Structural change, market size and sector specific endogenous growth

Timo Boppart and Franziska J. Weiss

July 23, 2012

Abstract

In the course of growth, sectoral data features (i) changing relative expenditures of different sectors, (ii) non-constancy in the growth rates of relative prices and (iii) shifting relative TFP growth rates of sectors. This paper presents a simple model of directed technical change, which is able to reconcile these findings and in which structural change is driven by both a demand-side and a supply-side effect. Our theory and the input-output tables of the U.S. allow us to reconstruct how the structural change in terms of final consumption affected the market size of industry value added. Arguing that the structural change across broad categories of final consumption is exogenous from the perspective of an individual firm, this gives us an instrument for the industrial market size. We then empirically test for the market size effect of induced innovation. Our findings suggest that a 1 percent increase in market size leads to an increase of about 0.25 percentage points of the TFP growth rate.

Keywords: Directed technical change, input-output tables, market size, structural change.

JEL classification: C67, O14, O31, O33, O41.

*Preliminary and work in progress.
†We are especially grateful to Josef Falkinger, Berthold Herrendorf and Fabrizio Zilibotti for their support and fruitful discussions. Further we thank the seminar participants at the University of Leipzig and the University of Zurich for all their helpful comments.
‡University of Zurich, Department of Economics, Zürichbergstrasse 14, CH-8032 Zürich. E-mail: timo.boppart@econ.uzh.ch
§University of Zurich, Department of Economics, Mühlebachstrasse 86, CH-8008 Zürich. E-mail: franziska.weiss@econ.uzh.ch