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Agglomeration and the public sector

Michael W.M. Roos*

Department of Economics, University of Dortmund, D-44221 Dortmund, Germany

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Abstract

I present a two-region model in which the actions of local governments can cause the agglomeration of population. A local public good is a centripetal force. The centrifugal force is competition among interregionally mobile workers for housing. In the model the supply of the local public good rises in the number of workers in a region. This creates incentives for immigration. Depending on the relative strength of the centrifugal force, full agglomeration of all workers in one region can result even with perfectly identical regions. This creates an incentive for the local governments in each region to provide the public good strategically leading to overprovision and suboptimal agglomeration.

JEL classification: R12; H41
Keywords: Agglomeration; Local public goods; Regional competition

1. Introduction

The question why agglomerations of economic activity form is an old one but recently regained a lot of attention in the economic literature. The recent literature on agglomeration basically treats two types of reasons for the clustering of firms and households (see Fujita and Thisse, 2000). The first type of explanation are the so-called Marshallian external economies (spillovers, labor market externalities, and shared inputs). The second and more prominent explanation are the pecuniary externalities which are modeled by the New Economic Geography (Krugman, 1991; Venables, 1996; Fujita et al., 1999). In both

* Tel.: +49-231-755-3441; fax: +49-231-755-3069.
E-mail address: m.roos@wiso.uni-dortmund.de (M.W.M. Roos).

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theories, the agglomeration forces arise from the interaction of many private agents that behave nonstrategically. The public sector is almost never considered as an agent so that public actions and agglomeration are rarely linked[1].

This neglect of the public sector in the agglomeration literature is both concerning and surprising. It is concerning since the governments are powerful actors that try to influence the spatial allocation of factors for many reasons (see Funck, 1995). Theories of the spatial distribution of economic activity, which omit this force, are incomplete and not applicable to real world issues. It is also surprising because there already is a well-established literature which discusses the local governments' influence on the interregional allocation of mobile factors in public finance: the Tiebout literature (see Tiebout, 1956; Stiglitz, 1977; Wildasin, 1987) and the literature on tax competition (see Wilson, 1986, 1999; Wellisch, 2000).

Especially the Tiebout literature is very close to some of the problems that are discussed in the agglomeration literature. It analyzes how households react to the provision of local public goods, i.e. how the public sector influences the spatial distribution of mobile households. Although this question is closely linked to the question how agglomerations form, the Tiebout literature has a different focus than the agglomeration literature. The main question analyzed is whether competition among local authorities leads to the efficient decentralized provision of public goods and thus can solve the freerider problem. In most models, the agglomeration question cannot be analyzed explicitly because they treat a large number of identical regions without strategic interactions and have very general assumptions concerning preferences and technologies. In such a setup, agglomeration never arises or is excluded by assumption (see, e.g. Richter, 1994) since it is considered as a border solution which does not allow the derivation of optimal tax policies. An exception is Stiglitz (1977), which presents a two-region model. In this model, it is explicitly shown that partial or total agglomeration of all mobile households in one of the two regions can arise because of the provision of a pure local public good financed by a tax on the residents of the respective region. The agglomeration force is the following circular causality: a larger population in one region means that the taxbase is broader so that more of the public good can be provided. This increases the utility level in that region so that further immigration from the other region is beneficial.

In this model, I pick up the idea that local public goods might be a centripetal force and introduce this insight into a model which has a strong New Economic Geography flavor. One important contribution is to incorporate the public sector into the theories of agglomeration. Although the insight that the public sector might be a reason for agglomeration is not new, the recent works on agglomeration have completely ignored the whole public finance literature[2]. The model is a general equilibrium model with two

[1] Exceptions are Ades and Glaeser (1995) and Krugman (1996). In Ades and Glaeser (1995), we find the idea that a corrupt government causes a transfer of resources to a country's capital resulting in agglomeration. Krugman (1996) mentions political centralization as an important cause of agglomeration. Centralization causes a direct employment effect, a concentration of lobbyists, and multiplier effects of asymmetric government spending. The models of Walz and Wellisch (1996) and Maurer and Walz (2000) analyze strategic behavior of local governments and explain the concentration of firms but not of population.

[2] Stiglitz (1977) which is almost an agglomeration model, is neither cited in the careful survey by Fujita and Thisse (2000) nor in the textbooks by Fujita et al. (1999) and Brakman et al. (2001), which summarize the recent agglomeration literature.