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

| Published: 17 November 2016

| Volume 24, pages 731–753, (2017) [Cite this article](#)

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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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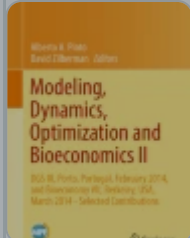
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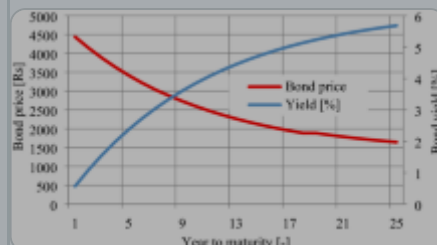
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4. For example, according to table 1 in Chen et al. ([2007](#)), the difference between the average yield on US corporate bonds with an AA-rating and medium maturity (7–15 years) and the average yield on comparable maturity treasury bonds from 1995 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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Acknowledgements

I wish to thank Guttorm Schjelderup, Bev Dahlby and an anonymous referee for helpful comments on an earlier version of this paper. The paper is a further development of work originally carried out for the Norwegian government tax

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

(32)

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

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

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(35)

The social risk premium is

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

(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

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(39)

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

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

(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 $(\beta = \|\beta\|)$ as

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$$\begin{aligned} \left(\left(\beta \right)^2 \right) &= b + \tau \left[\left(p_{\mathrm{d}}^{\prime} \right) \left(\beta \right) + \beta p_{\mathrm{d}}^{\prime \prime} \right] \left(\beta \right) \end{aligned} \quad (43)$$

In Sect. [5.1](#), we introduced the second-order approximation

$$\begin{aligned} p_{\mathrm{d}} \left(\beta \right) &\approx \frac{k}{2} \beta^2. \end{aligned} \quad (44)$$

Using [\(43\)](#) and [\(44\)](#), we may therefore write [\(41\)](#) as

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

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

(47)

$$\begin{aligned} \frac{\partial c}{\partial \beta} = & \frac{b \left(\beta - \bar{\beta} \right) - \tau \left(r + \pi + a \right) }{1 - \tau}, \end{aligned} \quad (48)$$

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