



Provision of public infrastructure, foreign investment and welfare in the presence of specialisation-based external economies

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Abstract

It is widely believed that provision of production infrastructure, among other things, attracts foreign investment. In the context of a small open economy model where monopolistic competition prevails in the intermediate good sector, this paper focuses on the impact of changes in the supply of a public good on foreign investment and welfare. From the point of view of producers, the public good is akin to public infrastructure that reduces the fixed cost associated with the production of the intermediate good. The presence of monopolistic competition in the intermediate good sector gives rise to specialisation-based external economies in the industrial good. The size of these economies affects the magnitude of all comparative static responses presented in this paper. It is shown that an increase in the supply of the public good decreases foreign investment as long as the public good is more (or equally) capital intensive as compared to the agricultural good and the industrial good is more (or equally) capital intensive as compared to the intermediate good. In the absence of specialisation-based external economies, an increase in the supply of the public good leads to an unambiguous decrease in welfare.

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1. Introduction

The end of the cold war and rapid improvement in communication technology during the 1980s has resulted in a significant increase in capital flows across international boundaries. It is well known that almost 50% of the US foreign investment takes place in Europe and vice versa (see [Appleyard et al., 2006](#)). During the last two decades, there has been a significant increase in foreign investment in developing countries. Since the Asian financial crisis of 1997–1998, China has become a major recipient of foreign investment. Rapid economic growth experienced by countries such as Malaysia and Thailand before 1997–1998 can be attributed to significant capital inflows.¹ It has been argued that a number of Southeast Asian economies were successful in attracting significant amount of foreign investment because of, among other things, the availability of modern production infrastructure (see [Lipse, 2003](#); [Hill, 2005](#)).

Production infrastructure can be viewed as a public input that reduces private sector's cost of production. A number of available studies have attempted to measure the productivity of public infrastructure. These studies include [Aschauer \(1989\)](#), [Otto and Voss \(1994, 1998\)](#), [Holtz-Eakin and Lovely \(1996\)](#), [Morrison and Schwartz \(1996\)](#), [Lau and Sin \(1997\)](#), [Paul \(2003\)](#) and [Cohen and Paul \(2004\)](#).² [Delorme et al. \(1999\)](#) have found a negative relationship between public infrastructure and technical efficiency. [Berndt and Hansson \(1992\)](#) have attempted to measure the contribution of public infrastructure in Swedish economy. [Kim \(1998\)](#) examined the effect of infrastructure investment on Korean economy. He concluded that infrastructure investment has resulted in economic growth and inflation. [Feltenstein and Ha \(1999\)](#) have attempted to measure the impact of public infrastructure on Mexican GDP. [Rioja \(1999\)](#) has shown that public infrastructure investment can lead to a sizeable increase in GDP. [Boisso et al. \(2000\)](#) attempt to measure the impact of changes in public infrastructure provision on slowing down of the US productivity. [Lin \(2001\)](#) examines the impact of public infrastructure provision on economic development in some regions of China. [Moreno et al. \(2002\)](#) have attempted to distinguish between short- and long-run effects of public infrastructure. [Salinas-Jimenez \(2004\)](#) has considered the impact of public infrastructure investment on productivity and efficiency in Spanish regions. By estimating a translog cost function, [Teruel and Kuroda \(2005\)](#) have attempted to measure the contribution of public infrastructure in Philippines agriculture sector. They concluded that by reducing the cost of production, public infrastructure has enhanced the productivity in Philippines' agricultural sector.

[Krol \(2001\)](#) provides an excellent summary of the existing literature, which suggests that reduction in congestion and adequate maintenance contribute to greater benefits from public infrastructure. By making use of the Greek data, [Rovolis and Spence \(2002\)](#) have shown that public infrastructure and private capital are complementary. However, [Reinikka and Svensson \(2002\)](#) have shown that poor public capital significantly reduces the complementary private investment.

[Boarnet \(1998\)](#) argues that due to negative spillover effects, public infrastructure investment can lead to growth in one sector at the expense of the other. [Demetriades and Mamuneas](#)

¹ [Asiedu and Lien \(2004\)](#) have argued that capital controls have adversely affected the FDI flows to East Asia during the 1990s. For a recent alternative explanation of FDI flows see [Hosseini \(2005\)](#).

² For an excellent review of the related literature, see [Gramlich \(1994\)](#) and [Poot \(2000\)](#). It is also worth mentioning that [Abe \(1990\)](#) has shown that changes in the supply of a public input can influence the pattern of trade whereas [Casella and Feinstein \(2002\)](#) have examined the role of public goods in facilitating trade among jurisdictions within the context of economic integration.

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