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# Multinationals, tax competition and outside options[☆]

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ABSTRACT

We analyze tax competition when a multinational firm has invested in two countries but also has an outside option, e.g., towards a third country. An interesting finding is that more attractive outside options for firms may constitute a win–win situation; the firm as well as its present host countries may gain when this occurs. The reason that it benefits the host countries is that an enhanced outside option reduces the inefficiencies of tax competition. An implication of the result is that better outside options for multinational firms may reduce the gains from host countries' policy coordination and thus reduce those countries' incentives to coordinate their policies. Also, with a development where outside options become more accessible, the perceived costs of tax competition, e.g., in terms of underprovision of public goods, may be overestimated. Our findings may also have implications for international negotiations, since it provides an argument for mutual reduction of entry barriers, as this may improve outside options.



## 1. Introduction

Lower barriers to entry and developments in world capital markets have increased the actual and potential mobility of multinational enterprises (MNEs). This poses challenges for host countries' tax and regulation policies Osmundsen et al. (1998). For a number of countries, such as, for example, the member countries of the European Union, the policy challenge is two-faceted. First, they are facing competition from other similar (e.g. EU member) countries, where national governments try to attract new corporate investments.[1] Second, many MNEs have attractive investment and localization options in entirely different countries (outside the EU-area), e.g., in low cost countries. As global developments make such outside options more accessible and attractive for MNEs, how will host countries react? What will be the implications for their tax policies, for the MNEs' investment decisions and for host countries' welfare? In this paper we address these issues. An interesting finding is that more attractive outside options for MNEs may constitute a win–win situation; the MNE as well as its present host countries may gain when this occurs. The reason is that a more attractive outside option for the firm (in the sense of being more attractive for all types and particularly so for highly efficient types of the firm[2]), may affect the strategic tax competition between its present host countries in such a way that a Pareto improvement is brought about. In such cases the enhanced outside option enforces a reduction in the investment distortions induced by tax competition between the host countries.

In line with the complex characteristics of most multinational firms,[3] we assume that such a firm has better information than the governments about its efficiency.[4] Possessing private information about efficiency, the MNE has incentives to undertake strategic investments. On the one hand, to receive favorable treatment in terms

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[1] In general, foreign direct investments have been rapidly increasing (see Markusen,1995), and recent empirical research shows that effective tax rates are important factors for determining the localization decisions of multinational enterprises (see, e.g., Devereux and Freeman,1995).

[2] See Section 6.2 for the precise definition.

[3] According to Markusen (1995), multinationals tend to be important in industries and firms that are characterized by: high levels of R&D relative to sales, a large share of professional and technical workers in their workforce, products that are new or technically complex, and high levels of product differentiation and advertising.

[4] The international nature of an MNE and the high number of interfirm transactions make it hard for authorities to observe its true income and costs. Complex technology also implies obstacles for authorities to ascertain the firm's efficiency, and thereby derive its true operating profits. Many of the inputs are not standard commodities with established market prices, making it difficult to monitor costs or impose norm prices.

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of taxation, the firm may like to be conceived as a low-productivity type in the EU-countries. But it would also like to indicate that it is highly mobile, i.e., unless operating conditions in the EU-area are sufficiently favorable, it may reschedule investments or migrate altogether to another region where net costs are lower. To signal a credible threat of relocation, the firm would like to be conceived as having a high reservation profit, i.e., a high productivity on alternative investments. However, under the reasonable assumption that the firm's productivities inside and outside the EU-area are positively correlated, the firm cannot at the same time indicate a low and a high productivity. So the firm has countervailing incentives vis-a-vis each government, but may still pitch governments against each other.

We model this setting as a common agency; the firm relates to several principals (governments) but has in addition an outside option. Previous papers on tax competition have also considered an outside option for the firm, but have assumed the option to be the same for all types, and hence typically normalized to zero. What is different here is that it is larger than zero and type dependent. The paper thus analyzes the combined effects of countervailing incentives (see Lewis and Sappington,1989, Maggi and Rodríguez-Clare,1995, Jullien,2000) and common agency (Martimort,1992, Stole,1992, Martimort and Stole,2002, 2009). Multiprincipal problems with countervailing incentives have previously been studied by Mezzetti (1997), but in a different and complementary setting.[5] There is by now a considerable literature analyzing tax and regulatory competition in various settings, see Gresik (2001) for a general survey and Bond and Gresik (1996), Olsen and Osmundsen (2001, 2003), Laffont and Pouyet (2004) and Calzolari (2001, 2004) for analyses in common agency frameworks. The novel feature considered here is the strategic implications of better outside options for firms, and in particular of outside options that are relatively more attractive for very efficient firms.

