productivity, domestic knowledge accumulation, and international knowledge spillovers in the second half of the twentieth century

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ABSTRACT: This paper analyses the relationship between total factor productivity (TFP) and innovation-related variables during the second half of the twentieth century. We perform this analysis for several European countries (France, Germany, UK, and Spain) and the USA, extending Coe and Helpman's (Eur Econ Rev 39:859–887, 1995) empirical specification to include human capital. We use a new dataset of patents data for the past 150 years to calculate the stock of knowledge using the perpetual inventory method. Our time series empirical analysis confirms the heterogeneous relationship between innovation variables (domestic stock of knowledge, imports of knowledge, and human capital) and productivity. Our results reveal the extent to which observed differences in technology adoption patterns and the levels of endowment of such resources can explain differences in TFP dynamics across countries. The estimated coefficients confirm the considerable gap that still exists between the European countries and the USA in innovation-related variables. Furthermore, we obtain a finding that may have important implications for innovation policies: the higher the levels of human capital and domestic knowledge stocks, the higher will be the response of TFP to a 1 % increase in any of the aforementioned variables.

REFERENCE: Cliometrica (2015) [[LINK](#)]



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