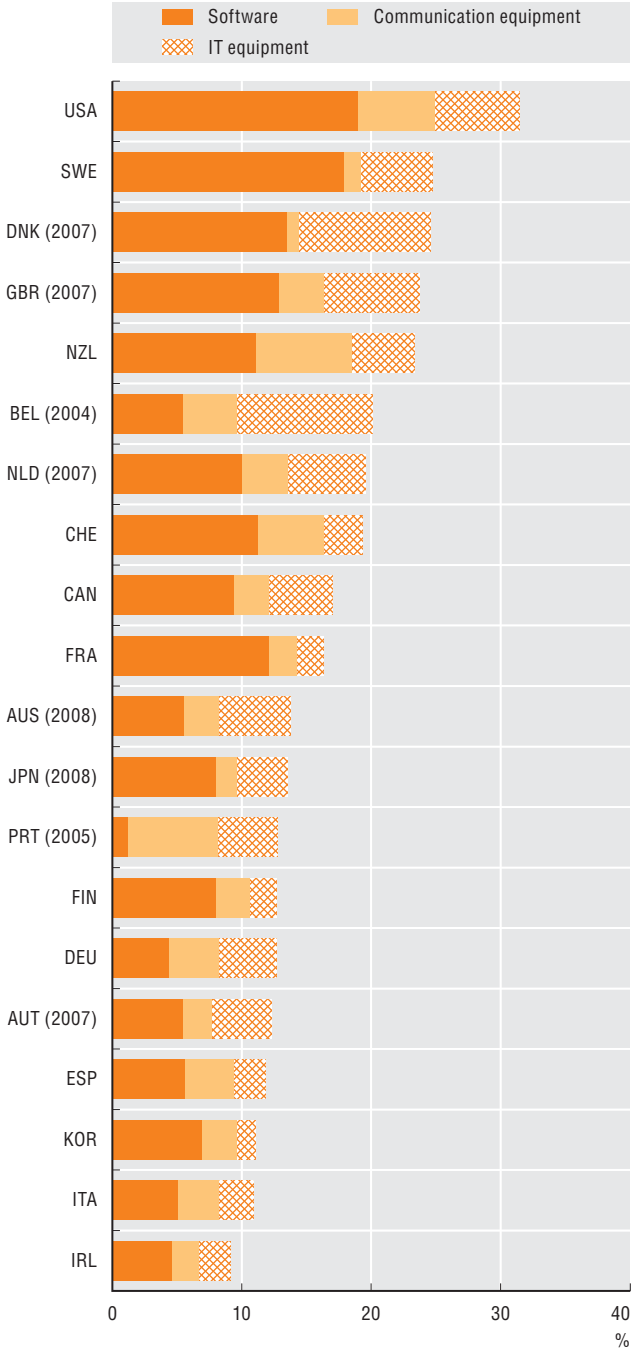
8. Investment in ICT

ICT investment by asset in OECD countries, 2009

Percentage of non-residential gross fixed capital formation, total economy



Source: OECD, Productivity Database, May 2011. See chapter notes.

StatLink http://dx.doi.org/10.1787/888932486127

Investment in physical capital is important for growth. It is a way to expand and renew the capital stock and enable new technologies to enter the production process.

Information and communication technology (ICT) investment accounts for a considerable share of total fixed non-residential investment. In 2007-09, it represented over 30% in the United States, about 25% in Sweden and Denmark, and over 20% in the United Kingdom and New Zealand.

Software has been the fastest-growing component of ICT investment, reaching 19% of total fixed non-residential investment in the United States, 18% in Sweden and over 12% in Denmark, the United Kingdom and France. Communications equipment accounted for 7.3% of total fixed non-residential investment in New Zealand and 6% in the United States, while information technology (IT) equipment accounted for over 10% in Denmark in 2007. In the last two decades, software has been the fastest-growing component of ICT investment, reaching 74% in France, 72% in Sweden, 63% in Korea and 60% in the United States. Communications equipment accounted for over 30% of ICT investment in Spain, Germany and New Zealand; the share of IT equipment was over 40% in Denmark and Australia, 37% in Austria and over 30% in Germany, the United Kingdom and New Zealand.

