ICT and Future Productivity: Evidence and Theory of a GPT*

Marco Briant i Laura Gati

Boston College Boston College

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Abstract

Information and Communication technology (ICT) is able to explain accelerations in productivity in sectors that are ICT users. We employ Structural VARs to investigate the effects of ICT supply shocks on Total Factor Productivity (TFP) and other macroeconomic variables. In response to this sector-specific supply shock relative prices of ICT goods and services immediately fall, ICT investment rises on impact, and TFP displays a delayed significant and persistent increase. In line with theories of ICT as a general-purpose technology, we analyze a two-sector general equilibrium model in order to rigorously rationalize previous results and estimate key parameters via impulse-response matching. We conclude that ICT accumulation is able to enhance productivity through a positive spillover effect which takes into account the overall level of diffusion of ICT capital in the economy.

*Correspondence: Department of Economics, Boston College, 140 Commonwealth Avenue, Chestnut Hill, MA 02467. Email: brianti@bc.edu (Marco Brianti) and gati@bc.edu (Laura Gati).

1 Introduction

Although there is large consensus on the importance of productivity as a driver of economic performances, less agreement is on the underlying sources that enhance its growth. For several years, most of the business-cycle literature purposely decided to avoid such a question by proxying movements in productivity as random shocks.[1]

However, the robust empirical evidence of the slowdown in productivity right before the great recession is summoning the literature to take a step back and devote more attention on the drivers of medium-term productivity growth.

2 Empirics

3 Model

4 Conclusion

References

Kydland, F. E. and E. C. Prescott (1982). Time to build and aggregate fluctuations. *Econometrica: Journal of the Econometric Society*, 1345–1370.

Long Jr, J. B. and C. I. Plosser (1983). Real business cycles. *Journal of political Economy 91*(1), 39–69.

[1]Kydland and Prescott (1982) and Long Jr and Plosser (1983) are among the first papers which consider productivity shocks on a general equilibrium model.