

Original Paper

Tax Code Change Impacts on the Practice of Corporate Finance

Rakesh Duggal^{1*} & Michael C. Budden²

¹ Department of Accounting and Finance, Southeastern Louisiana University, Hammond, LA, USA

² Department of Marketing and Supply Chain Management, Southeastern Louisiana University, Hammond, LA, USA

* Rakesh Duggal, Department of Accounting and Finance, Southeastern Louisiana University, SLU Box 10844, Hammond, LA, 70402, USA

Received: February 25, 2020

Accepted: March 23, 2020

Online Published: June 18, 2020

doi:10.22158/rem.v5n3p21

URL: <http://dx.doi.org/10.22158/rem.v5n3p21>

Abstract

Public Law No. 115-97 (initially introduced in the house as the Tax Cuts and Jobs Act or TCJA) passed by Congress in 2017 has significantly revised the Internal Revenue Code of 1986. Since taxes play an important role in financial decision-making, the TCJA will impact decisions in many areas of corporate finance, including capital structure and capital budgeting. By using S&P 500 data, this paper attempts to broadly estimate these impacts. The lower corporate tax rate under the new law reduces the corporate incentive to borrow to benefit from the interest expense tax shield. The lower tax rate also reduces the depreciation tax shield and marginally raises the average cost of capital. However, an S&P 500 firm on average will receive an estimated \$239 million per year in tax-related benefits, based on 2017 financial data. This annual benefit will decrease after five years as the 100% expensing of investments is gradually withdrawn after 2023.

Keywords

TCJA, tax cuts, capital budgeting, depreciation, cost of capital

1. Introduction

A country's corporate tax structure affects the financial policies of the country's businesses. Firms may choose to increase financial leverage if the tax code allows them to deduct interest expense from taxable income, resulting in higher after-tax cash flows. A lower tax rate also increases project free cash flows and project net present values leading to higher investments. A tax code's treatment of capital expenditures can also impact the level of corporate investments. For example, corporations may be incentivized to increase investments by allowing them to immediately expense an investment instead of depreciating it over its estimated life.

The TCJA includes the following three important changes for U.S. businesses:

- 1) The highest corporate tax rate is lowered from 35% to 21%.
- 2) Restrictions have been placed to cap the interest expense deduction for tax purposes. Through 2021, firms may deduct up to 30% of a measure approximating their earnings before interest, taxes, depreciation and amortization (EBITDA). After 2021, firms will only be allowed to deduct 30% of earnings before interest and taxes (EBIT). Disallowed interest deductions, however, can be carried forward indefinitely.
- 3) Corporations can expense 100% of newly acquired equipment in the year of purchase before January 2023.

Using the S&P 500 data, this paper attempts to quantify the potential impacts of the above changes on capital structure, cost of capital, and capital budgeting for large U.S. firms.

2. Literature Review

Graham (2008) discusses the role of taxes in corporate decision making (Graham, 2008). The role of taxes in the choice of capital structure has been extensively explored since Miller and Modigliani's seminal work (1958). Faccio and Jin Xu (2015) find both personal and corporate taxes to be significant determinants of capital structure. Corporate executives indicate that they consider numerous factors, including corporate taxes, when determining their choice of capital structure (Graham et al., 2002). Standard finance theory covers the role of taxes in the cost of capital and project cash flow calculations (Brealey et al., 2018, Ross et al., 2019).

3. TCJA's Impacts on Capital Structure, Cost of Capital, and Capital Budgeting

Having a tax-deductible interest expense results in lower business taxes, more residual cash flows for the owners, and a higher firm value, *ceteris paribus*. Alternatively, interest expense can be viewed as a cost and the firm's overall cost of capital or discount rate is lowered if the interest expense becomes tax-deductible.

The combined effects of the new lower corporate tax rate of 21% and the cap on interest expense deductions have the potential to diminish the attractiveness of debt. Further, the lower tax rate will also raise the corporate cost of capital due to the lower interest expense tax shield.

The TCJA provides for 100% expensing of newly acquired equipment before January 2023. The Act allows for most tangible property purchased after September 27, 2017 and before January 1, 2023 to be fully expensed during the first tax year of use. Tangible property acquired during tax years beginning in 2023 will be 80% deductible in that tax year, scaling down 20% each year, with no special expensing provided for 2027 and later years.

