

Productivity Growth in the Information and Communication Sector: The Role of Scale Economies, Technical Progress, Capacity Utilization and Reallocation

Wulong Gu
Statistics Canada

John Baldwin
Statistics Canada

Baldwin, Gu and Yan (2011) propose a decomposition method that delves deeper into the micro-components of aggregate labour productivity growth: a within-plant component that captures the effect of capital deepening, technological progress, scale economies, and input utilization at the plant level and a between-plant component that reflects the effect of the reallocation of inputs and outputs across plants on aggregate capital deepening and aggregate multifactor productivity growth. The decomposition builds upon on earlier work by Jorgenson and collaborators that decomposes aggregate productivity growth into its industry components but applies it in this instance to the plant level. It introduces non-neoclassical features of the plant-level economic environment such as imperfect competition and economies of scale and takes into account the effect of changes in capacity utilization. This paper examines the sources of the productivity growth in the information and communication sector using the method proposed by Baldwin, Gu and Yan (2011). The information and communication sector in Canada and many other developed countries had a rapid productivity growth since the early 1990s. A better understanding of the sources of growth in that sector will help us understand the international differences in the performance in that sector. It will also help us better understand the international differences in the aggregate productivity growth performance as the sector has been a key contributor to the aggregate productivity growth in many developed countries. The question of interest is the extent to which the aggregate labour productivity growth in the sector came from scale economies, technical progress, and capacity utilization and the extent to which the aggregate productivity growth came from firm entry and exit and reallocation among incumbents.