Do R&D and ICT Affect Total Factor Productivity Growth Differently?

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Paper Abstract: We analyze the effect of ICT and R&D on total factor productivity (TFP) growth across different industries in Sweden. R&D alone is significantly associated with contemporaneous TFP growth, thus exhibiting indirect effects. Although there is no significant short-run association between ICT and TFP, we find a positive association with a lag of seven to eight years. Thus, R&D affect TFP much faster than ICT-investments. We also divide ICT capital into hardware and software capital. To our knowledge, this distinction has not been made in any previous study analyzing TFP at the industry level. The results show that lagged hardware capital services growth is significantly associated with TFP growth. Hence, investments complementary to hardware are needed to reap the long-run TFP effects from reorganizing production.