

Perspectives

MAY 2018

OUR VIEW ON INSURANCE CAPITAL MANAGEMENT TOPICS

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Tax Reform: Impact on Capital Adequacy Downside Risk and Asset Allocation

Tax reform will impact risk tolerance and asset allocation for insurance company portfolios. How will tax-preferenced securities factor in for you?

Recently, we explored how tax changes have influenced the attractiveness of tax-preferenced investments and the impact of accounting regimes and taxes on rating agency and regulatory solvency assessments.¹ This *Perspectives* addresses the impact of these tax changes on risk tolerances and asset allocation when taxes are explicitly considered in the decision process.

To summarize the findings:

- Risk tolerance estimates are impacted significantly by tax changes – and may be counter intuitive
- The return hurdles *and* low volatility advantages of tax-preferenced securities rise with tax reform
- Asset allocation decisions will become increasingly more dependent on enterprise risk tolerance measures and require a tightly woven integration with prospective underwriting outcomes

This issue of *Perspectives* is divided into four sections. The first reviews the basic enterprise framework for insurer return on equity and risk based on formulation using industry-wide results. The second shows the impact of alternative approaches to accounting for taxes in downside risk estimates. In the third section, we discuss how the recently enacted tax law impacts asset allocation. We conclude with key takeaways and an expanded summary of findings.

THE BASIC ENTERPRISE RETURN AND RISK FRAMEWORK

NEAM's enterprise-based asset allocation framework follows the DuPont return on equity formulation.²

$$\text{Return on Equity} = \frac{\text{Earnings}}{\text{Equity}} = \left[\text{Premium Leverage} \times \text{U/W Margin} \right] + \left[\text{Investment Leverage} \times \text{Investment Returns} \right]$$

Table 1 shows estimated industry pre-tax total return scaled to 2017 premiums, invested assets and capital. The resulting total return on equity is derived from the DuPont formulation where premium and investment leverage, premiums to capital [0.8:1.0] and invested assets to capital [2.2:1.0] are multiplied by the underwriting margin [one minus the combined ratio] of 3% and investment total returns of 3.9%, respectively.

Earnings risk is the combined leveraged volatility of the underwriting and investment returns, plus any correlation effects. The industry's estimated pre-tax return on capital and earnings risk are 10.9% and 12.5%, respectively. The 99.5% VaR is 25.8% of capital *within* the next year.³

Table 1. Industry Proxied Pre-Tax Return on Equity

Enterprise Statistics [%]	Pre-Tax	DuPont ROE Drivers	Pre-Tax
Total Return on Capital [ROC]	10.9	Premium Leverage	0.8
Earnings Risk [ER]	12.5	U/W Margin	3.0
Probability loss exceeds 10%	13.8	Investment Leverage	2.2
99.5% VaR @ % Capital	25.8	Investment Returns	3.9

Source: NEAM

ACCOUNTING FOR THE IMPACT OF TAXES ON ESTIMATED VAR

Most U.S. domiciled insurance companies are subject to U.S. Federal income taxes. As shown in the first two columns of Table 2, taxes reduce expected rates of return, their volatility and VaR estimates. The extent of the impact depends on the type of earnings [ordinary income, preferred items, and capital gains and losses] and pre-tax VaR estimates.⁴ Occasionally, practitioners tax affect the returns but not earnings risk, in which case the estimated VaR is greater than the pre-tax amount. This is shown in column three [mixed rates].⁵

Table 2. Industry Pre/Post-Tax Values

Enterprise Statistics [%]	Pre-Tax	35% Tax Rate	Mixed Rates
Total Return on Capital [ROC]	10.88	7.82	7.82
Earnings Risk [ER]	12.53	9.87	12.53
99.5 VaR as % Capital	25.78	20.92	28.30

Source: NEAM

Table 3 shows pre-tax and after-tax statistics using historic 35% and newly enacted 21% tax rates. Columns one and two are identical to what was shown in Table 2 above. As taxes decrease, returns and volatility increase – leading to higher estimates of VaR, and potentially counter-intuitive results.

Table 3. Industry Pre/Post-Tax Values

Enterprise Statistics [%]	Pre-Tax	35% Tax Rate	21% Tax Rate	After-Tax Bps Difference
Total Return on Capital [ROC]	10.88	7.82	8.99	117
Earnings Risk [ER]	12.53	9.87	10.79	92
99.5 VaR as % Capital	25.78	20.92	22.52	160

Source: NEAM

There are two takeaways from Table 3:

1. As tax rates fall, both returns and earnings volatility migrate to their pre-tax levels – *and* so does the estimated VaR.
2. Downside risk metrics are asymmetric: the benefit of a higher expected return [117 bps, or nearly 15% improvement] is offset by a lesser increase in earnings risk [92 bps, or 9.3% deterioration], yielding an increased estimate of VaR [22.52%].

THE IMPACT OF ENACTED TAX CHANGES ON ASSET ALLOCATION

Table 4 shows *after-tax total* return and risk statistics for municipal and broad market securities. As tax rates fall, the relative value of municipal returns declines from 85 bps (4.88 – 4.03) to 5 bps (4.94 – 4.89). However, municipal’s volatility becomes relatively more favorable at 81 bps (3.84 – 3.03) versus 58 bps (3.16 – 2.58). The estimated VaR increases for both security types as rates decline. But, municipals have a superior “net-net” outcome, resulting in a less dominant after-tax return and an increasingly favorable risk profile as tax rates fall.