In general, the lower corporate tax rate of 21% reduces the value of the depreciation-related tax shield. The immediate expensing of an investment will provide a higher tax shield in the current year but no tax shield in future years, as opposed to the pre-2017 period when firms had to write off an asset over a

specified number of years. The impact of the above changes on capital budgeting, therefore, is an empirical question.

The tax law changes will also affect the after-tax cash flows from international projects. Before the TCJA, global earnings of U.S.-based companies were taxed but taxes were deferred until the earnings were repatriated. The previous system encouraged companies from repatriating their foreign earnings to avoid paying taxes. Moreover, some companies moved their headquarters to other countries to take advantage of their lower corporate tax rates. Under the TCJA, a U. S. parent firm generally will have to pay an immediate U. S. income tax at a 10.5% rate (the rate will increase to 13.1% after 2025) on profits of its foreign subsidiaries related to intangible assets. The parent firm can, however, claim credit for 80% of the total amount of income taxes paid to foreign governments. For profits on tangible depreciable assets, the tax bill allows firms to have tax-free treatment for a portion of their foreign income up to a reasonable amount of return. Half of the remainder will be taxed at the parent's rate. These changes will make corporate decision making more efficient especially if non-repatriation of earnings in the pre-2018 period resulted in sub-optimal investment decisions.

In summary, the lower tax rate and caps on interest tax deductions will, *ceteris paribus*, reduce the interest expenses tax shield, marginally raise the cost of capital, and incentivize corporations to deleverage. The lower tax rate and the immediate expensing of capital expenditures until 2023, however, will lead to higher project cash flows and more projects with positive net present values. The lower financial leverage combined with higher after-tax cash flows will likely result in healthier and globally more competitive U.S. Corporations.

4. Tax Law Changes and S&P 500 Firms: Some Estimates

Relevant data for 2017 are gathered from Bloomberg to assess the law's impact on large U.S. firms that represent a cross-section of U.S. business. Table 1 shows that on average an S&P 500 firm will save an estimated \$328 million in taxes due to the lower tax rate of 21%. The table also shows that on average S&P 500 firms are unaffected by the restrictions on interest expense deductibility. It is important to note that taxable income reported on the income statement is generally different than the income reported to the IRS, which is affected by many factors, including tax-loss carryforwards, tax credits, and depreciation. However, given this study's large sample size of 500 firms, the above estimate of corporate saving due to the lower tax rate is likely to be close to the real value.

Table 1. The Impact of the TCJA on Corporate Taxes

Average Values (in Millions) for 2017 for S&P 500 Firms

	Tc=35%	Tc=21%
EBITDA	\$4,374	\$4,374
Less Depreciation and Amortization	\$1,465	\$1,465
EBIT	\$2,909	\$2,909
Less Interest Expense	\$562	\$562
EBT	\$2,347	\$2,347
Less Taxes	\$821	\$493
Net Income after Taxes	1,526	1,854

Change in taxes paid: -\$328

(Actual taxes paid in a year are generally different than the taxes reported on the income statement due to many factors, including depreciation.)

Interest cap of 30% of EBITDA: \$1,312

Interest cap of 30% of EBIT (after 2022): \$872

Note. In the pre-TCJA period, firms faced a progressive tax code resulting in the tax rates that varied from 15% to 39%. The 35% statutory tax rate was used in the above calculations as these are large firms that faced a 34% or higher tax rate on income above \$75,000.

Table 2 compares the present values of the depreciation tax shields using both old and new tax rates. It is assumed that the 2017 average annual capital expenditure of \$1,462 million for S&P 500 firms will be unchanged. It is further assumed that investments under the old tax law would have been depreciated using the seven-year accelerated depreciation schedule.

The present value of the depreciation tax shield using the old tax rate of 35% is \$396 million as compared to \$307 million under the new 21% rate, yielding a net disadvantage of \$89 million. However, the lower tax rate still saves these firms an average of \$239 million (\$328 million-\$89 million) annually.

Table 2. The Impact of TCJA on the Depreciation Tax Shield

The following example uses the 2017 S&P 500 average capital expenditure of \$1,462 million and assumes a seven-year depreciation life span.

Year	1	2	3	4	5	6	7	8
Depreciation (%)	14.29%	24.49%	17.49%	12.49%	8.93%	8.92%	8.93%	4.46%
Depreciation Tax Shield(Tax Rate* Dep'n*CapEx)	73.12	125.32	89.50	63.91	45.69	45.64	45.69	22.82

PV (Tc = 35%, WACC =7.7%): \$396

PV (Tc = 21%): \$307

Change in Tax Shield = -\$89 million

Note. Due to the half-year convention, only one half of the first year's depreciation is claimed, resulting in an asset being depreciated over eight years.

