A Case Study on the Effects of a Financial Transaction Tax on Savers in Virginia

October 2020

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Overview

Virginia has a population of 8.54 million people and is the 12th largest state by population in the United States. Investors in Virginia participate in the stock market, through pension funds such as the Virginia Retirement System (VRS), 529 plans, ABLE plan such as Virginia ABLEnow and through individual retirement accounts (IRAs) and 401(k)s.

There are various proposals pending for a financial transaction tax (FTT) in the U.S., and the following is an analysis of the projected FTT impact on holders of public pension plans, 529 College Savings plans, individual investors and 401(k) plans, among others. The following is an analysis of the projected impact of a "Type 1" tax on trading (50 basis point equities, 10 basis points bonds, .5 basis point derivatives); "Type 2" tax on trading (10 basis point equities, 10 basis points bonds, 10 basis point derivatives); and "Type 3" tax on trading (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing).

Key Findings

The below charts highlight the startling costs that a FTT would pose to residents of Virginia:

FTT Impact on Virginia Retirement System (VRS) Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 8.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 8.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	$139.15 million	$6.37 billion	$15.76 billion
TYPE 2 (10 basis points on equities, bonds and derivatives)	$40.65 million	$1.86 billion	$4.61 billion
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	N/A	N/A	$3.90 billion

FTT Impact on Virginia 529 Plan Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	$9 million	$0.35 billion	$0.75 billion
TYPE 2 (10 basis points on equities, bonds and derivatives)	$3 million	$0.13 billion	$0.13 billion

FTT Impact on ABLEnow Plan Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	$0.03 million	$1.13 million	$2.43 billion
TYPE 2 (10 basis points on equities, bonds and derivatives)	$0.01 million	$0.36 billion	$0.78 million

FTT Impact on the Individual Investor in Virginia:

TYPE OF FTT	YEARLY PROJECTED BURDEN PER INDIVIDUAL	OVER 40 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)

TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	$157.50	$24,375.01
TYPE 2 (10 basis points on equities, bonds and derivatives)	$56.70	$8.775.00
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	$11.34 in Year 1 rising to $56.70 by Year 5	$7,735.17

I. Pension Fund Analysis

The following is a case study on the projected impact a financial transaction tax would have on the Virginia Retirement System (VRS) based on recent financial transaction tax ("FTT") proposals, including (1) a FTT of 50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives; (2) a FTT of 10 basis points across asset classes on equities, bonds and derivatives; and (3) a FTT of 2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing.

The VRS was founded in 1942 in order to deliver retirement and other benefits to covered Virginia public sector employees through sound financial stewardship and superior customer service. Under the plan, participants receive a cost of living adjustment based on the inflation rate (CPI) last year. There are 723,011[1] participants currently enrolled in the VRS.

An examination of the most recent 2019 Annual Report[2] indicates that VRS has an AUM of $85.4 billion, of which 40.0% are invested in public equities, 16.0% in fixed income, 13.2% in real estate, 12.1% in private equity, 18.5% in alternative investments and 0.2% in cash and equivalents. There are no derivatives investments listed on the annual report.

For the purpose of this calculation, it is estimated that VRS has a turnover rate of 0.72 for public equities, 1.17 for fixed income and 0.95 for derivatives. Calculations of the projected FTT are based on this notional value of the portfolio based on such turnover rates, rather than the assets under management. Additionally, the turnover was modeled after publicly available information on average pension fund turnover rates.

FTT Impact on Virginia Retirement System (VRS) Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 8.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 8.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	$139.15 million	$6.37 billion	$15.76 billion

[1] *2019 Popular Annual report*. (2019). Virginia Retirement System. https://www.varetire.org/pdf/publications/2019-popular-annual-report.pdf

[2] *2019 Annual Comprehensive Report*. (2019, December 13). Virginia Retirement System. https://www.varetire.org/pdf/publications/2019-annual-report.pdf

TYPE 2 (10 basis points on equities, bonds and derivatives)	$40.65 million	$1.86 billion	$4.61 billion
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	N/A	N/A	$3.90 billion

Notably, this example does not take into account "widened spreads" and "deadweight loss" which would also result in increased transaction costs for the pension fund portfolio.

II. 529 Plan Analysis

The following is a case study on the projected impact a FTT would have on Virginia 529 College Savings plans based on recent financial transaction tax ("FTT") proposals, including (1) a FTT of 50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives; and (2) a FTT of 10 basis points across asset classes on equities, bonds and derivatives.

The Virginia 529 Plan was founded to encourage saving for future education costs and is authorized by Section 529 of the Internal Revenue Code as a tax-advantaged saving plan. Overall, in the United States, over 44% of parents utilize 529 plans to save for college[3]. There are 364,119 participants currently in the Virginia 529 Plan,. Notably in 2018, Morningstar gave Virginia's Invest529 plan a "Gold" rating[4].

