

# ESRI Research Bulletin

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and Communication Technologies Sector: What Works?*

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# Boosting Foreign Direct Investment in the Information and Communication Technologies Sector: What Works?

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Information and communication technologies (ICT) industries are key drivers of a knowledge-based economic growth. They are characterised by fast technological changes, high innovation intensity, and high productivity. They also drive structural changes in the economy resulting in the emergence of new industries. Furthermore, ICT industries are also highly internationalised via foreign direct investment and trade.

Given the economic importance of ICT industries and the potential benefits from the technological change they bring to the whole economy, attracting foreign direct investment in the ICT sector is an important policy objective in many European Union (EU) countries. However, existing evidence on what determines the location choice of foreign affiliates in ICT industries to guide such policies is limited to case studies.

Our recently published research paper<sup>1</sup> contributes to filling this gap by providing empirical evidence on determinants of the location choice of foreign affiliates in ICT manufacturing (manufacture of office machinery and computers; manufacture of radio, television and communication equipment and apparatus; manufacture of medical, precision and optical instruments) and ICT services (post

<sup>1</sup> Iulia Siedschlag, Xiaoheng Zhang and Donal Smith, "What determines the location choice of multinational firms in the information and communication technologies sector?", *Economics of Innovation and New Technology*, published online, 18 April 2013, <http://dx.doi.org/10.1080/10438599.2013.783266>.

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and telecommunications; computer and related activities). Specifically, this research analysed the location decision of newly established foreign affiliates of multinational enterprises in the ICT sector in regions within EU countries over the period 1998-2008. In addition, it examined and compared the location decisions of EU-based and US-based multinationals.

The research results indicate that there were both similarities and differences with respect to the determinants of the location choice of foreign affiliates in ICT manufacturing and ICT service industries. In ICT manufacturing as well as in ICT services, the location probability of foreign affiliates increased with demand-side determinants such as market size and market potential as well as supply-side factors such as human capital intensity. In addition, positive externalities from the presence in the region of other foreign-owned enterprises in the ICT sector, the availability of public goods (proxied by the income tax rate) in the host country and the size of the services sector in the neighbouring regions increased the attractiveness of regions to foreign direct investment in the ICT sector. In contrast, the region's labour costs and human capital intensity in neighbouring regions decreased the probability of location. The region's innovation intensity as well as the innovation intensity in the neighbouring regions increased the attractiveness to foreign direct investment in ICT manufacturing, while foreign direct investment in ICT service industries was positively but not significantly associated with this supply-side factor.

Furthermore, this research finds that multinationals in the ICT sector based in the EU as well as those based in the US were attracted by market size and positive externalities from the presence in the region of other foreign-owned enterprises in the ICT sector. However, they responded differently with respect to other location determinants. In the case of EU-based multinationals, the location probability of foreign affiliates in ICT manufacturing increased with the availability of public goods as well as with the region's human capital intensity and decreased with labour costs. In contrast, the location probability of US-based multinationals increased with the region's innovation intensity and decreased with the corporate tax rate and the size of the industry sector in the region. In

the case of foreign affiliates in ICT services, the region's human capital intensity increased the location probability of EU- based as well as of those US-based multinationals over and above market size and positive externalities from the presence of other foreign-owned firms in ICT services. While market potential increased the location probability of US-based multinationals in ICT services, EU-based multinationals in ICT services responded positively to the availability of public goods.

These research results suggest three policy implications. First, enhancing the knowledge base of regions by increasing their human capital and innovation intensity are likely to foster the attractiveness of regions to foreign direct investment in the ICT industries. Second, positive externalities from clustering of foreign affiliates in the ICT industries outweigh competition effects. Third, targeted policies taking into account differences between manufacturing and services and the country of origin of investors would be more effective in attracting foreign investment in the ICT industries.

In summary, the success in attracting foreign direct investment in the ICT sector in EU countries and regions appears to be linked to a mix of policies in place rather than a single policy instrument such as the corporate tax rate. While a low corporate tax rate appears to be linked to the location choice of US-based multinationals in ICT manufacturing over and above other factors such as market size and the region's innovation intensity, it does not explain on its own the attractiveness of EU countries and regions to foreign direct investment in ICT services.