In several parts of the world countries work to coordinate and harmonize their tax policies. The EU is a prominent example. We analyze the effects of such measures by comparing outcomes for cooperating and competing countries, respectively. We show that with the presence of an outside option, tax competition – relative to coordination – may entail lower investments for inefficient firms and higher investments for efficient ones, and that the firm's profits may be lower or higher when the countries compete than when they cooperate. Whether the firm is better or worse off under policy competition relative to policy coordination, depends among other things on investment substitution possibilities and its ownership structure. The firm is better off under a cooperative relative to a competitive regime when the elasticity of substitution is low, or if owner shares held by residents of the cooperating countries are large. And as already mentioned, we also show that a higher outside option for the firm may actually be beneficial for the firm's host countries when they are engaged in tax competition with each other. This means that better outside options for the firm may reduce the gains from policy coordination and thus reduce host countries' incentives to coordinate their policies.

In common agency models (e.g. Bond and Gresik, 1996)[6] it has been shown that tax competition (rather than cooperation) may make both governments and firms worse off. In other tax competition models, similar results emerge (Zodrow and Mieszkowski, 1986). The key novelty of this paper is the finding that an improvement in the outside option of the multinational firm may increase welfare. In standard tax competition models, a similar result would probably emerge in cases where tax competition leads to overtaxation (Huizinga and Nielsen, 1997).[7] The reason is that the outside option would drive down taxes and thus mitigate the overtaxation problem. In this paper a better outside option may improve welfare for a different reason: governments distort investments to extract rents from firms, and these investment distortions are reduced if the outside option improves.

The intuition for our finding that the two competing countries can be better off if the type-dependent outside option increases (in the sense that it is larger for any type and relatively more so for the most efficient types), is that although a better outside option makes the participation constraint more difficult to be met for national authorities, the larger outside option becomes a more stringent disciplining device for the authorities, and hence limits the negative externalities they mutually exert. When the countries coordinate instead, the countries' welfare is reduced by a larger outside option — as expected.

Our finding implies that, with a development where outside options become more accessible, the perceived costs of tax competition, e.g., in terms of underprovision of public goods, may be overestimated. Another implication is that our findings may offer another argument against protectionism, as the mutual opening up of the economy is likely to enhance the firms' outside options.

## 2. The model

The MNE invests $K_1$ in country 1 and $K_2$ in country 2,[8] yielding profits (before joint costs and taxes) $N_1(K_1, \theta)$ and $N_2(K_2, \theta)$, where $\theta$ is an efficiency parameter. The MNE also has an option of investing in another economic area. To simplify we assume that if the MNE exercises this option, it moves all its operations to this region.[9] We further assume that it is not optimal for the MNE to make all its investments only in country 1 or only in country 2.[10] There are several examples that may motivate this assumption. First, consider a vertically integrated MNE which is located in two EU-countries (e.g., coal mining and natural gas extraction). Extraction levels exceed local demand, and excess output is exported to the neighboring country, due to high transportation costs. Such a firm cannot credibly threaten to concentrate all its activities in only one of the countries. The outside option of the firm may be to extract natural resources and serve customers in another region. The second case is an MNE (e.g., in the food industry), that is presently located in two EU-countries.[11] The MNE is likely to maintain some activity in both countries due to irreversible investments that have been made in production facilities. Even without the presence of fixed factors, the firm may want to be present in both of the countries in order to be close to the customers and thus closely observe changing consumer patterns.[12] A third explanation for localization in several countries is that the MNE is a

[5] In Mezzetti (1997) the agent has private information about his *relative* productivity in the tasks he performs for two principals. With this informational assumption Mezzetti obtains a case of countervailing incentives and contract complements. In our model the agent has private information about his *absolute* efficiency level, the relevant actions are contract substitutes, and the presence of countervailing incentives is due to an outside option. The two models yield different implications; e.g. whereas Mezzetti obtains equilibria with pooling for a range of intermediate types, we obtain fully separating equilibria.

[6] Models where two governments choose trade taxes to regulate a multinational firm with private cost information.

[7] A two-period model under symmetric information where a country may levy source- and residence-based capital income taxes and where part of the firm may be owned by foreigners.

[8] In addition there may be sunk investments in both countries.

[9] Given a passive government in the outside region, this assumption mainly serves to simplify notation. An alternative setup would be to assume that the MNE in equilibrium actually invests in a third country, in which case the outside option would be to reschedule a larger fraction of its activities to this country. This alternative approach would generate the same qualitative results.

[10] We thus assume intrinsic common agency. Calzolari and Scarpa (2008) and Martimort and Stole (2009)analyze both intrinsic and delegated agency, but assume a type-independent outside option. As a first step for the type dependent case, we limit the analysis to intrinsic common agency.

[11] The division of investments may have historical explanations, e.g., that the output is sold to consumers in both countries and that there used to be large transportation costs or other trade barriers.

[12] This is important for products characterized by local variations in taste, and where product development, design and fashion are important. The food and furniture industries are examples.