Asset Location – Irrelevant?

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In this article I critique the logic and math used by the finance industry to support their asset location advice. It is not so much their conclusions I care about, as how they get there. I present a list of arguments commonly used, why they are wrong, and some issues that are never discussed.

Tax shelters, such as Roth IRAs and 401(k)s, exist to reduce the taxes you pay. Their benefit can be measured as the difference in outcomes compared to a taxable account. The objective of asset location is to maximise that benefit by choosing which asset to hold in which account. To that end it is necessary first to agree with the net benefits of traditional 401(k) and IRA (which I will refer to as "TRAD") accounts, as I argued in *How to Properly Frame 401(k) Benefits*. Contrary to the industry's belief, their universal benefit comes from permanently sheltering profits from tax. There is also a possible bonus (or penalty) from withdrawals at tax rates lower (or higher) than at contribution. No one disputes that the net benefit of Roth accounts comes from permanently sheltering profits from tax.

1. There is a near universal conceptual model of TRAD accounts, which has profits taxed on withdrawal at full (ordinary income) rates (e.g., see here). This mistaken understanding results in location advice to keep stocks (paying dividends and capital gains that would otherwise be preferentially taxed) out of TRAD accounts, even if that means using a taxable account.

But the tax on withdrawals from TRAD accounts is an allocation of capital between the account's 'owners,' not a tax on profits. Assuming no bonus or penalty from a change in tax rates, the outcomes of TRAD and Roth accounts are equal. The benefits from profit sheltering are equal, regardless if the profits are interest, dividends or capital gains.

2. Another decision rule says volatile stocks should be kept in taxable accounts because the tax benefit from capital losses is lost in tax-shelters (e.g., see here). But in taxable accounts, only net capital gains over time are taxed – gains less losses. In tax-shelters as well, only net profits over time are tax-free. Losses are treated equally in all accounts. And no one invests with the presumption that they will lose money over time.

3. Many (e.g., see here) asset locate the dollars sitting in any account as if they were of equal value. They ignore the reality that before-tax dollars are worth less than after-tax dollars. Their analysis of asset location looks like examples A and B below. Bonds earn 3% and are taxed at 25%. Stocks earn 8%, taxed at 3.75% (15% tax on 2% dividends; 0% taxed capital gain). If you believe $750 = $750 regardless, then their conclusion that bonds are better than stocks in TRAD accounts is justified by example A's better outcome (versus the opposite asset location in example B).

A	Taxable Stocks	Trad Bonds	Total
Invested	750	750	
Growth at	7.7%	3%	
Future Value at 30 years	6,943	1,820	
TDA withdrawal tax		455	
Ending Wealth	6,943	1,365	8,308

B	Taxable Bonds	Trad Stocks	Total
Invested	750	750	
Growth at	2.3%	8%	
Future Value at 30 years	1,462	7,547	
TDA withdrawal tax		1,887	
Ending Wealth	1,462	5,660	7,122

But when the tax rate is 25%, a TRAD account must have $1,000 to equal $750 in a taxed account. The asset location conclusion reverses when you model equal values for each asset allocation. Below, stocks in the TRAD account show a better outcome (D versus C). How you equate the value of dollars matters.

C	Taxable Stocks	Trad Bonds	Total
Invested	750	1,000	
Growth at	7.7%	3%	
Future Value at 30 years	6,943	2,427	
TDA withdrawal tax		607	
Ending Wealth	6,943	1,820	8,763

