When and for Whom are Roth Conversions Most Beneficial?
A New Set of Guidelines, Cautions and Caveats

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Resources

- The SSRN paper: *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3860359*
- Bogleheads.org threads—e.g., *https://www.bogleheads.org/forum/viewtopic.php?t=358688*
- Related research:
  - Debunking the widow tax hit
  - Updating Bengen's results for the RMD case & international markets
  - The annuity riddle (in prep)
  - Challenges to *Stocks for the Long Run*

…search SSRN.com for "McQuarrie" for any of these

Perspective

- You: down in the trenches
- Me: up in the tower

… and retired

SECTION 1

Who is the clientele?

The clientele

- Broadly: the mass affluent
  - Aka, the managerial & professional class
  - Wealth accumulated from saving and investing **salaries**
  - Much of it locked away in a Tax Deferred Account--401(k) etc.
- Specific focus: Rob and Sue
  - Dual income peaked at about $400,000 just before retirement
  - Now in their early 60s with millions in their TDAs
  - Income this year temporarily lower (e.g., one took early retirement)
  - Time for a Roth conversion?
- Down through Tom & Tam, peak income $200K

But not …

- The taxpayer trying to stay in the 12% bracket, stay out of the social security tax torpedo, stay within the 0% LTCG bracket, maximize ACA subsidy, etc., etc.

And also not:

- Jules and Jean, who sold a business for $10 million
- Hank, who closed up his hedge fund with $100 million in pocket

But also

- Elliot, the surgeon … Marjorie, the law firm partner … Phil the VP
- Still mostly salary income, but $800K, $1M, or somewhat more per year
- More millions in the TDA (5 – 10) … but most financial wealth still located in the TDA
- Top tax brackets today, but what about tomorrow, after salaries stop?
- Tippy-top edge of the mass affluent

TDA Wealth

- Likely to become a bigger part of many advisors' client base
- IRA and 401(k) revolution of the early 1980s beginning to mature
- Rise of the 401(k) millionaire

Implications of TDA wealth

- For the mass affluent, some portion of RMD income will be surplus
  - Not needed for necessities or anticipated discretionary expenditures
  - Hence, available for re-investment *once the distribution is taken*
  - The key insight from the SSRN paper

Hence the motivation for Roth conversion(s) in the mass-affluent case

- What a drag to have to pay taxes on money you don't need right now and would just as soon have left in the TDA to grow and grow
- Or worse: what if these surplus RMD amounts push you into a ***higher tax bracket?***
- The goal: convert and pay some tax now, to avert more tax later.
- Intertemporal tax arbitrage

SECTION 2

What is their tax situation? Or more exactly:

What is their ***projected*** tax situation?

The Conventional Wisdom

- Compare anticipated tax rate in retirement to tax rate at conversion
- Retirement tax rate higher→ then *do* convert
- Retirement tax rate lower → then do *not* convert
- Same rate? … then you are *indifferent* whether you convert or not
- Could maybe still convert, depending on client feelings / sensitivities
  - Tax diversification
  - Hedge against forecasting error
  - Visceral dread of taxes

Stake in the ground:

- Most of the time, for most of the mass affluent, the tax rate in retirement will be **AT BEST** the same rate as while working. *At best.*
- Making the constant rate case the key to understand, once the client has been defined as the mass affluent
- If Roth conversions can't be shown to be attractive under constant tax rates … most of the mass affluent should take a pass.

It's Not What You Don't Know That Hurts You

It's what you know that just ain't so.

Everybody knows …

- 1. By the commutative property of multiplication, *a* * X must equal X * *a*.
- 2. Let *a* be (1 – tx) where tx is some percentage, such as the 24% tax rate.
- 3. Let X be $(1 + r)^N$, where *r* is the annualized return on the asset and N is the number of years the investment is held.
- 4. It follows that deducting $24 for tax from an initial $100 investment, with the remaining $76 invested at return *r* for N years (Roth case), must give the same future value as investing the full $100 at that rate for those years, and multiplying the final value by (1 - .24)—as in a traditional 401(k).

Therefore, there can be no payoff from a conversion under constant tax rates!