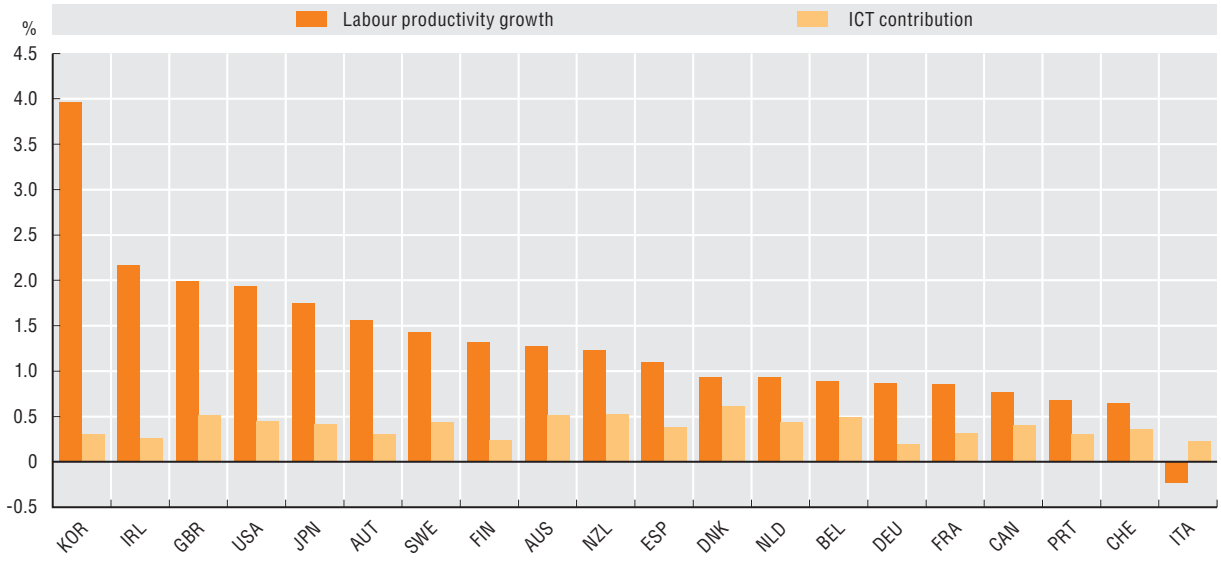
Over 2000-09, ICT investments provided a significant contribution to labour productivity growth in a number of OECD countries. They accounted for 66% of labour productivity growth in Denmark, over 50% in Switzerland, Belgium and Canada, and no less than 40% in the Netherlands, New Zealand and Australia. However, the higher growth rates in labour productivity in Korea, Ireland, the United Kingdom, the United States and Japan are mainly explained by the rise in multi-factor productivity.

Definitions

Investment is defined in accordance with the 1993 System of National Accounts. *ICT investment* covers the acquisition of equipment and computer software used in production for more than one year. ICT has three components: information technology equipment (computers and related hardware); communications equipment; and software. *Software* includes acquisition of pre-packaged software, customised software and software developed in-house.

Labour productivity is defined as GDP per hour worked. *Multi-factor productivity* measures overall efficiency in the use of production inputs. *Labour productivity growth* is explained by the rate of growth in capital inputs (ICT and non-ICT capital) and by multi-factor productivity growth.

Contribution of ICT capital growth to labour productivity growth, 2000-09



Source: OECD, Productivity Database, June 2011.

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Measurability

Correct measurement of investment in ICT, in both nominal and volume terms, is crucial for estimating the contribution of ICT to economic growth and performance. In the national accounts, expenditure on ICT products is considered investment only if the products can be physically isolated (*i.e.* ICT embodied in equipment is considered not as investment but as intermediate consumption). This means that ICT investment may be underestimated and the order of magnitude may differ depending on how countries treat intermediate consumption and investment. In particular, expenditure on software has only recently been treated as capital expenditure in national accounts, and methodologies still vary considerably. Difficulties for measuring software investment are also linked to how software is acquired, *e.g.* via rental and licence or embedded in hardware. Moreover, software is often developed on own account. To tackle specific problems regarding software in the SNA93 revision of national accounts, a joint OECD-EU Task Force on the Measurement of Software in the National Accounts has developed recommendations for the capitalisation of software. These are being implemented by OECD member countries. Other issues that affect international comparability of ICT capital relate to deflators applied, breakdown by institutional sector and temporal coverage.