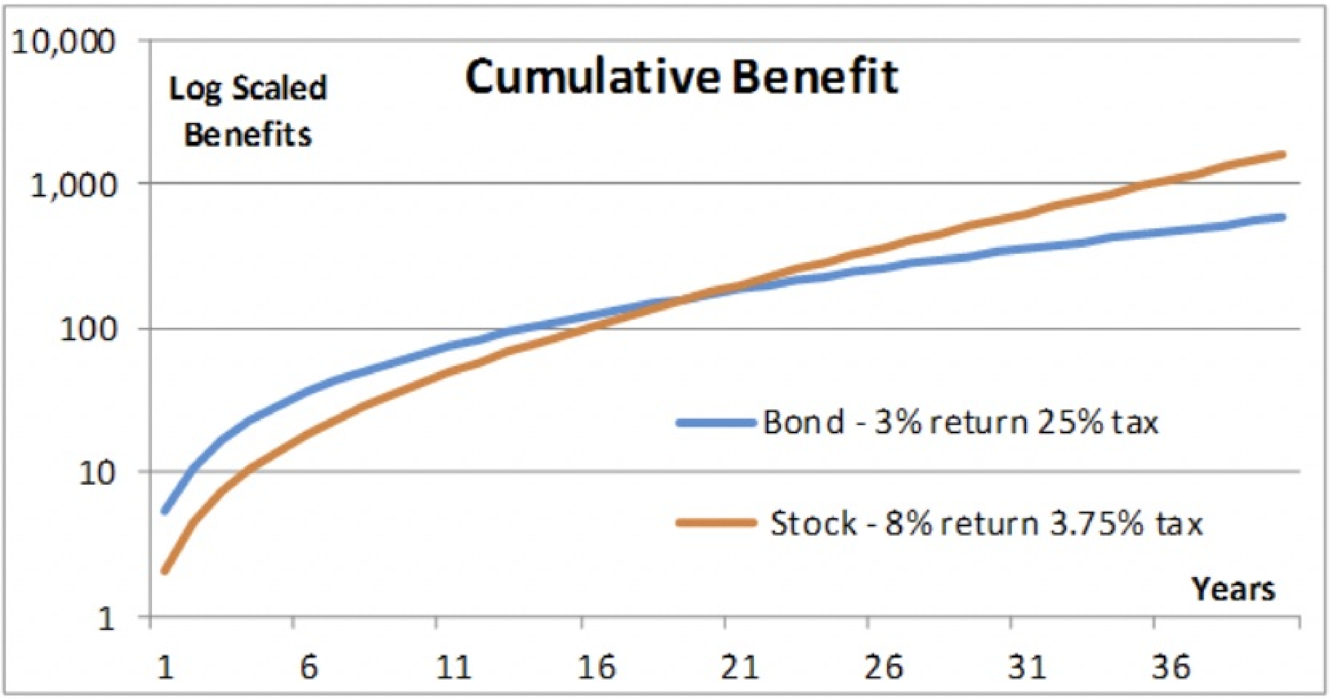
D	Taxable Bonds	Trad Stocks	Total
Invested	750	1,000	
Growth at	2.3%	8%	
Future Value at 30 years	1,462	10,063	
TDA withdrawal tax		2,516	
Ending Wealth	1,462	7,547	9,009

4. The industry often uses the side-by-side comparison method above to prove its opinions (e.g., see here). But this method proves nothing, because all examples show just one time span. If the same C and D examples above were measured with a 10-year time span, the asset location conclusion would be reversed, as shown below.

C	Taxable Stocks	Trad Bonds	Total
Invested	750	1,000	
Growth at	7.7%	3%	
Future Value at 10 years	1,575	1,344	
TDA withdrawal tax		336	
Ending Wealth	1,575	1,008	2,583

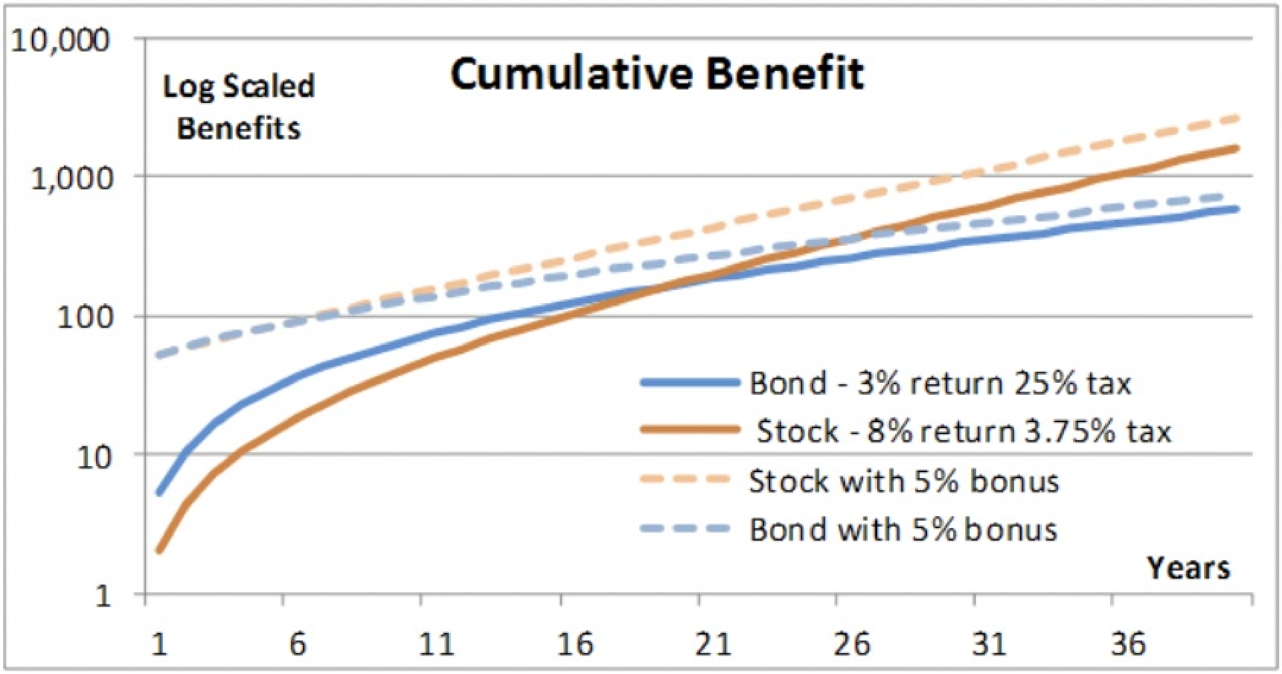
D	Taxable Bonds	Trad Stocks	Total
Invested	750	1,000	
Growth at	2.3%	8%	
Future Value at 10 years	937	2,159	
TDA withdrawal tax		540	
Ending Wealth	937	1,619	2,556