The Math Is Rock Solid …

- But the conceptualization is faulty
- Fits a 2-period game: contribution at *T*1, then total liquidation at *T*2
- Which doesn't correspond to the RMD game, which extends over many periods

The Multi-Period RMD Game

- Retirement income and tax planning becomes an n-period game starting at age 72 when required minimum distributions begin
- Period 1: withdraw 3.65% of age 71 TDA balance from age 72 balance, pay tax;
- Period 2: withdraw 3.77% of age 72 TDA balance from age 73 balance, pay tax;
- Period 3: withdraw 3.92% of age 73 TDA balance from age 74 balance, pay tax;
- Period 4: withdraw 4.07% of age 74 TDA balance from age 75 balance, pay tax;
- …through at least joint life expectancy, about 93 for a pair of 72-year-olds (by which point the withdrawal rate will approach 10% (and continue to climb)

The Daunting Math of RMD Reduction

- Rob and Sue make a conversion of $100,000 in the nick of time
  - …this will reduce their initial age 72 RMD by $**3,650**
  - … saving taxes of $876 in the 24% bracket
- Tax savings approximately:
  - 0.02% of total TDA wealth (see below)
  - 0.33% of annual income
- … because 24% of 3.65% isn't going to be a very big number
- For the mass affluent, Roth conversions are a game played at the margin

Polling Question #1

Suppose under the post-2022 Uniform Life Table that the age 72 RMD is calculated to be $100,000. What must have been the value of the Tax Deferred Account used to determine that RMD?

a) About $5 million
b) About $1 million
c) Between $1 million and $1.5 million
d) Between $2.5 million and $3 million
e) Not possible to determine from the information given

Straight talk about present and future taxes

- Rob and Sue, dual income professionals, are 65 years old in 2022
- In 2022, the AGI floor for the 24% MFJ bracket, age 65+:
  - $206,850 ($178,150 + $25,900 + $2800)
- In 2029, when their RMDs begin, the AGI floor for the 24% bracket will be …
- Well, you tell me—what will inflation be over the next seven years?
  - No one knows; but you have to assume an inflation rate to answer the question, What will it take to nose into the 24% tax bracket in 2029 for Rob and Sue's first RMD?
  - Because tax brackets adjust for inflation each year !!

Inflation assumptions

- Has to be either:
  - 3% (annualized post-1926 inflation rate per the SBBI)
  - 2.5% (rate over the trailing 30 years, per the SBBI)
- Taking it as 3%, the AGI floor of the 24% bracket in 2029 will be:
- $254,400
- The 1st year RMD is 3.65% (1 / 27.4). Therefore, the required TDA balance, to have to worry about hitting the 24% bracket in 2029 …

Whoa—First have to subtract other income

- Dual income couple, expected 2029 Social Security income, *taxable* portion @85%:
  - ~$70,000 (+$20K, -$10K)
- Interest & ordinary income
  - $5,000
- Required RMD income to hit the 24% floor: $254,400 – $75,000 = $179,400
- Indicating a TDA balance of … **$4.9 million dollars** ($179,400 * 27.4)
  - Pension? Higher SS? Other income? Reduce balance by $274,000 per $10,000 of added income

That's what your client must have accumulated, to worry about RMDs throwing them … OMG … into the 24% tax bracket

- Corresponding balances, for neighboring brackets

22%	***24%***	***32%***	***35%***	***37%***
$1.7M	$4.9M	$10.4M	$13.5M	$20.7M
$50,000 pension?				
$0.4M	$3.5M	$9.0M	$12.1M	$19.4M

Mass affluent = Constant tax rate pre- and post-retirement

- Rob and Sue, salary income $400K in 2021
  - Marginal rate at 24% [if maxed out 401(k)]
- Tom and Tam, salary income $200K in 2021
  - Marginal rate at 22%
- Except Elliot and Marjorie, salary $1 million
  - Marginal rate now at 37%
  - Retirement tax rate *lower* unless TDA > $20 million and/or $100,000s of other income…

