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Case Study—Impact of Tax Cuts and Jobs Act

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The Tax Cuts and Jobs Act of 2017 (TCJA) slashed the corporate tax rate by 40 percent, from 35 percent to 21 percent. If you follow the news through social media (or other outlets, but particularly Twitter), you may have heard that many corporations, including some insurance companies, used the reduction to the tax rate to pay bonuses to their employees. Entities paying less taxes to the Internal Revenue Service (IRS) obviously retain more income, and for many companies, including some insurance companies, this can result in more take-home pay for employees. But are the implications of the new tax law all positive? Is this an act of generosity by the federal government to corporations, including insurance companies?

Not exactly. While TCJA contains certain provisions beneficial for corporate entities as well as individual tax payers, Part IV of the law is titled "Provisions Related to Specific Entities and Industries," and Subpart B of Part IV is labeled "Insurance Reforms." This section of the law contains adjustments to insurance regulation that offset much of the increase to profitability realized from the decrease in the corporate tax rate. The offsets come in the form of changes to the methodology used to calculate tax reserves and changes to components of Tax DAC. In addition, while not part of TCJA nor revenue to the IRS, changing the corporate tax rate generally increases target capital, due to how the corporate tax rate is incorporated to risk-based capital (RBC) calculations, and is another opposing force to gains in profitability.[1]

We examined the impact of the major changes to insurance tax law within TCJA for two types of recently issued contracts, a term life insurance policy and a whole life insurance policy. For these product types, we started with a baseline model and profitability results consistent with pre-TCJA tax law. We then stepped through each implication of TCJA and attributed a change in profitability to each component. Table 1 lists the steps of our attribution, each of which are described in detail within the article. Results included are displayed after each incremental step and compared to the prior step.

We examined two types of policies—a 20-year level term policy and a whole life policy. Both policies were issued to a 40-year-old male preferred non-smoker with a face amount of $250,000. We assumed that these contracts were issued after TCJA was effective. The primary metrics used to measure profitability were profit margin, defined as the present value of distributable earnings divided by present value of premium, and the internal rate of return (IRR). Throughout the analysis, we note that differences to profitability between the two types of products are primarily due to the duration of the products as well as product features. Whole life has a much longer duration as compared to term, as well as a cash value feature.

Table 1
TCJA Profitability Attribution Summary

Baseline—**Pre-TCJA**	Profitability calculated based on Pre-TCJA basis
Corporate Tax Rate	Reduced corporate tax rate to 21 percent
Tax Reserve Method	Implemented TCJA tax reserve methodology
Tax DAC	Increase Tax DAC capitalization rates and amortization length
RBC Factors—**Post-TCJA**	Updated corporate tax rate to 21 percent in capital calculations

Table 2
Reduced Corporate Tax Rate

	FIT Corporate Rate	Tax to Stat Reserve Ratio	DAC Tax	RBC	20-Year Level Term		Whole Life	
					Profit Margin	*IRR*	*Profit Margin*	*IRR*
Before	35%	100%	Pre-TCJA	Pre-TCJA	5.7%	14.7%	5.2%	15.0%
After	21%	100%	Pre-TCJA	Pre-TCJA	9.1%	17.2%	7.5%	16.6%
Impact	**14%**	-	-	-	**3.4%**	**2.5%**	**2.3%**	**1.6%**

CORPORATE TAX RATE

As noted, TCJA reduced the corporate tax rate from 35 percent to 21 percent. Generally, for an entity making a profit, a lower corporate tax rate will decrease the amount of taxes owed and paid. From the base case, the change in corporate tax is as advertised, an increase to both profit margin and IRR for both contract types, as shown in Table 2.

INSURANCE REFORM

We next analyzed the update to the tax reserves calculation. TCJA revises the methodology used to calculate tax reserves to be the maximum of 92.81 percent of the NAIC prescribed reserve method[2] (CRVM for life insurance contracts) and the net surrender value. Some call this the "haircut methodology" and it is a change to the previous federally prescribed tax reserve methodology, which was similar to the current statutory basis, but substituted federally prescribed assumptions, generally resulting in tax reserves being lower than statutory reserves.