Changing the time horizon can change the optimal asset location. We know the calculation for net benefits, so it can be charted over time for each asset's set of assumptions. Young people have the time to allow stocks to create greater benefits in tax shelters, but later in life, when time horizons are shorter, bonds should have priority.



5. Some advisors prioritize assets with an 'efficiency metric' (e.g., see here) that essentially multiplies the asset's rate of return by the tax rate on its profits (= $tax / $assets). You can tell this won't work because there is no input for time. It measures the net benefit in year one only – the far left of the chart above – when the rate of return and the tax rate are of equal importance. For longer periods, the rate of return determines the slope of the benefits line.

6. Never forget the TRAD account's potential bonus from lower withdrawal tax rates. Let's say the average tax on withdrawal will be 5% lower. The chart above won't change for Roth accounts, but in TRAD accounts stocks now create larger benefits (versus bonds) for any period more than five years. Because of stocks' higher rate of return and resulting larger account, their 5% bonus is a larger dollar value.



7. Finally, consider portfolio rebalancing. It dilutes the benefits from asset location because high-return assets are repeatedly sold. Now it takes longer for the benefits from high-return assets to exceed the benefits of high-tax assets. We saw above that stocks create more benefits given at least 20 years. But when Roth accounts are rebalanced to a 50/50 asset allocation, bonds are still creating more benefits even at 30 years.

Variables	Stock	Bond		
Rate of Return	8.0%	3.0%	Tax Rate on Contributions	25%
Income Tax %	3.8%	25.0%	Tax Rate on Withdrawals	20%
Allocation	50%	50%	Trad account Balance @ Start	$ 1,000
			Taxable Balance @ Start	$ 750

Stocks Prioritized in Tax Shelter Account						
	Tax Shelter		Taxable		Ending Wealth Roth	Ending Wealth Trad
	Stock	Bond	Bond	Stock		
t=0	750	-	750	-	**1,500**	**1,550**
profit	60	-	23	-		
tax	-	-	-6	-		
t=1	810	-	767	-	**1,577**	**1,631**
rebalance	788	22	767	-	**1,577**	**1,631**
profit	63	1	23	-		
tax	-	-	-6	-		-
t=2	852	22	784	-	**1,658**	**1,716**
rebalance	829	45	784	-	**1,658**	**1,716**
t=29	3,385	1,788	1,430	-	**6,603**	**6,948**
rebalance	3,301	1,872	1,430	-	**6,603**	**6,948**
profit	264	56	43	-		
tax	-	-	-11	-		-
t=30	3,566	1,928	1,462	-	**6,955**	**7,321**

Bonds Prioritized in Tax Shelter Account						
	Tax Shelter		Taxable		Ending Wealth Roth	Ending Wealth Trad
	Bond	Stock	Stock	Bond		
t=0	750	-	750	-	**1,500**	**1,550**
profit	23	-	60	-		
tax	-	-	-2	-		
t=1	773	-	808	-	**1,580**	**1,632**
rebalance	773	-	790	18	**1,580**	**1,632**
profit	23	-	63	1		
tax	-	-	-2	-0		-
t=2	796	-	851	18	**1,665**	**1,718**
rebalance	796	-	832	37	**1,665**	**1,718**
t=29	1,767	-	3,394	1,467	**6,629**	**6,746**
rebalance	1,767	-	3,314	1,547	**6,629**	**6,746**
profit	53	-	265	46		
tax	-	-	-10	-12		-
t=30	1,820	-	3,569	1,582	**6,972**	**7,093**

It is only the bonus in TRAD accounts that allows stocks to have priority if the time span is greater than 10 years. But even then, the cumulative benefit from asset location after 30 years is only 3% ($7,321 versus $7,093).

Conclusion

The industry has made asset location a "thing," a service to sell and a subject for learned articles. Retail investors use social media to ask for how-to advice. Yet most of the theory underpinning asset location is mistaken, mis-applied, ignored or forgotten. Rules of thumb are just as likely to destroy value as create it. Charts matching assets to accounts will be wrong because the optimal location depends as much on personal factors (time horizon, tax rates, trading frequency, rebalancing, need to cash out) as on asset factors (rate of return, tax rate).

The best advice and the best asset management strategy is to ignore asset location.

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