Table 4. I.C.E. BofA ML Broad Market and Municipal Indices 1990–2017⁶

Return and Risk Metrics 1990-2017		35% Tax Environment		21 % Tax Environment	
Metric (After-Tax)	Average Annual Return and Risk	UOTO Municipals	DOAO U.S. Broad	UOTO Municipals	DOAO U.S. Broad
Total Return	Return	4.88	4.03	4.94	4.89
	Risk (StDev)	2.58	3.16	3.03	3.84
	99.5 VaR% Assets	3.45	5.51	4.55	6.70
Option Adjusted Duration	Average	4.86	4.91	4.86	4.91
	StDev	0.72	0.60	0.72	0.60
Credit Quality %	AAA-AA/A/BBB	73/23/4	75/11/14	73/23/4	75/11/14

Source: NEAM

Table 5 highlights results of the industry’s portfolio holdings reallocation in response to the recently enacted tax law. The *focus* is on changes in the “optimal” municipal bond allocation. Column one shows current holdings’ enterprise statistics and broad sector allocation at the prior 35% tax rate. Column two displays the corresponding optimal similar VaR portfolio achieving an expected after-tax return of 8.67%. This is driven by an increase in (longer dated) municipals and a lessening of overall credit quality. In the new 21% tax rate environment, the similar VaR portfolio is achieved with a similar duration extension, an unchanged credit quality and a lesser municipal bond allocation increase.

Table 5. Asset Reallocation at 35% and 21% Tax Rates

Results	35% Tax Rate		21% Tax Rate
	Current	Similar VaR	Similar VaR
Enterprise Statistics			
Total Return on Equity	7.82	8.67	9.68
Earnings Risk [Std Dev]	9.87	10.12	10.41
99.5 VaR % Capital	20.92	20.92	20.92
Add. Return/Risk Metrics			
Default Loss (\$)	1.96	1.57	1.52
Duration (OAD)	4.42	4.93	4.93
Book Yield	3.22	3.54	3.50
Average Rating	AA-	A+	AA-
BBB%	9.6	7.8	5.8
<BBB%	3.5	5.8	3.9
Sector Distribution			
St/Gvt/Acy	15.1	5.3	7.5
Municipal	23.0	37.0	27.7
U.S. InvGrd Credit	25.0	18.0	22.9
U.S. BIG	2.4	3.0	2.6
MBS/OSS	13.4	11.3	15.5
Preferreds/Bank Loans	1.1	2.8	1.3
Equities/Alts	19.8	22.5	22.5
Total	100.0	100.0	100.0

Source: NEAM

Prior to the enacted tax law changes, many individual companies were likely to have been significantly underweight in tax-preferenced securities. Thus, the industry portfolio reallocation above identifies a large municipal increase in column two.⁷ With lower tax rates, the potentially overwhelming advantage for municipals diminishes, requiring a far lesser increase to achieve an optimal allocation within estimated enterprise risk levels.

The results in Table 5 are based on industry holdings at year-end 2016 and capital market opportunities in 2017. Individual company results will vary depending upon their current tax-exempt and taxable embedded yield term structures and future capital market opportunities which meet their market risk tolerances. These will evolve with time. As they do, the relative attractiveness of current holdings to tax-preferenced securities available in the capital markets will change...as they have done during all prior tax regimes. It might be “in with the new,” but for astute practitioners it definitely is not “out with the old”...at least not yet.

KEY TAKEAWAYS AND SUMMARY FINDINGS

- The impact of lower taxes on downside risk metrics [such as VaR] is asymmetric. Increases in after-tax returns are off-set by smaller increases in volatility that lead to higher VaR estimates.
- Measuring VaR on an after-tax basis is consistent with an Enterprise Based Asset Allocation™ framework. However, prudent risk management requires monitoring both after-tax and pre-tax metrics due to issues of recoverability and timing.
- Lower tax rates diminish the relative return advantages of tax-preferenced securities. They also improve their relative volatility advantages which leads to a continued superior higher after-tax risk adjusted profile.
- An after-tax review of industry holdings, underwriting results and leverage suggests lower tax rates will reduce the allocation to tax-preferenced securities. However, we expect that tax-preferenced securities will remain a key component within taxable insurance organizations.
- How the details of asset allocation play out in the future remains to be seen, *and how individual companies respond* will depend on their capacity for tax-preferenced securities, their embedded yield term structures vis-à-vis capital market opportunities and their risk tolerances. In our view, lower tax rates will require an ever tighter integration of investment opportunities with underwriting results in companies' Enterprise Based Asset Allocation™ decision process.

For more information on this topic or past discussions on the impact of tax changes, please contact us.

ENDNOTES

¹ See these past issues of *Perspectives*: “The New World Order: Bridging the Gap,” February 2018. “There’s a New Sheriff in Town: Now What?,” January 2017. “The [Ir]relevance of Value-at-Risk: An Oxymoron?,” April, 2010.

² Conceptually, this formulation applies regardless of the measurement regime. The components may be estimated differently, depending on how the estimated VaR is intended to be used.

³ As losses occur throughout the year, it is more likely that their total sum accumulates to the VaR threshold at any time during the year than precisely at the end.

⁴ The percent reductions in total return and earnings risk are not identical nor equal to 35%. This is because of the impact of proration rules on income components of total return and the difference in the relative price volatility of preferred versus non-preferred items.

⁵ The discussion of taxes in VaR calculations is rare and we have observed a variety of mixes and matches of tax treatment. Calculations are laborious and errors may be the result of oversight or inability to account for diverse tax rules.

⁶ The returns shown are total returns. The tax rate for tax-exempt bond coupon income is unchanged at 5.25%. The tax rate for price changes of both taxable and tax-preferred securities declines from 35% to 21%. The latter causes the increase in the after-tax total return of municipal securities.

⁷ This comment is based on many years of compiling peer reviews.





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