Tax reserves were, and still are, capped at the statutory reserves. It is beneficial for insurance companies to minimize the difference between statutory and tax reserves, thereby maximizing the tax reserve. You can think about tax reserves as a tax deduction, which reduces taxable income.

Therefore, setting tax reserves as a percentage of statutory reserves (92.81 percent to be exact) results in decreased profitability for most life insurance contracts issued since 2009. This is because during that time many of the methodologies and assumptions (mortality and discount rate) used to calculate tax reserves have been the same as statutory, meaning the tax and statutory reserves have been equal.

Explicitly, before TCJA, for many life insurance contracts, a company could account for 100 percent of the change in statutory reserves when calculating taxable income, whereas now only 92.81 percent can be accounted for. For our analysis, since we were looking at recently issued products, we realized a decrease to profitability, both for the IRR and the Profit Margin, as shown in Table 3.

Table 3
Update Tax Reserve Methodology

	FIT Corporate Rate	Tax to Stat Reserve Ratio	DAC Tax	RBC	20-Year Level Term		Whole Life	
					Profit Margin	*IRR*	*Profit Margin*	*IRR*
Before	21%	100.00%	Pre-TCJA	Pre-TCJA	9.1%	17.2%	7.5%	16.6%
After	21%	92.81%	Pre-TCJA	Pre-TCJA	8.9%	16.9%	6.4%	15.4%
Impact	✓	**7.19%**	-	-	**-0.3%**	**-0.3%**	**-1.2%**	**-1.2%**

Table 4
Increase Tax DAC Capitalization & Amortization Length

	FIT Corporate Rate	Tax to Stat Reserve Ratio	DAC Tax	RBC	20-Year Level Term		Whole Life	
					Profit Margin	*IRR*	*Profit Margin*	*IRR*
Before	21%	93%	Pre-TCJA	Pre-TCJA	8.9%	16.9%	6.4%	15.4%
After	21%	93%	Post-TCJA	Pre-TCJA	8.5%	16.6%	6.0%	15.0%
Impact	✓	✓	✓	-	-0.3%	-0.3%	-0.3%	-0.4%

Table 5
Increase RBC Components

	FIT Corporate Rate	Tax to Stat Reserve Ratio	DAC Tax	RBC	20-Year Level Term		Whole Life	
					Profit Margin	*IRR*	*Profit Margin*	*IRR*
Before	21%	93%	Post-TCJA	Pre-TCJA	8.5%	16.6%	6.0%	15.0%
After	21%	93%	Post-TCJA	Post-TCJA	7.6%	15.2%	5.7%	14.5%
Impact	✓	✓	✓	✓	**-1.0%**	**-1.4%**	**-0.3%**	**-0.5%**

Another significant update is the change to Tax DAC. For those unfamiliar with this concept, let's start with some basics. Tax DAC is the tax accounting treatment of deferred acquisition costs, similar in concept to the treatment of GAAP DAC but simplified. The IRS prescribes a level percentage of capitalization, based on product type, which is intended to be a proxy estimate of first year commissions. Like GAAP DAC, the capitalized amount is then amortized and expensed over time, but unlike GAAP DAC, the amortization is in a straight-line manner over a defined period. The result is that a company generally pays more tax to the IRS upfront (due to costs being capitalized) but pays less tax in future periods due to amortization of the acquisition costs. This mechanism may be thought of as an interest-free loan to the IRS.

TCJA increases the capitalization percentage for each of our products from 7.7 percent to 9.2 percent and increases the amortization period from 10 years to 15 years. Both items result in a decrease to profitability, as the higher capitalization percentage results in more capitalization (or in terms of a loan, a larger loan) and the amortization is extended five years, which increases the time period for capitalized costs to be expensed (or in terms of a loan, extends the time to repayment). The profitability results are displayed in Table 4.

