



Weak ICT Investment in Canada and the United States: the Role of Cloud Computing

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The Centre for the Study of Living Standards today released a report prepared for Innovation, Science, and Economic Development Canada entitled “*Weak ICT Investment in Canada and the United States: the Role of Cloud Computing*”.

After robust growth in ICT investment in Canada and the United States during the 1980s and 1990s, growth in ICT investment started to slow and its share in GDP entered a downward trajectory since the early 2000s. In an increasingly digitalized economy, weak ICT investment seems puzzling.

To explain this trend, this report focuses on two important facets of the changing ICT spending pattern driven by the rise in cloud computing starting in the mid-2000s:

1. Instead of purchasing ICT capital, organizations can purchase intermediate services from cloud service providers that appear to be more efficient in producing computing services.
2. Cloud service providers tend to build ICT equipment using computer and electronics components in-house but it is not reflected in the official ICT equipment investment statistics.

Three key findings of the report are highlighted below.

The purchase of cloud services in the total economy grew substantially since the mid-2000s:

- In Canada, the purchase of cloud services stood at \$2,554 million CAD in 2014, up from \$420 million CAD in 2006 (25 per cent annual growth).
- In the United States, the purchase of cloud services reached \$32 billion USD, up from \$7 billion USD in 2006 (20 per cent annual growth).

Own-account investment in ICT equipment by cloud service providers also grew substantially since the mid-2000s:

- In Canada, it reached \$5 billion CAD by 2014, up from \$2 billion in 2006 (15 per cent annual growth).
- In the United States, it reached \$54 billion USD in 2014, up from \$23 billion USD in 2006 (12 per cent annual growth).

Adding our estimates of own-account investment to ICT investment statistics changes the trend in the ICT investment series significantly. Focusing on Canada,

- ICT investment would have grown by 1.7 percentage-points more per year during the 2006-2014 period - 2.2 per cent instead of 0.5 per cent
- ICT investment as a share of GDP would have stabilized after 2006 instead of falling - from 2.7 per cent in 2005 to 2.7 per cent (instead of 2.1 per cent) in 2014

The key takeaway is that the ICT spending in both Canada and the United States did respond to a rise of cloud computing and that a significant part of the “weak ICT investment story” can be explained by own-account equipment investment by cloud service providers.

The report is posted at <http://www.csls.ca/reports/csls2018-04.pdf>

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The Centre for the Study of Living Standards (CSLS) is a national, independent, Ottawa-based not-for-profit research organization. Its primary objective is to contribute to a better understanding of trends and determinants of productivity, living standards, and economic well-being in Canada through research.