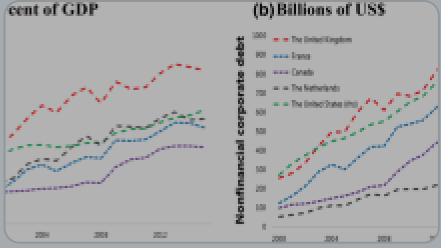
Taxation and the optimal constraint on corporate debt finance: why a comprehensive business income tax is suboptimal

Published: 17 November 2016
Volume 24, pages 731–753, (2017) Cite this article

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.

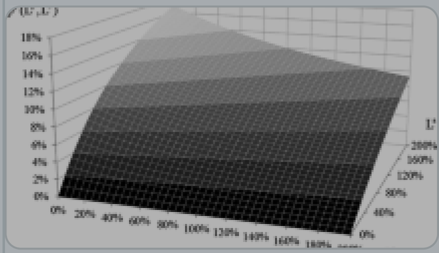


[Pouring oil on fire: interest deductibility and corporate debt]

Article | 13 May 2020

[Corporate debt policy and tax uncertainty]

Article | 13 September 2023



[Corporate taxes, capital structure, and valuation: Combining Modigliani/Miller and Miles/Ezzell]

Article | 10 March 2016

Notes

1. The likely revenue loss has often been overstated in the debate on the ACE.

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.

7. Recall from (8) that the relationship between the cost of finance (q) and the cost of capital (c) is $c=q/\left({1-\tau } \right)$.

8. Another way of explaining the firm's preference for debt over new equity is

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.

De Mooij, R. A. (2012). Tax biases to debt finance: Assessing the problem, finding solutions. *Fiscal Studies*, *33*, 489–512.

Article Google Scholar

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

Griffith, R., Hines, J. R., & Sø rensen, P. B. (2010). *International capital taxation. Chapter 10 in the mirrlees review: Dimensions of tax design*. Oxford: Institute for Fiscal Studies, Oxford University Press.

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.

Mirrlees, J., Adam, S., Besley, T., Blundell, R., Bond, S., Chote, R., et al. (2011). *Tax by design: The mirrlees review*. Oxford: Oxford University Press for the Institute for Fiscal Studies.

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 effektivitet och stabilitet (Neutral corporation tax - for increased efficiency and stability). SOU 2014:40, Stockholm 2014.

Sørensen, P. B. (2014). *Taxation and the optimal constraint on corporate debt*

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 reform committee, presented in Sørensen (2014). I thank members of the committee and its secretariat for fruitful discussions of many of the issues involved. Any remaining shortcomings are my own responsibility.

Author information

Authors and Affiliations

University of Copenhagen, Copenhagen, Denmark

Peter Birch Sørensen

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

(33)

where

$$\begin{aligned} \frac{{\hbox {d}p\left({\bar{\beta }} \right) }}{{\hbox {d}\beta }}= & {} \left({1 - \tau } \right) p_\mathrm{d} \left({\bar{\beta }} \right) - p_\mathrm{e} \left({\bar{\beta }} \right) + \left({1 - \bar{\beta }} \right) p_\mathrm{e}^{{\prime }} \left({\bar{\beta }} \right) + \bar{\beta }\left({1 - \tau } \right) p_\mathrm{d}^{{\prime }} \left({\bar{\beta }} \right) , \end{aligned}$$

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

$$\begin{aligned}&\hbox {d}p_\mathrm{s} \left({\bar{\beta }} \right) /d\bar{\beta } \equiv 0 \quad \Rightarrow \nonumber \\&p_\mathrm{d} \left({\bar{\beta }} \right) - p_\mathrm{e} \left({\bar{\beta }} \right) + \left({1 - \bar{\beta }} \right) p_\mathrm{e}^{{\prime }} \left({\bar{\beta }} \right) + \bar{\beta }p_\mathrm{d}^{{\prime }} \left({\bar{\beta }} \right) = 0. \end{aligned} \tag{37}$$

Inserting (37) into (34), we get

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

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

(41)

where

\$\$\begin{aligned} \frac{d^{2}p_\mathrm{s} \left(\bar{{\beta }} \right) }{\left({\hbox {d}\beta } \right) ^{2}}=2\left[{p_\mathrm{d}^{\prime } \left(

(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)

Equation (45) is seen to be identical to Eq. (27) in the main text. Note from (32), (36) and (44) that

$$\begin{aligned} p_\mathrm{s} \left(\bar{{\beta }} \right)= & {} p\left(\bar{{\beta }} \right) +\tau \bar{\beta }p_\mathrm{d}\left(\bar{{\beta }} \right) \end{aligned}$$

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

(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)

Rights and permissions