Capital deepening and agricultural labor productivity

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Abstract: Labor productivity differences across countries are larger in agriculture than in non-agriculture. This observation has lead the literature to look for agriculture-specific distortions/inefficiencies in poor countries. However, labor productivity is not equal to TFP, and, over time and across countries, input intensification is more rapid in agriculture than in other sectors. This paper examines to what extent intensification of land, intermediate input use, capital deepening, and skill upgrading can account for the observed pattern in labor productivities. We first turn to the aggregate U.S. time series and uncover quantitatively similar changes in capital deepening and labor productivity as suggested by the cross-country data. U.S. agricultural census data helps us to characterize and estimate an agricultural production function at the gross output level. We quantify the importance of factor intensification, and, finally, we put our theory in a dynamic general equilibrium framework that captures the structural transformation out of agriculture.

Keywords: agriculture, capital deepening, labor productivity, development accounting, structural change.
JEL Classifications:

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