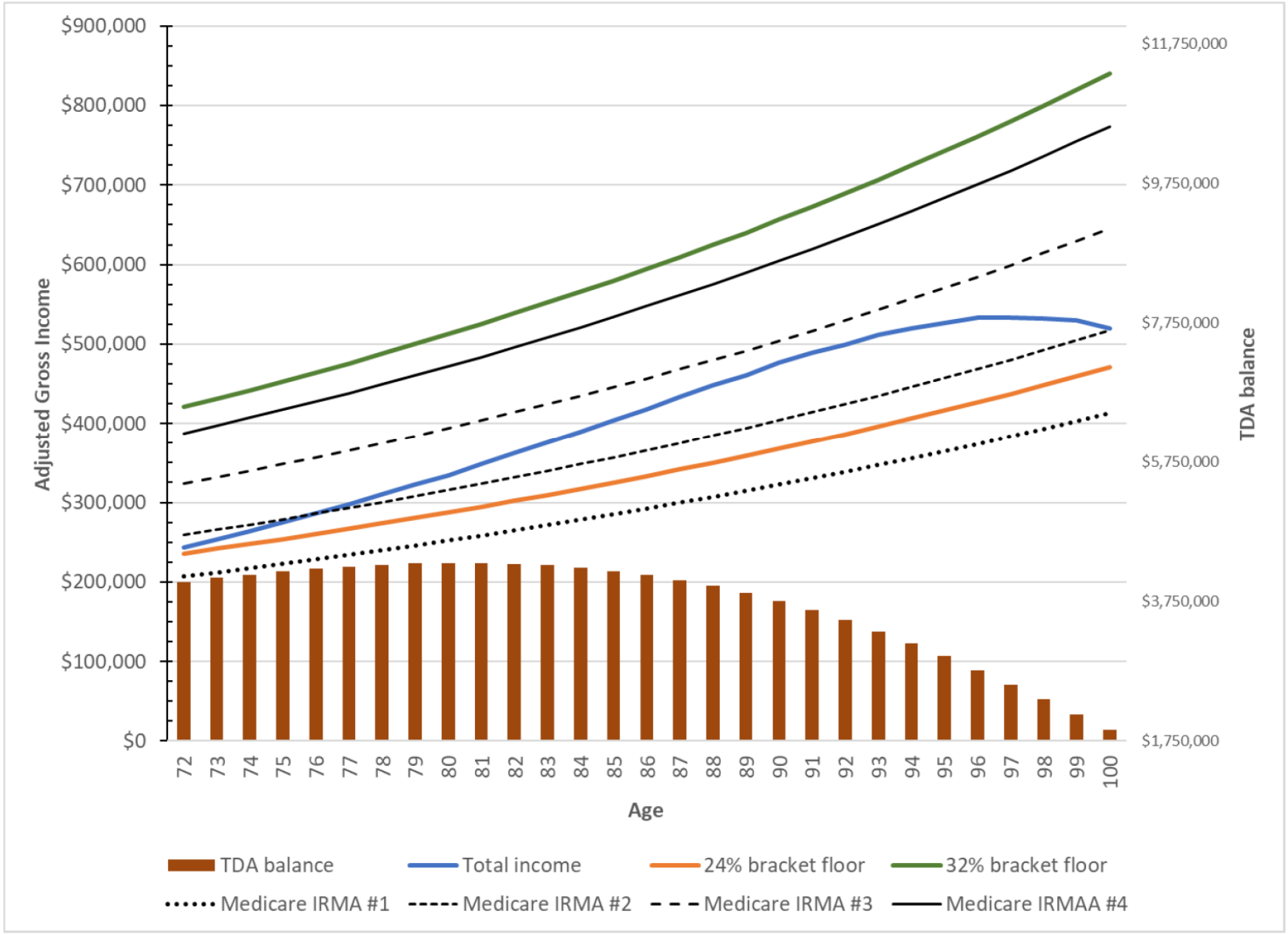
… of course, it's not quite that simple

- Curved nature of RMD income over time
- Implications for IRMAA

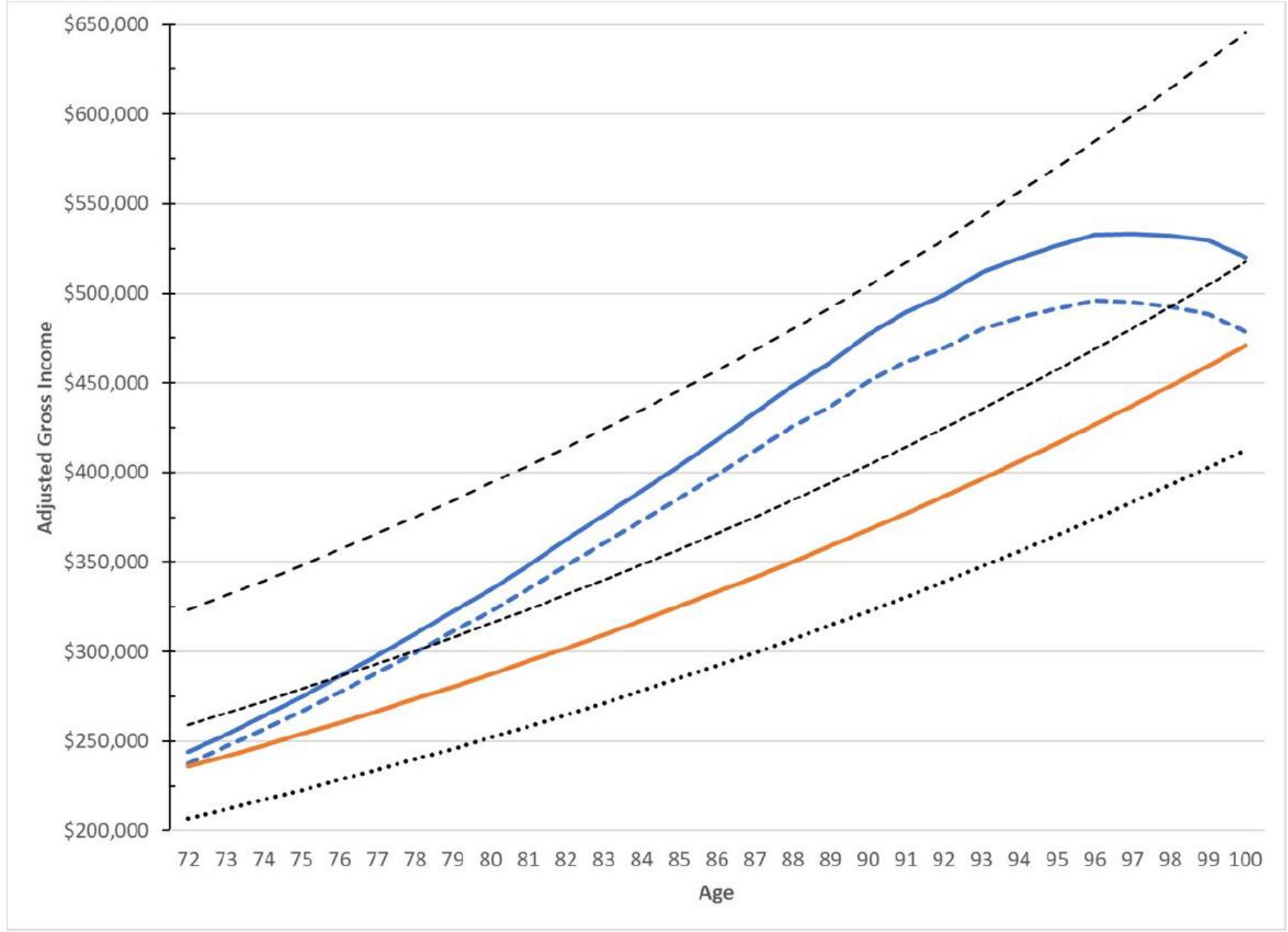
SECTION 3

Notes on RMD income and IRMAA

The Lifetime Shape of Retirement Income Assuming a $4 million TDA Balance with a $100,000 Conversion



Impact of a $100,000 Roth Conversion at Age 65 for an Affluent Professional Couple



IRMAA summary

- More likely to cross IRMAA threshold than move into a higher tax bracket
- A threat to be taken seriously
- And also: a constraint on Roth conversions made at age 63 and later.

