

論文の要旨

氏名 楊 通

論文題目 Study on the Optimal Matching Grant Rates in the Models of Tax
Competition among Jurisdictional Governments
地方政府間の租税競争モデルにおける最適補助率についての研究

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The matching grant program from a central government to the jurisdictional governments is a strong instrument to solve the problem of an insufficiently provision of local public goods. The under-provision of public goods arises from different kinds of externalities. In this paper, we analyze the relationship between the optimal matching grant rates and these externalities.

In chapter two, four types of the externalities are assumed, that is, external effect of consumption, tax externality, external effect of public inputs and external effect of production. External effect of consumption is that the local public goods that one jurisdiction provides can raise the jurisdictional inhabitants' utility and that of other jurisdictions' inhabitants. Tax externality is that if a jurisdictional government finances its local public goods by taxing movable capital among jurisdictions, the inhabitants in the other jurisdictions are also affected by the tax rate in the jurisdiction. External effect of public inputs is that the local public inputs that one jurisdiction provides can attract the movable factors of production in the other jurisdictions. External effect of production is that local public inputs that one jurisdiction provides can raise the jurisdiction's productivities and that of other jurisdictions' productivities.

This chapter assumes that the jurisdictional governments provide the local public expenditure with the characteristics of both public goods and public inputs. That is, local public goods of which the provision level is a variable in residents' utility function and in that for regional production function, and the spillover effects of which can influence other regions' utility of inhabitants and production level. First, we will analyze the case in which the private capital cannot move among jurisdictions. Then, we will analyze the case in which the private capital can move freely among jurisdictions. By assuming a good with the characteristics of both public goods and public inputs, we obtain some new conclusions that cannot be obtained from the

literature in which the local public goods and the local public inputs are considered separately. For example, even if the private capital is assumed to be immovable, the effect of raising the productivity as a public input may alleviate the under-provision of public goods owing to external effect of consumption.

Moreover, in this chapter, the productive externalities (the productive spillover effects) that directly raise the other jurisdictions' productivities are also considered, which are not analyzed in the literature. For example, if roads, which are the goods with the characteristics of both public goods and public inputs, are built in one jurisdiction, they can also work for the productivity, procuring raw materials and the logistics in the other jurisdictions. Of course, this effect may be zero in many cases. As the character of their inputs and their productive spillover effect have not been considered until now, if we consider those, the matching grant rate for public goods such as environmental policies should be lower, and the rate for public goods such as education or canals should be higher.

In chapter three, we introduce agency costs into the model to generalise the effect of agency problems on the horizontal fiscal externalities and benefit spillovers leading to under-provision of public goods.

Agency problems arise in any environment involving principal-agent relationships. Following the theory of agency, if the principal hopes to ensure that the agent will make decisions that are optimal for the principal rather than the agent themselves, the differing objectives of the pair make agency costs inevitable. This issue not only applies to firm ownership structure, but also to the political agency process.

Horizontal fiscal externalities originating from tax competition and benefit spillovers result in under-provision of local public goods (inefficiency). However, these externalities also can ease the under-provision of local public goods resulting from agency costs (inefficiency correction). These two effects simultaneously work in opposite directions. If agency costs are small and benefit spillover is zero, the former effect exceeds the latter one, meaning horizontal fiscal externalities aggravate the under-provision of local public goods. Conversely, when agency costs are small and benefit spillovers are perfect, or when agency costs are large enough, the latter effect exceeds the former one, which means horizontal fiscal externalities may ease the under-provision of local public goods. In particular, when agency costs are small and benefit spillovers are imperfect, the magnitude of the two effects will be ambiguous.

This chapter has focused on the effect of horizontal fiscal externalities on the optimal matching grant rate in a model where agency costs are inevitable. When benefit spillover is zero, the relationship between the optimal matching grant rate and private capital demand elasticities with respect to capital tax depends on agency costs. This means that the inefficiency arising from agency costs may be eased by tax competition only if the disutility of effort is so large that the benefits resulting from tax competition exceed its costs when benefit spillover is zero. However, if benefit spillovers occur among jurisdictions, the results will be ambiguous.

In chapter four, we reconsider the provision of a local public good by a jurisdictional government in a two-period economy with spillover effects when the jurisdictional government is assumed to be hyperopic or farsighted. The corrective device used by the central government to ensure the optimal level of the local public good is provided by the jurisdictional government should be adjusted accordingly.

The costs of moving faced by private capital, which are also referred to as transaction costs, should not be ignored in a tax competition model. When the private capital investor has decided to locate in one jurisdiction and invest in some projects, these projects will usually last for a long period of time. Once the private capital is invested, it is usually quite difficult to abandon the projects and leave the jurisdiction because of the large moving costs. Even if the private capital can move freely among the jurisdictions in the initial stage, imperfect mobility is inevitable in the later stages. Therefore, we must consider both transaction costs and inter-temporal effects in a tax competition model.

By introducing spillover effects into our analysis, we verify that the jurisdiction with the less efficient production technology may choose to tax private capital in the first period, assuming that a lump-sum tax is available to it, and receive substantial spillover benefits from the other jurisdiction with more efficient production technology in the second period when the jurisdiction is hyperopic and benevolent. A clear result is that the revision of a corrective device used by the central government in the first period to ensure an optimal level of a local public good is provided by a hyperopic jurisdictional government, significantly depends on the relative size of the income and spill-in effects in the second period. The relative size of the two effects, which work in opposite directions, is determined by the tastes and endowments of the jurisdictions, the form of their production functions and the degree of spillovers, among other factors. When the income effect is larger than the spill-in effect in the second period, the optimal matching grant rate (the Pigovian tax rate) in the first period from the central government to a more hyperopic jurisdictional government should be increased (decreased). Conversely, when the spill-in effect is larger than the income effect in the second period, the optimal matching grant rate (the Pigovian tax rate) in the first period from the central government to a more hyperopic jurisdictional government should be decreased (increased).

Notice that the external validity of this result depends on a political strategy of the politicians. The benefits that the politicians can obtain in one jurisdiction (the re-election rent) equals the marginal increase in the probability of re-election multiplied by the value of being re-elected. Of course, these factors are seen as the exogenous variables in this model. If the politicians would like to stand for election for the next term, the conclusion would be valid and could also be a benchmark for some extensions in the future. However, if the politicians would like to stand down, they would be myopic and their discount factor might be zero in the first period.

In some suburban areas, for example, less populated areas surrounding a

metropolitan area but of lower socioeconomic status, beneficial spillovers of local public goods from the urban core are necessary and essential for the suburban residents. If the politicians in these kinds of jurisdictions place a significant weight on the distant future, the under-provision of local public goods might be eased to some extent. Accordingly, the central government should decrease the current period's optimal matching grant rate to some extent. However, in some urban areas, for example, a densely populated urban core in a metropolitan area with high socioeconomic status, benefit spillovers of local public goods from the surrounding territories are unnecessary and negligible for these urban residents. If the politicians in these kinds of jurisdictions place a significant weight on the distant future, the under-provision of local public goods might be aggravated to some extent. Accordingly, the central government should increase the current period's optimal matching grant rate to some extent.