The impact of foreign direct investment on labour productivity in the Chinese electronics industry

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Abstract

Foreign direct investment (FDI) may have a positive impact on labour productivity in recipient industries through direct introduction of capital, technology and management skills and indirectly through spillover effects on domestic firms. This study uses a model intended to examine the overall effects of inward FDI in the Chinese electronics industry. Official data are used for 41 sub-sectors of the industry in 1996 and 1997 having differing levels of FDI. Labour productivity is modelled as dependent on the degree of foreign presence in the industry and other variables, namely capital intensity, human capital and firm size for scale factors. The econometric results suggest that foreign presence in the industry is associated with higher labour productivity. © 2001 Elsevier Science Ltd. All rights reserved.

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1. Introduction

The role of foreign direct investment (FDI) in productivity growth has long been of interest to academics and policy-makers. As noted by Balasubramanyam, Salisu, and Sapsford (1996), it is the ability of FDI to transfer not only production knowledge but managerial skills that distinguishes it from all other forms of investment, including portfolio investment and foreign aid.

The impact of FDI on productivity can either be direct or indirect. Inward FDI is associated with the introduction of additional capital and new production and managerial skills that have a direct effect on productive efficiency. FDI also provides indirect effects by knowledge diffusion (Blomstrom & Kokko, 1998). It is sometimes suggested that the most significant channels for the dissemination of modern technology are external effects or "spillovers" from FDI, rather than formal technology transfer agreements (see, for example, Blomstrom, 1989; Mansfield & Romeo, 1980).

This paper reports research into the impact of FDI on labour productivity using a dataset from the Chinese electronics industry for 1996 and 1997. Labour productivity is modelled as dependent on the degree of foreign presence in the industry and other explanatory variables which are known to have a positive impact on productivity, namely capital intensity, human capital and firm size for scale factors. Foreign presence in the industry, reflected in cumulative FDI, is found to be associated with higher labour productivity.

The paper is organised as follows. The next section details the potential impact of FDI on productivity in terms of direct and indirect effects and reviews relevant previous studies. The model, data and methodology are introduced in Section 3, followed by the results from the econometric estimations in Section 4. The final section of the paper, Section 5, presents the conclusions and discusses the implications for policy-makers and company managers.

2. FDI and productivity

Inward FDI has been identified as an important source of efficiency gains during economic development in the host country (see, for example, de Mello, 1999; Fleisher & Chen, 1997; Markusen & Venables, 1999; Walz, 1997). In particular, it has been viewed as an important source of both direct capital inputs and technology and knowledge spillovers (Blomstrom & Kokko, 1998) and therefore has been introduced as a separate variable, in addition to labour and capital, in the traditional production function. For instance, Balasubramanyam et al. (1996) adopt the following model to assess the impact of FDI on growth in developing countries:

$$y = \alpha + \beta l + \gamma(I/Y) + \psi(FDI/Y) + \phi x, \qquad (1)$$

where y is the growth rate of gross domestic product (GDP), l is the growth rate of labour input, I is domestic investment, FDI is foreign direct investment, Y is domestic GDP and x is the growth rate of exports. Using a sample of 46 developing countries, their study concludes that the beneficial effect of FDI, in terms of enhanced economic