Polling Question #2

The five IRMAA brackets map onto the MFJ income tax brackets as follows:

a) The first two hit within the 22% bracket, the next two in the 24% bracket, and the 5th not until the 37% bracket

b) The first IRMAA hits at the 22% bracket, the 2nd at the 24% bracket, the 3rd at the 32% bracket, the 4th at the 35% bracket, and the 5th at the 37% bracket.

c) The first four hit within the 24% bracket, and the fifth hits in the 32% bracket.

d) The middle three hit within the 24% bracket

SECTION 4

The spreadsheet analysis

The spreadsheet is designed to show:

- Roth conversions *can* pay, even at a constant tax rate
  - And not only because of IRMAA postponement
  - In fact, they can pay even if future tax rates move somewhat ***lower***
  - And interestingly, the payoff, over longer time horizons, is not that much greater if future tax rates move ***higher***

To Evaluate Conversion Outcomes Requires a Counterfactual

- Counterfactual: the wealth that would have been achieved from the $100,000 in the TDA if it had *not* been converted
- Two parts:
  - The unconverted TDA dollars, with appreciation, after debiting RMDs to that point, and evaluated **after tax**
  - The reinvested after-tax portion of the RMDs, with subsequent after-tax appreciation, evaluated using cost basis if appropriate
- To be compared to the Roth accumulation, beginning with the after-tax initial value, and otherwise un-debited (=case #1, tax paid from the conversion)

Spreadsheet preview

- Key insight: You have to take the RMD. But you don't have to spend it.
- Unspent RMDs after tax debit to be reinvested in a taxable account
- Tax drag in that account will at first slowly, and then quickly, redound to the benefit of the Roth conversion
- Allowing for a payoff despite constant tax rates
- With a goose from forestalled IRMAA

Side note:
[Different spreadsheet than the paper]

- Worked out in painful detail in this thread:
  https://www.bogleheads.org/forum/viewtopic.php?t=358688
- This version:
  - most of TDA wealth is "off-camera," invested in some reasonably conservative balanced fund, with total income, all sources, sufficient to remain in the 24% bracket throughout
  - Only the funds that could have been converted are "on camera."
  - Examines the payoff from a single conversion of $100,000, made at age 71, just in time to reduce the first year's RMD
  - Tax at 15% on the 10% return earned annually on the reinvested RMDs
  - SS allows many other permutations, several to be discussed later.

Excel transition

- Downloadable here: edwardfmcquarrie.com
- Explain structure
- Work through a series of cases

B	C	D	E	F	G	H	I	J	K	L	M	N	O
			Tax rate 1 (conversion):	24%	Tax rate 2 (evaluation):	24%	Roth & Taxable ret:	10%	Taxable tax rate	15%	inflation:	3%	TDA return rate
age	*RMD divisor*	*Start of year TDA balance*	*TDA with appreciation before RMD*	*RMD*	*End of year TDA balance (after RMD)*	*Tax on RMD*	*Addition to taxable account*	*Taxable gain + dividend (pre-tax)*	*Tax on cap gain & div*	*Taxable value end year*	*Roth balance (TDA debited by Tax1)*	*After tax balance of TDA+taxable*	*Roth surplus*
		=lagged G		= lagged G / C	= E - F	= F * H1	= F + H	=lagged L * J1	=J* L1	=lagged L + I + J + K	=lagged M * J1	= [(1 - H1) * G] + L	=M - N
71					$100,000						76,000		
72	27.4	$100,000	$110,000	$3,650	$106,350	($875.91)	$2,774			$2,774	83,600	83,600	0
73	26.5	$106,350	$116,985	$4,013	$112,972	($963.17)	$3,050	$277	($41.61)	$6,060	91,960	91,918	41.61
74	25.5	$112,972	$124,269	$4,430	$119,839	($1,063.27)	$3,367	$606	($90.89)	$9,942	101,156	101,019	136.66
75	24.6	$119,839	$131,823	$4,872	$126,952	($1,169.16)	$3,702	$994	($149.12)	$14,489	111,272	110,972	299.45
76	23.7	$126,952	$139,647	$5,357	$134,290	($1,285.59)	$4,071	$1,449	($217.33)	$19,792	122,399	121,852	546.73
77	22.9	$134,290	$147,719	$5,864	$141,855	($1,407.41)	$4,457	$1,979	($296.87)	$25,931	134,639	133,740	898.28
78	22	$141,855	$156,040	$6,448	$149,592	($1,547.51)	$4,900	$2,593	($388.96)	$33,035	148,102	146,725	1,377.06
79	21.1	$149,592	$164,552	$7,090	$157,462	($1,701.53)	$5,388	$3,304	($495.53)	$41,231	162,913	160,902	2,010.30
80	20.2	$157,462	$173,208	$7,795	$165,413	($1,871)	$5,924	$4,123	($618)	$50,660	179,204	176,374	2,830
81	19.4	$165,413	$181,954	$8,526	$173,428	($2,046)	$6,480	$5,066	($760)	$61,447	197,124	193,252	3,873
82	18.5	$173,428	$190,771	$9,374	$181,396	($2,250)	$7,125	$6,145	($922)	$73,794	216,837	211,655	5,182
83	17.7	$181,396	$199,536	$10,248	$189,287	($2,460)	$7,789	$7,379	($1,107)	$87,855	238,521	231,714	6,807
84	16.8	$189,287	$208,216	$11,267	$196,949	($2,704)	$8,563	$8,786	($1,318)	$103,886	262,373	253,567	8,805

