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Should profit shifting be prohibited? The importance of timing

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Abstract

Measures against profit shifting, such as transfer pricing or thin capitalization rules, impose compliance costs even on firms which do not shift their profits. It is therefore not at all clear whether and under which circumstances such measures are desirable. In this note we investigate the influence of the timing of decisions on this question. In a very general setting we show that prohibiting profit shifting is less desirable if tax havens act as Stackelberg followers than if they take their policy decisions simultaneously with normal countries.

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1. Introduction

Due to its adverse effect on tax bases profit shifting by multinational firms has become a serious problem, see e.g. Mintz and Weichenrieder (2010), OECD (2013a, 2013b). Governments have reacted by introducing various anti-profit-shifting measures, such as transfer pricing and thin-capitalization rules. There is evidence that such rules do indeed reduce profit shifting, see e.g. Overesch and Wamser (2010), Buettner et al. (2012), Wamser (2014), Beer and Loeprick (2015).

However, as recently pointed out by Langenmayr (2015), besides reducing profit shifting such rules impose compliance costs on firms. For example, firms must prepare detailed documentations to justify their transfer prices, and they may abstain from debt financing when this would otherwise be optimal. Moreover, compliance to complicated rules may require the services of expensive consultants.

Unfortunately, due to non-discrimination rules these costs do not only affect profit shifting firms, but all firms. The question therefore arises whether and under which circumstances anti-profit-shifting measures are desirable. Langenmayr (2015) studied this question in a formal model with heterogeneous firm productivity where the compliance costs can force some firms to exit the market.

An important aspect that has not yet been discussed in this context is the timing of decisions. While Langenmayr (2015) assumed that all policy decisions are taken simultaneously, in our opinion it is more realistic to assume that tax havens act as Stackelberg followers. The reason is simple: while the passing of tax (and other) laws in large democratic countries takes a lot of time, tax havens are typically much more flexible.[1] The purpose of the present paper is to investigate the influence of this aspect in a very general context, independently of specific assumptions concerning industry structure, preferences, etc.

2. Nash vs Stackelberg in the context of profit shifting

We consider a normal country and a tax haven engaged in corporate tax competition. We assume that the potential for real economic activity in the tax haven is negligible, but that firms operating in the normal country can shift (parts of) their profits to the tax haven. The normal country has the choice between tolerating profit shifting and prohibiting it (e.g. by strict transfer pricing and thin-capitalization rules). The normal country therefore has two policy instruments at its disposal: its tax rate and the choice whether or not to prohibit profit shifting. The tax haven, in contrast, has only one policy instrument at its disposal, namely its tax rate.

We consider two timing scenarios:

1. Nash: All policy decisions are taken simultaneously (as in Langenmayr, 2015),
2. Stackelberg: First the normal country chooses its policy instruments, and after observing these the tax haven chooses its tax rate.

[1]See e.g. Karnitschnig and Van Daalen (2014) for the case of Luxembourg. – Let us note that in most papers on tax competition policy decisions are assumed to be taken simultaneously. Notable exceptions are Gordon (1992) and Wang (1999), who studied Stackelberg leadership in the context of double-taxation conventions and commodity taxation, respectively, as well as Kempf and Rota-Graziosi (2010), who studied endogenous timing in the spirit of Hamilton and Slutsky (1990). The Stackelberg case was also discussed in one of the working paper versions of Krautheim and Schmidt-Eisenlohr (2011), available at `http://cadmus.eui.eu/handle/1814/10927`. For a survey of the tax competition literature we refer to Keen and Konrad (2013).

Assuming that a Nash equilibrium exist, we obtain:

Theorem 1. *Suppose that in all Nash equilibria profit shifting is tolerated. Then the same is true in all Stackelberg equilibria.*

Hence an equilibrium in which profit shifting is tolerated is more likely to occur under Stackelberg than under Nash behavior. Thus the skepticism expressed by Langenmayr (2015) concerning the desirability of anti-profit-shifting measures becomes even more pronounced when one makes the more realistic assumption that tax havens act as Stackelberg followers. Intuitively, the result can be explained as follows:

- On the one hand, if profit shifting is prohibited the tax haven's tax rate plays no role, so that the normal country can choose its tax rate as a monopolist, which in particular implies that its payoff does not depend on the timing of decisions.
- On the other hand, if the normal country does not prohibit profit shifting, its payoff will typically be larger under Stackelberg than under Nash behavior.

Hence the normal country's incentive to prohibit profit shifting is weaker under Stackelberg than under Nash behavior.

While the formal proof of the theorem follows this intuitive argument, it has to take into account that in the Nash case the normal country's choice whether or not to prohibit profit shifting occurs simultaneously with the tax haven's tax rate decision.

Proof of Theorem 1. Recall that by assumption there is no Nash equilibrium in which profit shifting is prohibited. Let now N be a Nash and S a Stackelberg equilibrium, and let π_N and π_S be the payoffs which the normal country obtains in these equilibria. Since whenever there exists a Nash equilibrium the Stackelberg leader can obtain at least the same payoff we have

$$\pi_S \geq \pi_N.$$

Let now π_0 be the supremum of the payoffs that the normal country can obtain if it prohibits profit shifting. We have

$$\pi_N > \pi_0$$

because otherwise there would be a Nash equilibrium in which the normal country prohibits profit shifting. Combining these two inequalities we obtain

$$\pi_S > \pi_0.$$

It follows that there is no Stackelberg equilibrium in which the normal country prohibits profit shifting. □

3. Conclusion

In a very general context we have shown that the skepticism towards anti-profit-shifting measures becomes more pronounced when tax havens act as Stackelberg followers instead of acting simultaneously with non-haven countries. Policy makers should take this aspect into account when designing anti-profit-shifting measures.

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