MORE BAD NEWS … CAPITAL

The corporate tax rate reduction has tangential impacts and reduces profitability through decreased tax effects on required capital. Required capital is a key consideration of product profitability. In the United States, required capital is often referred to as risk-based capital and it is the minimum amount of capital required by the company. To obtain and maintain a high financial strength rating, companies generally need to hold more capital than the minimum, and this target capital is often a multiple of RBC. The RBC calculation is mostly formulaic and the components of the calculation, sometimes referred to as risk factors C0 through C4, are reduced for taxes. Depending on which part of RBC is being calculated, the post-tax C-values are roughly equal to pre-tax C-values multiplied by (1-Tax Rate Percentage). So, if the tax rates decrease from 35 percent to 21 percent and all else is equal, a smaller tax effect is applied to risk-based capital and the formula indicates that more capital is needed, which hurts profitability. Table 5 contains the results on profitability, which show this change has a higher impact on the 20-year level term contract compared to whole life.

TAX RESERVE EFFICIENCY

As noted, maximizing tax reserves is beneficial for insurance companies and that generally means having tax reserves as close as possible to statutory reserves. We were curious if there were certain contracts where the new tax reserve methodology might shrink a gap between tax and statutory reserves. The question we wanted to answer ended up being simple: Are there situations where the tax reserves are currently less than 92.81 percent of the statutory reserve? In these situations, we would expect the new tax reserve methodology to increase efficiency and profitability. One of the main drivers of differences in statutory and tax reserves under the old tax law is where the applicable federal interest rate (AFIR)—which is the discount rate used to compute tax reserves—is greater than the prescribed statutory discount rate. This is the situation that we examined to answer our question (however, we think there are other situations, so email us your examples to play along).

