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Corporate tax regime and international allocation of ownership[☆]

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ABSTRACT

Would the introduction of a corporate tax system with consolidated tax base and formula apportionment lead to socially wasteful mergers and acquisitions across borders? This paper analyzes a two-country model in which firms consider acquisitions of already existing target firms in a high-tax country and a low-tax country. Two systems of corporate taxation are compared, a system with separate accounting and a system with tax base consolidation and formula apportionment. It is shown that, under separate accounting, the number of acquisitions is inefficiently high in both the high-tax and the low-tax country. Under formula apportionment, the number of acquisitions is inefficiently high in one country and inefficiently low in the other country. If both countries engage in tax competition, a novel externality arises that, under symmetry, aggravates the underprovision of public goods under both corporate tax regimes.

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1. Introduction

There is a certain tension between the free mobility of goods, production factors and firms in the European common market and the fact that business taxation is still uncoordinatedly determined at the national level. This tension has several unintended implications. On the one hand, multinationals may exploit national tax differences and shift income to low-tax locations, thereby minimizing their overall tax liability and reducing tax revenues of high-tax countries. On the other hand, the firms struggle with high compliance costs due to different national tax laws, different rules for determining business income etc. Such implications of decentralized policymaking induced the European Commission (2007a, 2007b) to suggest replacing the current system by a new system with a common consolidated corporate tax base and formula apportionment of business profits to the individual affiliates of multinationals. Recently, the European Commission (2010) even included the proposal into its official work program. The hope is that the new system substantially decreases compliance cost and suppresses any opportunity of tax-minimizing profit shifting. In the wake of this reform discussion, there has been an extensive literature on the relative merits of separate accounting (SA) and formula apportionment (FA). This literature generally shows that replacing a system of SA by FA effectively means replacing one set of distortions by another.

Recent interest in mergers and acquisitions (M&A) has renewed the question of which system of corporate income taxation performs better. In fact, although the larger part of cross-border investment takes the form of M&A, almost the entire previous literature on the comparison of SA and FA taxation is based on models where capital is newly invested (greenfield investment). In this paper, we investigate how these two regimes of corporate income taxation affect a firm's decision to acquire or to merge with another firm and the implications of this decision on corporate income tax competition between countries.

At first glance, it seems evident that the FA system distorts M&A decisions whereas the SA system is potentially efficient. Under SA, taxes are location-specific, i.e. before and after the merger the same tax rate applies. Thus, both the willingness to acquire and the willingness to sell are equally reduced by the tax. Under plausible assumptions, this implies that the M&A decision is not distorted under SA. In contrast, the FA taxation system implies that effective tax rates are investor-specific, i.e. the effective tax burden depends on where the investor firm has other production locations and whether they are located in high-tax or low-tax countries. Hence, if positive tax rate differentials exist there are incentives to sell firms from high-tax countries to investors from low-tax countries and vice versa, even though there is no real economic gain from such a transaction.[1] The ownership structure of multinational firms is therefore expected to

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[1] This is true as long as (after-merger) profits are not perfectly equal across firms and locations.

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be distorted by tax rate differentials under FA taxation, but not under SA taxation.[2]

We show that this first glance view may be misleading. Precisely, we demonstrate that the M&A decision is also distorted under SA and that this distortion may even be more severe than under FA. We consider a two-country model in which firms consider acquiring other firms. Acquisitions have real economic effects taking the form of a change in cash-flow (synergy). We show that, in the absence of profit shifting opportunities, the allocation of ownership is efficient under SA. However, if profit shifting within the multinational is possible, the number of acquisitions is inefficiently high in both countries, i.e. the marginal synergy is negative. The reason is that the negative synergy is balanced with the (improved) profit shifting opportunities. Under FA, in contrast, the number of acquisitions is inefficiently high in the low-tax country and inefficiently low in the high-tax country if the acquirer is more profitable than the target firm. The reason is that acquiring firms in the high-tax country increases the effective tax burden and acquiring firms in the low-tax country does the opposite. As a consequence, the synergy effect is balanced with the tax consequences of an acquisition and, thus, the marginal synergy is negative in the low-tax country and positive in the high-tax country. By the reversed arguments we obtain underinvestment in the low-tax country and overinvestment in the high-tax country, if acquirers have less profits than targets.

In a second step, we endogenize corporate tax rates by assuming that the two countries engage in tax competition. In the equilibrium of the tax competition game, the marginal synergy levels turn out to be efficient if tax rates are equal, but the countries' tax rate choices are distorted by fiscal externalities. Next to the well-known tax base externality (e.g., Zodrow and Mieszkowski, 1986; Wilson, 1986) and the foreign firm ownership externality (e.g., Huizinga and Nielsen, 1997), we show that there are externalities which we label M&A externalities. These M&A externalities are due to tax policy effects on the acquisition price of cross-border acquisitions. We show that under both tax regimes, SA and FA, the sum of M&A externalities is positive and aggravates the tendency towards inefficient undertaxation. With symmetric countries, this tendency is stronger under SA than under FA.

