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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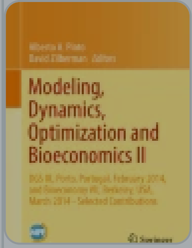

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bonds from 1995 to 2003 was 146.27 basis points. For AAA-rated corporate bonds, the yield spread was 82.44 basis points, and for A-rated bonds, it was 177.68 basis points.

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 resulting welfare gain from formula (30), I use an iterative solution algorithm implemented in an Excel spreadsheet available on request.

Google Scholar

Brealey, R. A., Myers, S. C., & Allen, F. (2009). *Principles of Corporate finance. Concise edition*. New York: McGraw-Hill.

Google Scholar

Chen, L., Lesmond, D. A., & Wei, J. (2007). Corporate yield spreads and bond liquidity. *Journal of Finance, LXII*, 119–149.

Article Google Scholar

De Mooij, R. A. (2011). *The tax elasticity of corporate debt: A synthesis of size and variations*. International Monetary Fund, Working Paper no. 11/95.

Google Scholar

ECB. (2012). Corporate indebtedness in the Euro area. *ECB Monthly Bulletin*, February 2012, pp. 87–103.

Egger, P., Eggert, W., Keuschnigg, C., & Winner, H. (2010). Corporate taxation, debt financing and foreign plant ownership. *European Economic Review*, *54*, 96–107.

Article Google Scholar

Gordon, R. H. (2010). Taxation and corporate use of debt: Implications for tax policy. *National Tax Journal*, *63*, 151–174.

Article Google Scholar

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance and takeovers. *American Economic Review*, *76*, 323–329.

Google Scholar

Jensen, M. C., & Meckling, W. H. (1976). The theory of the firm: Managerial behavior, agency costs and capital structure. *Journal of Financial Economics*, *3*, 305–360.

Article Google Scholar

Keen, M., & De Mooij, R. (2012). *Debt, taxes and banks*. International Monetary Fund (IMF), Working Paper no. 12/48.

Norwegian Tax Reform Committee. (2014). Kapitalbeskatning i en internasjonal ø konomi (Capital taxation in an international economy). Norges offentlige utredninger 2014: 13. Oslo 2014.

Pomerleau, K. (2014). Corporate income tax rates around the world. Tax Foundation, Fiscal Fact, August 2014, No. 436.

Schjelderup, G. (2016). The tax sensitivity of debt in multinationals: A review. *International Journal of the Economics of Business*, *23*, 109–121.

Article Google Scholar

Swedish Corporate Tax Reform Committee. (2014). Neutral bolagsskatt – för ökad

Zangari, E. (2014). *Addressing the debt bias: A comparison between the Belgian and the Italian ACE systems*. Taxation Papers, Working Paper N. 44-2014, European Commission.

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(32)

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

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

(33)

where

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

(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

$$\begin{aligned}&\hbox {d}p_\mathrm{s} \left({\bar{\beta }} \right) /d\bar{\beta } \equiv 0 \quad \Rightarrow \nonumber \\&p_\mathrm{d} \left({\bar{\beta }} \right) - p_\mathrm{e} \left({\bar{\beta }} \right) + \left({1 - \bar{\beta }} \right) p_\mathrm{e}^{{\prime }} \left({\bar{\beta }} \right) + \bar{\beta }p_\mathrm{d}^{{\prime }} \left({\bar{\beta }} \right) = 0.\end{aligned}$$

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

(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

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

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

$$\begin{aligned} p_\mathrm{s} \left(\beta \right) \approx p_\mathrm{s} \left(\bar{{\beta }} \right) +\frac{b_s }{2}\left({\beta -\bar{\beta }} \right) ^{2},\quad b_s \equiv b+3\tau k\bar{\beta } \end{aligned}$$

(45)

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)

$$\begin{aligned} \frac{\partial c}{\partial \tau }= & {} \frac{c-\beta \left({r+\pi +a} \right) +a{\bar{\beta } - 0.5k\bar{\beta ^{3}}}}{1-\tau }. \end{aligned}$$

(49)

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