SECTION 5

Summary and conclusions

Polling Question #3

Which of the following best develops the implications of this claim: "For the mass affluent, Roth conversions are a game played at the margin."

a) For the mass affluent, there is little to be gained from Roth conversions

b) Roth conversions are like mortgage prepayments: the ultimate gain can be substantial in dollar terms, but gains start small and take a long time to mount up

c) The profit margin on a Roth conversion will be large

d) Roth conversions are a marginal endeavor: they might work out, they might not, it's always a toss up, hostage to market returns and tax law changes.

Conclusion #1

- The engine that powers Roth conversion payoffs is ***compounded tax drag***
- Compounding takes time
- As with any exponential process, payoffs start small and only grow large after many, many years

Conclusion #2

- The longer the planning horizon, the greater the expected pay off from Roth conversions
  a) Money intended for heirs has a horizon +10 years
  b) Conversions made in the 50s rather than the 60s might add 10 years
  c) Compounding over 40 or 50 years, instead of 30 years, is huge
- Therefore the best case, for mass affluent Roth conversions:
  - Conversions performed earlier & intended solely for heirs

Conclusion #3

- Planning horizon trumps tax rate differences
  - Tax rate differences of 2% to 4% (e.g., convert at 24% to save, oops, RMDs taxed at only 22%) are easily overcome within most planning horizons
  - Seriously bad guesses (convert at 32% to save 22% on RMDs) can be overcome, but require planning horizons of >20 years (into the 90s or more)
  - Conversely, small movements up in future rates (TCJA holds, and 22% → 25%, 37% → 39.6%, etc.) add only modestly to Roth conversion outcomes; the big payoff comes from compounding tax drag
  - And compounding takes time

Conclusion #4

- It takes a big gap between present and future tax rates to meaningfully supplement the impact of compounding tax drag
  - If you have been in the 24% bracket and expect to stay there, and this one year, can convert at 0%--do it!
  - Same, for a conversion at 10% or 12%
  - But if you had routinely been in the 37% bracket, and this one year can convert at 32%--sure, why not, but don't get your hopes up: 37% → 37% would have worked well enough
  - And if you are routinely in the 24% bracket, and can convert at 22% this year, but only by triggering IRMAA #1, yeah, it will work out, probably, over the long term, inch by inch

Conclusion #5

- Paying tax from outside the conversion is generally a good idea
  - Especially over longer time frames
  - And when less tax efficient investments can be liquidated to pay that tax (higher dividends, balanced fund with ordinary income component, mutual fund with lumpy distributions)
- But if the tax payment could have been put in a Total Stock Market Index ETF, bought and held until step up at death, with a dividend yield of 1.25% taxed at 15% … don't expect much incremental advantage from paying tax outside

Updated conventional wisdom

- Roth conversions will almost always pay off for the mass affluent client with a very long planning horizon
- If the planner guesses correctly that future tax rates will go up, this will give a modest *boost* to conversion outcomes
- If the planner guesses wrong and future rates move a few points lower, this will modestly *retard* conversion outcomes
- And if tax rates stay constant, the conversion will do just fine … for those clients who have the requisite patience