In the presence of M&A, both corporate tax regimes distort the firms' acquisition decision and the countries' choice of corporate tax rates. In the end, it is an empirical question under which tax regime the distortions are more severe. In our model, SA is the more distortive the easier profit shifting is. The empirical literature provides a lot of evidence for profit shifting by multinationals,[3] thereby suggesting that tax planning via shifting of paper profits under SA is usually easier for multinational firms than a reallocation of physical capital, the latter of which is a source of distortions under FA. Such a view is further supported by evidence reported in Mintz and Smart (2004) who show that under the corporate income tax of Canadian provinces SA generates larger distortions than FA.

Our analysis is related to two strands of economic literature. The first strand is the steadily growing literature on the comparison of SA and FA, see e.g. McLure (1980), Gordon and Wilson (1986), Mintz (1999), Eggert and Schjelderup (2003), Devereux (2004), Nielsen et al. (2003, 2010), Sørensen (2004), Kind et al. (2005), Fuest et al. (2007), Pethig and Wagener (2007), Riedel and Runkel (2007), Devereux and Loretz (2008), Eichner and Runkel (2008, 2009, 2011) and Becker and Fuest (2010a). These studies establish some important results which relate to ours. For example, they also derive tax base and foreign firm ownership externalities. However, none of the previous articles on the comparison of SA and FA considers M&A and, thus, our M&A externalities are new to the literature.

The second line of literature related to our analysis investigates the tax effects on M&A activities of multinational enterprises, see e.g. Swenson (1994), Auerbach and Slemrod (1997), Andrade et al. (2001), Desai and Hines (2004), Becker and Fuest (2010b, 2011b), Huizinga and Voget (2009) and Haufler and Schulte (2011). Becker and Fuest (2011a) consider the efficiency properties of source based and residence based taxation in a model where investment takes the form of M&A. It is shown that source based taxation is efficient from a global point of view if residence based taxes are ruled out, as is also reflected in the benchmark result of our analysis. However, they do not consider profit shifting, nor do they investigate FA. Hence, they do not derive the results which we obtain.

The remainder of the paper is organized as follows. Section 2 presents the model and analyzes the acquisition behavior of firms. In Section 3 we consider the welfare effects of decentralized tax setting and tax competition equilibria depending on the choice between SA and FA. Section 4 concludes.

2. The model

Consider a world with two identical countries labeled 1 and 2. In each country there is a large number of immobile firms owned by the residents of this country. These firms can be divided into two classes, potential acquirers and potential targets. The mass of acquirer and target firms is normalized to one, respectively, in both countries. Each acquirer firm earns a before-tax profit $\pi > 0$ and each target firm $\hat{\pi} > 0$, the hat denoting the target firm. Profits in country $i \in \{1,2\}$ are taxed by a source based tax at rate $t_i > 0$.

Each acquirer firm is matched with a target firm from abroad (national mergers are discussed at the end of this section). Then, each couple consisting of a target from country i and an acquirer from country $j \neq i$ draws a synergy Δ_i from a uniform distribution over the interval $[\underline{\Delta}, \overline{\Delta}]$ with $\underline{\Delta} < 0 < \overline{\Delta}$. The parameter Δ_i indicates the change in cash flow of the target firm in country i, if the acquisition is realized.[4] Given the synergy Δ_i, both the acquirer and the target firm owner decide whether to merge or not.[5] Note that, in our model, mergers and acquisitions are economically equivalent. Throughout the paper, we will use the terminology of mergers and acquisitions interchangeably, although some technical terms differ (for instance, instead of an 'acquisition price' a merger would have to imply a 'profit sharing rule' etc.). If the acquirer firm acquires the target firm, the two firms become one in terms of corporate policy, i.e. we abstract from all governance or corporate control problems between headquarters and subsidiary whatsoever.

With synergy Δ_i, the acquisition price paid by the acquirer to the owner of the target firm is denoted by $P(\Delta_i)$. This acquisition price crucially depends on the market conditions and the nature of the synergy.[6] In order to capture a wide range of different cases in a tractable way we denote the surplus of acquisition Δ_i in country i by $Z(\Delta_i)$ and assume that both parties, seller firm and acquirer firm, get a fraction

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[2] In a recent contribution, Hines (2010) seems to follow this line of argument concluding that *"the adoption of formula apportionment creates incentives for new forms of tax avoidance through mergers and divestitures."* (p. 117–118).

[3] For evidence on profit shifting and an overview of the recent contributions in this field, see Devereux (2006) and Huizinga and Laeven (2008).

[4] A positive value of the synergy may be interpreted as the result of cost savings due to superior technology or an increase in output value due to access to a brand name or better distribution systems. The synergy may be negative if, e.g., the target firm is forced to adopt standards of the acquirer that do not reflect the local conditions properly.

[5] This choice is similar to the one in Bucovetsky and Haufler (2008) who endogenize the choice of organization form, i.e. of becoming a multinational or staying a national firm. These authors do not focus on different tax regimes and do not derive the results which we get, though.

[6] Assume, for instance, that the acquirer firm just needs a distribution network in the market where the target firm is located. Each target firm could provide this service. In this case, the acquirer would keep the whole surplus. A contrary example is that the synergy is generated by market specific knowledge of the target firm which is worth more if the investor can use it. Then, investors may bid for the target firm and the whole surplus is received by the seller.

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