Table 3 displays the impact of the new tax law on the corporate weighted average cost of capital (WACC). The following equation is used to estimate the WACC (Brealey et al., 2018):

$$WACC = K_d \cdot (1 - T_c) \cdot D/V + K_e \cdot E/V,$$

Where,

WACC = Weighted average cost of capital

D = Total short-term and long-term debt

E = Market value of equity

V = Firm value (D+E)

K_d = Cost of debt

K_e = Cost of equity

T_c = Corporate tax rate

The above formula only includes the two main sources of funds, debt and equity and excludes less commonly used sources such as preferred stock. Table 3 displays the average WACC for S&P 500 firms using the 35% and 21% tax rates. The average WACC rises marginally from 7.7% to 7.8% under the new tax regime. It should be noted that, due to the difficulty involved in estimating the cost of equity, the WACC estimate is recognized as a very rough estimate for the cost of funds. As noted before, interest expense as a percent of EBIT or EBITDA is below the 30% limit and therefore has no impact on WACC calculations at present. The WACC calculations will change as follows for firms affected by the 30% ceiling:

$$WACC = K_d * F * (1 - T_c) * D/V + K_d * (1 - F) * D/V + K_e * E/V,$$

Where,

F = the fraction of total interest expense that is tax-deductible.

Table 3. The Impact of the TCJA on the WACC

Average 2017 values for the following variables for S&P 500 firms were used in the cost of capital calculations:

Total debt (D): \$20.55 billion

Cost of debt (K_d): 2.74%

Market value of equity (E): \$47.16 billion

Cost of equity (K_e): 10.26%

WACC (T_c= 35%): 7.7%

WACC(T_c=21%): 7.8%

5. Summary and Conclusion

This paper examines the impact of the Tax Cuts and Jobs Act on corporate decisions pertaining to capital structure and capital budgeting for S&P 500 firms. The lower tax rate of 21% will diminish the attractiveness of debt as it will negatively impact the value of interest expense tax shield. The lower tax rate will marginally raise the cost of capital from 7.7% to 7.8%.

Changes to depreciation rules will have varied impacts. In the short run -until 2023- corporations will be able to expense newly acquired equipment in the year incurred instead of depreciating such purchases over time. Tangible property acquired during tax years beginning in 2023 will be 80% deductible in that tax year, scaling down 20% each year, with no special expensing provided for 2027 and later years. After 2023, the value of the depreciation related tax shield will be diminished by the decreased corporate tax rate of 21%. The lower tax rate, however, will result in higher after-tax project cash flows and could lead to higher corporate investments.

Profits from foreign entities of U.S. businesses will be subjected to an immediate income tax of 10.5%. Further, the law allows for a partial tax credit for taxes paid to a foreign government. Impacts of the Tax Cuts and Jobs Act (TCJA) will be varied and significant. Perhaps the greatest impact will be on the average savings incurred as a result of the Act. The lower tax rate saves these large firms an average of \$239 million per year.

References

- Brealey, R., Stewart, M., & Alan, M. (2018). *Fundamentals of Corporate Finance*, McGraw Hill (9th ed.).
- Faccio, M., & Xu, J. (2015). Taxes and Capital Structure. *Journal of Financial and Quantitative Analysis*, 50, 277-300. <https://doi.org/10.1017/S0022109015000174>
- Graham, J., & Campbell, H. (2002). How Do CFOs Make Capital Budgeting and Capital Structure Decisions? *Journal of Applied Corporate Finance*, 15, 8-16. <https://doi.org/10.1111/j.1745-6622.2002.tb00337.x>
- Graham, J. R. (2008). Taxes and Corporate Finance. In B. E. Eckbo (Ed.), *Handbook of Corporate Finance; Empirical Corporate Finance*. Elsevier Science, Amsterdam. <https://doi.org/10.1016/B978-0-444-53265-7.50003-2>
- Modigliani, F., & Merton, H. M. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *American Economic Review*, 48, 261-297.
- Ross, S., Randolph, W., & Jaffe, J. (2019). *Fundamentals of Corporate Finance* (12th ed.). McGraw Hill.
- Tax Cuts and Jobs Act*. (n.d.). Retrieved February 15, 2018, from <https://www.congress.gov/bill/115th-congress/house-bill/1/text>