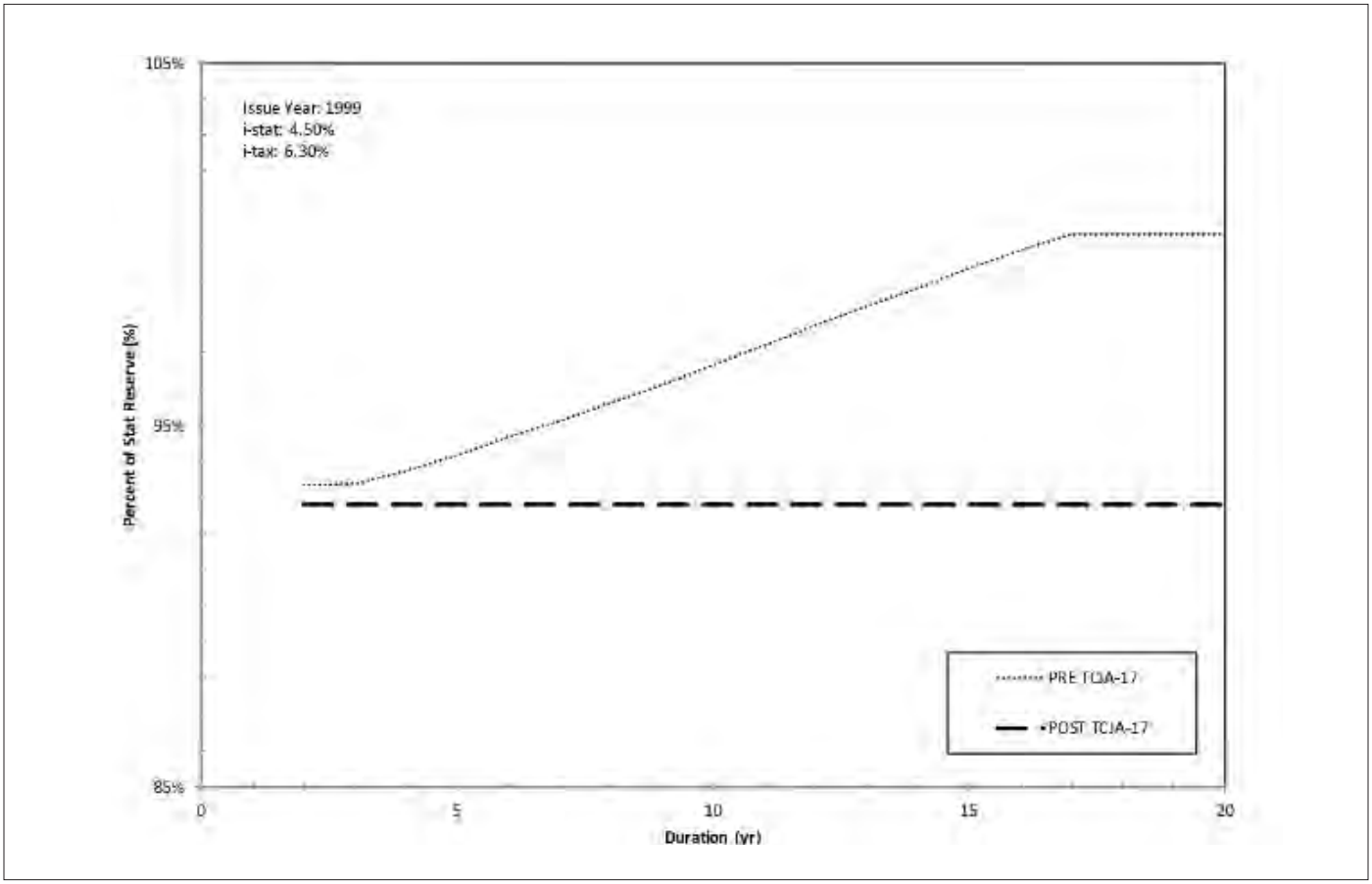
Table 6 contains the AFIR, the prescribed statutory discount rate from years 1992–2004. There are large differences between the appropriate discount rates across accounting bases, and tax discount rates are higher, leading to lower reserves on a tax basis, all else being equal.

Table 6
Comparison of Discount Rates

YEAR	AFIR	STAT	AFIR - STAT
1988	7.77%	5.50%	2.27%
1989	8.16%	5.50%	2.66%
1990	8.37%	5.50%	2.87%
1991	8.42%	5.50%	2.92%
1992	8.40%	5.50%	2.90%
1993	8.10%	5.00%	3.10%
1994	7.45%	5.00%	2.45%
1995	6.99%	4.50%	2.49%
1996	6.63%	4.50%	2.13%
1997	6.33%	4.50%	1.83%
1998	6.31%	4.50%	1.81%
1999	6.30%	4.50%	1.80%
2000	6.09%	4.50%	1.59%
2001	6.00%	4.50%	1.50%
2002	5.71%	4.50%	1.21%
2003	5.27%	4.50%	0.77%
2004	4.82%	4.50%	0.32%

We first tested our question for the same 20-year level term plan from our profitability analysis but assuming an issue date of 1999. In 1999, the difference in the discount rate between the two reserve methodologies was 1.80 percent. In Figure 1, we examined the ratio of the pre-TCJA tax reserves to statutory reserves and the ratio of post-TCJA tax reserves to statutory reserves.[3] The pre-TCJA tax to statutory ratio is always higher, with the ratio grading to 100 percent near the end of the term, while the TCJA-2017 to statutory reserves is a level percentage (92.81 percent) of statutory reserves. So even if we hopped in our DeLorean and turned back time to 1999, the pre-TCJA method was still more tax efficient from the insurance company's perspective. This contract would be in the 18th duration when TCJA became effective, so we did not find our post-TCJA winner in this term contract. In general, it appears that there might be some opportunity for increased efficiency in years preceding 1999; however, that would also likely imply a level term period of longer than 20 years. Even if a 30-year level term product was issued in the early 90s, where the difference between tax and statutory discount rates are largest, the contract would be near the end of its level term period, and we can see from Figure 1 that the tax to statutory ratio is increasing to 100 percent in later durations of the contract.

