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Debt shifting and ownership structure

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ABSTRACT

Previous theoretical studies on the debt shifting behavior of multinationals have assumed affiliates of multinationals to be wholly owned. We develop a model that allows a multinational firm to determine both the leverage and ownership structure in affiliates endogenously. A main finding is that affiliates with minority owners have less debt than wholly owned affiliates and therefore a less tax-efficient financing structure. This is due to an externality that arises endogenously in our model, where costs and benefits of debt shifting are shared asymmetrically between minority and majority owners. Our findings provide a theory framework for recent empirical findings.

1. Introduction

It is well known that multinationals can use internal debt to save tax payments by utilizing differences in national tax rates.[1] The mechanism at play under debt shifting is that interest income is earned in low-tax countries and deducted in high-tax countries so that the tax savings arising from the deductions in high-tax countries exceed the corresponding tax payments in low-tax countries. Previous literature has studied debt shifting when affiliates of multinationals are wholly owned.[2] Multinationals, however, often have the option to own 100%, the majority, or to be in a minority position in (newly created) foreign entities. Empirical evidence shows that all three combinations of ownership structures are selected,[3] and there is therefore a need for a theory that can explain how different ownership structures affect tax-efficient financing structures in multinationals.

This paper presents a theory model that determines jointly the ownership structure and financing structure in affiliates of multinational firms. We show that affiliates of multinationals with minority owners have less internal debt and a different financing structure than do affiliates of multinationals that are wholly owned. The intuition is that (local) minority owners benefit from a classical free-riding externality related to the use of internal debt. Minority owners benefit in full from tax planning strategies involving internal debt, but they do not fully share the related financing costs. This is so because the tax savings in borrowing affiliates benefit minority owners in proportion to their equity share. However, the corresponding lending transactions give rise to interest revenues and tax payments in the multinational's financial center where minority owners who benefit from the tax deductions do not hold equity. Minority owners do not hold equity in

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[1] Empirical studies on European and US data have documented that multinationals structure their leverage so as to minimize tax payments globally. See Barion et al. (2010), Egger et al. (2010), Büttner et al. (2009), Mintz and Weichenrieder (2005), and Desai et al. (2004a).

[2] See e.g., Mintz (2004) and Mintz and Smart (2004). A survey of the literature is provided by Mintz and Weichenrieder (2010).

[3] For evidence on ownership structure in the US, see Desai et al. (2004b), and for German multinationals, see Mintz and Weichenrieder (2005).

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lending affiliates because it is not profitable for them to do so. It is this asymmetric sharing of costs and benefits between minority and majority owners, which arises endogenously in our model, that leads to the externality. This result, which has not been shown before, provides a theoretical explanation for recent empirical findings where affiliates with minority owners have been shown to have a less tax sensitive debt-to-asset ratio than wholly owned affiliates (see Section 2).

In a second step of the analysis, we use the result that affiliates with minority owners use less internal debt to show that the effective rental rate of capital is higher in such affiliates. All else equal, this makes it less attractive to share equity. We also show that an optimal financing structure (independently of ownership shares) implies that affiliates of multinationals have higher internal and overall debt ratios as well as lower effective rental rates of physical capital than comparable domestic firms, and that they have a more capital-intensive production structure.

Our results emerge from a model where a headquarters of a multinational firm decides both on ownership and financing structure of its affiliates. The headquarters, in its decision making about whether or not to share equity, balance costs and gains from sharing equity.[4] The benefits of forming a joint venture are related to fundamentals such as cost reductions (or increased productivity), whilst the costs pertain to the coordination of worldwide debt shifting activities.

The rest of the paper is organized as follows. Section 2 surveys some of the related literature. Section 3 describes the basic framework and discusses the basis for cooperation and the use of debt. Section 4 derives the optimal financing and investment choices for the multinational firm, while Section 5 derives optimal ownership shares. Section 6 provides a discussion of our findings, and Section 7 offers some concluding remarks.

2. Related literature

Our main finding that affiliates of multinationals with minority owners have less internal debt and are less tax sensitive has been documented in several studies. Büttner and Wamser (2007) use the German MiDi (Bundesbank) data base and find that minority ownership exerts a negative (level) effect on the use of internal debt. In particular, they find that the leverage ratio of internal debt is 5 (respectively 2) percentage points higher in wholly owned (respectively partially-owned) subsidiaries compared to non-majority owned ones (Büttner and Wamser, 2007, p. 22). With respect to the tax sensitivity of internal debt, Hebous and Weichenrieder (2010) find that a 10% increase in the corporate tax rate in emerging markets increases the ratio of debt-to-assets of wholly owned affiliates of multinationals by 27 percentage points. In contrast, they cannot find any evidence of debt shifting for partially owned affiliates. Such marked differences in behavior between partially and wholly owned affiliates are also obtained by Weichenrieder (2009), Büttner and Wamser (2007), Mintz and Weichenrieder (2005), and Desai et al. (2004b) studying affiliates of German and US multinationals.

Desai et al. (2004b) analyze the determinants of partial ownership of the foreign affiliates of US multinationals and in particular the marked decline in the use of joint ventures over a 20-year period. Their analysis is empirical and suggests that there is an increased appetite for control by multinational parents. They attribute this to three different types of coordination costs. First, costly conflicts may arise between minority owners and multinational enterprises, since multinationals have an incentive to shift profits away from affiliates with minority owners. Second, multinationals run the risk of having their technology appropriated by local partners. Finally, multinationals have a desire to structure production worldwide and this desire holds the potential for conflict with minority owners. Our analysis is related to Desai et al. (2004b) in that we show there is a fourth cost element at play namely a fiscal externality related to minority ownership and debt shifting that makes it more attractive to wholly own affiliates.[5]

Our analysis is also linked to the transfer pricing literature and the corporate governance literature, where a major concern has been that majority owners would exploit minority owners. For example, in the transfer pricing literature it has been shown that minority ownership gives the headquarters of a multinational firm incentives to shift income away from minority owners by mispricing intra-firm transactions (Kant, 1988, 1990; Bertrand et al., 2002). The reason is that minority ownership works like a profit tax in the sense that the multinational keeps only a fraction of the affiliate's income. The transfer pricing literature, therefore, finds that minority ownership aggravates the incentives for trade mispricing and leads to more tax evasion.[6] In a similar fashion, one would expect that minority ownership should increase tax planning by debt. Our result, however, is the opposite. Minority ownership leads to less tax planning, since the multinational firm dampens the externality from joint ownership by shifting less debt. The economic reasoning, however, is the same as in the transfer pricing literature. In both cases the multinational firm would like to avoid sharing profit income with minority owners.

Debt shifting in wholly owned affiliates of multinationals is investigated by Mintz and Smart (2004). They study corporate income taxation when firms operating in multiple jurisdictions can shift income by lending among affiliates, and show that debt shifting affects real investment, government income, and tax base elasticities. They test their model on

[4] Our modeling approach relates to the literature on costs and benefits of co-ownership. See Williamson (1975), Holmstrom (1982), Svejnar and Smith (1984), Grossman and Hart (1986), Gomes-Casseres (1989), and Ramachandran (1993). However, we neglect costs and benefits of asymmetric information related to time-consistent taxation as in Konrad and Lommerud (2001).

[5] As pointed out by one of our referees, a possible fifth explanation for the appetite of control may be that parent firms (in the case of co-owners) do not want to inject internal debt that acts like equity, but grants no voting rights.

[6] Manipulation of transfer prices for the purpose of shifting profit income is according to most OECD countries' legislation an illegal activity (tax evasion).