

UNPACKING THE AGRICULTURAL BLACK BOX: THE RISE AND FALL OF AMERICAN FARM PRODUCTIVITY GROWTH

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Abstract

Has the “golden age” of U.S. agricultural productivity growth ended? In this paper we analyze the patterns of productivity growth revealed by detailed data encompassing more than a century of profound changes in American agriculture. We document a substantial structural slowing of productivity growth, following a late mid-century surge. We posit and empirically probe three alternative (but not mutually exclusive) explanations for this surge-slowdown phenomenon: (1) the time path of R&D-driven knowledge stocks; (2) a “big wave” of technological progress associated with “great clusters” of inventions; and (3) dynamic aspects of the structural transformation of agriculture, largely completed by 1980.

Keywords: U.S. agriculture, multifactor productivity, land and labor productivity, crop yields; big wave surge; slowdown; innovation; meta-technology; farm structure