Figure 1
Tax to Statutory Ratio (20yr Term)



We then examined a whole life plan with an issue date of 1993. The contract was issued to a 40-year old, making them 65 in 2018, with the contract being in the 25th duration. In Figure 2, we display the ratio of both pre- and post-TCJA tax reserves, as well as the ratio of net surrender value to statutory reserves. Under both pre- and post-TCJA, the floor to the reserve is the net surrender value, and under post-TCJA, the comparison to the net surrender value is done after the haircut percentage is applied. We can see that the tax to statutory ratio of pre-TCJA and the net surrender value is lower than the post-TCJA until about the 35th duration. At the 35th duration, under both methodologies, the tax reserve is floored at the net surrender value.

So, we found an answer to our question, at least for an individual product type. The cash value ratio is less than the post-TCJA ratio at the current duration and for the next 10 durations, and in this case the new tax reserve methodology increases tax reserve efficiency and profitability compared to the old methodology. One caveat is that part of TCJA instructs companies that differences in tax reserves between the old and new methods are to be recognized evenly over eight years. So, while this situation increases profitability overall, the increased profit is spread over time.

Figure 2
Tax to Stat Ratio (Whole Life)

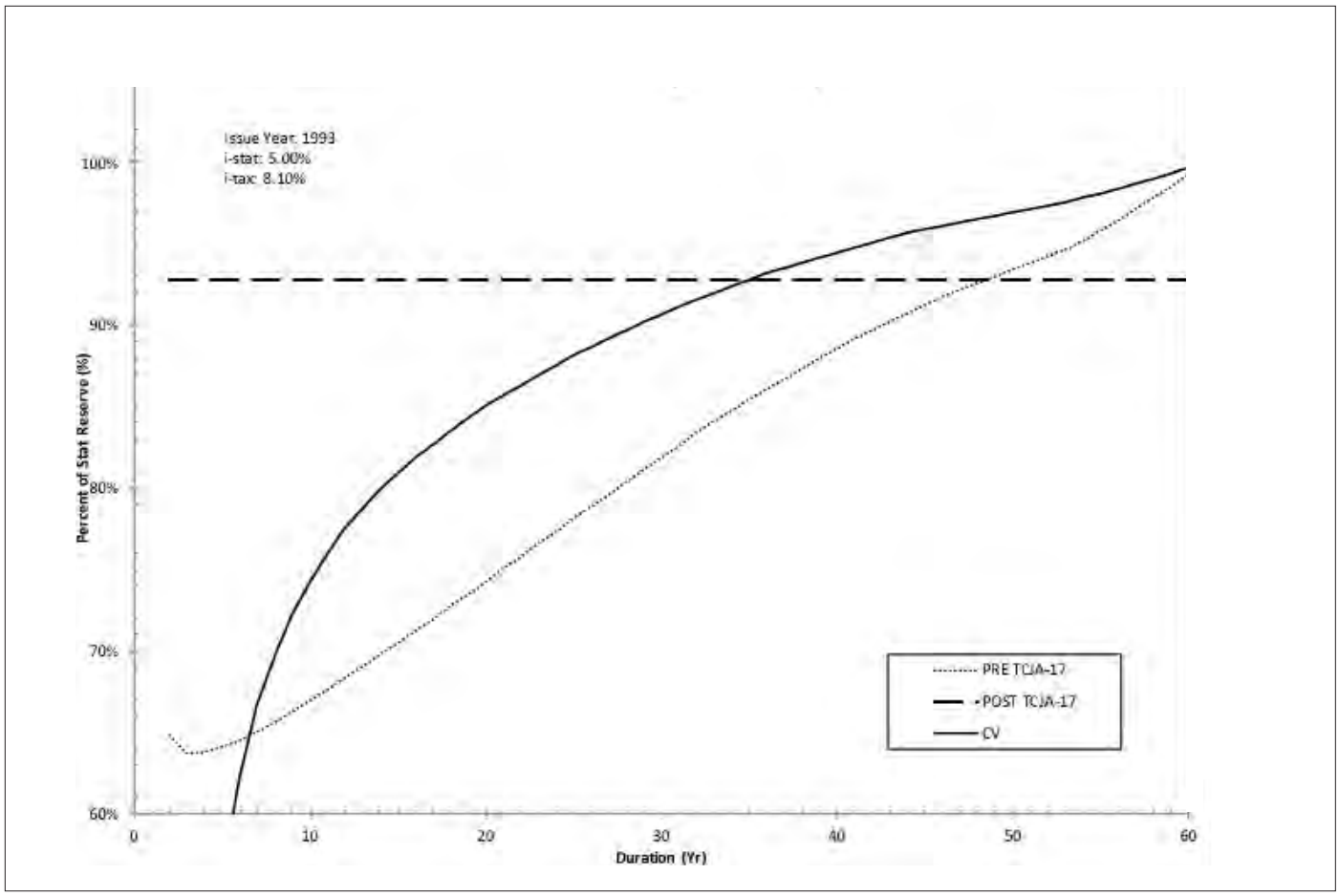


Table 7
Attribution of TCJA Net Impact

	20-Year Level Term		**Whole Life**	
	Profit Margin	*IRR*	*Profit Margin*	*IRR*
Baseline—**Pre-TCJA**	**5.7%**	**14.7%**	**5.2%**	**15.0%**
Corporate Tax Rate	9.1%	17.2%	7.5%	16.6%
Tax Reserve Method	8.9%	16.9%	6.4%	15.4%
Tax DAC	8.5%	16.6%	6.0%	15.0%
RBC Factors—**Post-TCJA**	**7.6%**	**15.2%**	**5.7%**	**14.5%**
Net Impact	1.9%	0.5%	0.5%	-0.5%

CONCLUSION

