Taxation and the optimal constraint on corporate debt finance: why a comprehensive business income tax is suboptimal

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5% of corporate tax revenue. The welfare gain would arise mainly from a fall in the social risks associated with corporate investment, but also from the cut in the corporate tax rate made possible by a broader corporate tax base.

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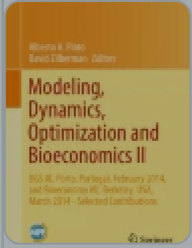

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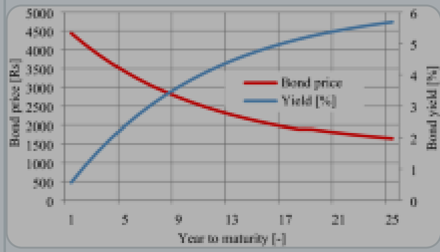

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4. For example, according to table 1 in Chen et al. (2007), the difference between the average yield on US corporate bonds with an AA-rating and medium maturity (7–15 years) and the average yield on comparable maturity treasury bonds from 1995 to 2003 was 146.27 basis points. For AAA-rated corporate bonds, the yield spread was 82.44 basis points, and for A-rated bonds, it was 177.68 basis points.

5. This value of η is higher than the user cost elasticity found in most of the empirical studies surveyed by Hassett and Hubbard (2002), but as we shall see in the next section, the quantitative results from our model are not very sensitive to the value of η.

6. To derive the optimal constraint on debt finance from formula (21) and the

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$$\begin{aligned} p\left(\beta \right) \equiv \left({1-\beta } \right) p_\mathrm{e} \left(\beta \right) +\beta \left({1-\tau } \right) p_\mathrm{d} \left(\beta \right) . \end{aligned}$$

(32)

A second-order Taylor approximation of this expression around $\beta =\bar{\beta }$ yields

$$\begin{aligned} p\left(\beta \right) \approx p\left(\bar{{\beta }} \right) +\frac{\hbox {d}p\left(\bar{{\beta }} \right) }{\hbox {d}\beta }\left({\beta -\bar{\beta }} \right) +\frac{1}{2}\frac{d^{2}p\left(\bar{{\beta }} \right) }{\left({\hbox {d}\beta } \right) ^{2}}\left({\beta -\bar{\beta }} \right) ^{2}, \end{aligned}$$

(35)

The social risk premium is

$$\begin{aligned} p_\mathrm{s} \left(\beta \right) \equiv \left({1-\beta } \right) p_\mathrm{e} \left(\beta \right) +\beta p_\mathrm{d} \left(\beta \right) . \end{aligned}$$

(36)

In the absence of tax ($\tau =0$), private and social risk premiums would coincide, and firms would minimize their cost of finance by minimizing the expression in (36), implying the first-order condition

(39)

and inserting (38) and (39) into (33), we obtain

$$\begin{aligned} p\left(\beta \right) \approx p\left(\bar{{\beta }} \right) -\tau a\left({\beta -\bar{\beta }} \right) +\frac{b}{2}\left({\beta -\bar{\beta }} \right) ^{2}, \end{aligned}$$

(40)

as stated in (6) in Sect. 2. Further, by using (37), we can write the second-order Taylor approximation to the social risk premium (36) around $\beta =\bar{\beta }$ as

{\hbox {d}\beta } \right) ^{2}}=b+\tau \left[{2p_\mathrm{d}^{\prime } \left(\bar{{\beta }} \right) +\bar{\beta }} p_\mathrm{d}^{{{\prime }{\prime }}} \left(\bar{{\beta }} \right) \right] \end{aligned}$$

(43)

In Sect. 5.1, we introduced the second-order approximation

$$\begin{aligned} p_\mathrm{d} \left(\beta \right) \approx \frac{k}{2}\beta ^{2}. \end{aligned}$$

(44)

Using (43) and (44), we may therefore write (41) as

From (4), (6), (8) and (44), one finds that

$$\begin{aligned} c= & {} \left({\frac{1}{1-\tau }} \right) \left[{r-\tau \beta \left({r+\pi } \right) +{\mathop {\overbrace{{\left({1-\bar{\beta }} \right) p_\mathrm{e} \left(\bar{{\beta }} \right) +\bar{\beta }}{(1-\tau) } p_\mathrm{d} \left(\bar{{\beta }} \right) } }\limits ^{\equiv p\left(\bar{{\beta }} \right) }}}\right. \nonumber \\&\left. {-\tau a\left({\beta -\bar{\beta }} \right) +\frac{b}{2}\left({\beta -\bar{\beta }} \right) ^{2}} \right] , \end{aligned}$$

(47)

$$\begin{aligned} \frac{\partial c}{\partial \beta }= & {} \frac{b\left({\beta -\bar{\beta }} \right) -\tau \left({r+\pi +a} \right) }{1-\tau }, \end{aligned}$$

(48)

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Tax bias against equity finance
Optimal constraint on debt finance

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