The various directional impacts of the components of TCJA to profitability are mostly intuitive and offset. While there appear to be situations where the impact of the tax reserve haircut methodology may not be directionally clear, the provisions contained in the insurance reform section and the resulting increase to capital amounts offset much of the increase to profitability realized by decreasing the corporate tax rate.

As can be seen by the attribution analysis shown in Table 7, the largest offset for the term plan was due to the impact on risk-based capital, while the largest offset for whole life was due to the haircut reserve methodology. The net impact of TCJA was close to neutral for both product types. The magnitude of the impact of TCJA on profitability may vary depending on the product design, reserve methodology and cash flow model assumptions, among many other things. ■

ENDNOTES

1 Our analysis is based on calculating capital with current RBC factors and updated tax adjustments using the new corporate tax rate. We note that the Academy of Actuaries and the NAIC Life Risk-Based Capital Working Group are analyzing how RBC factors should be updated due to the change in the corporate tax rate.

2 In this article, we assume the NAIC prescribed reserve method is equal to the statutory reserve, though this may not always be the case.

3 Please note that all graphs in this article reflect terminal reserves.

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Work Group Welcomes Input on PBA Projections for Future Practice Note

The American Academy of Actuaries' PBA Projections Practice Note Work Group is seeking input from practitioners on questions encountered when projecting future VM-20 reserve calculations. Issues may be related to inner/outer loops, simplification techniques, asset assumptions, VM-21/AG 43 and economic capital frameworks.

If you have questions relating to projecting future PBA (principle-based approach) calculations, the work group would like to hear from you. Please contact Academy life policy analyst Ian Trepanier (trepanier@actuary.org) to submit questions and comments, which will help in the development of a future practice note on PBA projections.