An examination of the most recent 2019 report[5] indicates that the Virginia 529 Plan has an AUM of $5.11 billion, of which 44% are invested in equities and 56% are in bonds. There are no derivatives or cash equivalents noted in the report.

For the purpose of this calculation, it is estimated that Virginia 529 Plan has a turnover rate of 0.67 for equities, 0.67 for bonds and 0.67 for derivatives. Calculations of the projected FTT are based on this notional value of the portfolio based on such turnover rate, rather that the assets under management, Additionally, the turnover was modeled after publicly available information on average Virginia 529 Plan turnover rates.

FTT Impact on Virginia 529 Plan Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on	$9 million	$0.35 billion	$0.75 billion

[3] https://www.moneyconfidentkids.com/content/mck/news-and-research/news/parents-are-less-stressed-about-college-costs.html

[4] *Virginia529 program gets Morningstar analyst rating of gold for third year running*. (2018, November). Virginia529 | 529 Plans to Help College Savers Dream, Save and Achieve. https://www.virginia529.com/newsroom/virginia529-program-gets-morningstar-analyst-rating-of-gold-for-third-year-running/

[5] *2019 Annual report*. (n.d.). Virginia529 | 529 Plans to Help College Savers Dream, Save and Achieve. https://www.virginia529.com/uploads/files/2019_Annual_Audited_Financial_Statements.pdf?v=1574458988

bonds, and 0.5 basis points on derivatives)			
TYPE 2 (10 basis points on equities, bonds and derivatives)	$3 million	$0.13 billion	$0.13 billion

Assuming that the average in-state tuition for Virginia public universities is $18,329 per student, the impact of the "Type 1" FTT would equal full in-state yearly tuition for 561 students while the impact of the "Type 2" FTT would equal full in-state yearly tuition for 203 students.

Notably, the impact of a FTT on a "target date" fund would be substantial and multi-layered, given the number of transactions utilized for such funds.

Further, this example does not consider "widened spreads" and "deadweight loss" which would also result in increased transaction costs for the Virginia 529 Plan.

III. ABLE Plan Analysis

The following is a case study on the projected impact a financial transaction tax would have on Virginia ABLEnow Plan participants based on recent financial transaction tax proposals, including (1) a FTT of 50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives; and (2) a FTT of 10 basis points across asset classes on equities, bonds and derivatives.

The ABLEnow Plan, a type of 529A account, was founded in 2015 to allow individuals with disabilities and their families a tax-advantaged way to save money for disability-related expenses on behalf of the account's designated beneficiary. There are 3,368 participants currently in the ABLEnow Plan. ABLEnow is administered by the Virginia 529 and an independent Virginia state agency that manages the nation's largest college savings plan.

An examination of the most recent 2019 report[6] indicates that ABLEnow Plan has an AUM of $19.54 million, of which 40% are invested in equities, 35% are in bonds and 25% are in cash equivalents. There are no derivatives investments disclosed in the report.

For the purpose of this calculation, it is estimated that the ABLEnow Plan has a turnover rate of 0.67 for equities, 0.67 for bonds and 0.67 for derivatives. Calculations of the projected FTT are based on this notional value of the portfolio based on such turnover rate, rather that the assets under management. Additionally, the turnover was modeled after publicly available information on average ABLEnow Plan turnover rates.[7]

FTT Impact on ABLEnow Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	$ 0.03 million	$ 1.13 million	$ 2.43 billion
TYPE 2 (10 basis points on equities,			

[6] *2019 Annual report*. (n.d.). Virginia529 | 529 Plans to Help College Savers Dream, Save and Achieve. https://www.virginia529.com/uploads/files/2019_Annual_Audited_Financial_Statements.pdf?v=1574458988

[7] The turnover rate was modeled after the range of average rates of turnover of 0.67, among other ABLE funds with more detailed monthly accounting of transactions on the annual reports.

bonds and derivatives)	$ 0.01 million	$ 0.36 billion	$ 0.78 million

Notably, this example does not consider "widened spreads" and "deadweight loss" which would also result in increased transaction costs for the ABLEnow Plan.

IV. Individual Investor/401k Analysis

The following is a case study on the projected impact of a financial transaction tax on individual and 401(k) investors in Virginia based on recent financial transaction tax proposals, including (1) a FTT of 50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives; (2) a FTT of 10 basis points across asset classes on equities, bonds and derivatives; and (3) a FTT of 2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing.

An examination of a "typical" 401(k) portfolio and individual savings mutual fund indicates the allocation of assets that individual investors are utilizing includes 40% invested in equities, 50% in bonds and 10% in cash equivalents.

For the purpose of this calculation, it is estimated that the individual investor has $100,000 invested in a mutual fund over 40 years, with an estimated growth rate of 6% a year. The turnover rate of 0.63 was modeled after publicly available information from Morningstar on average rates. Notably, turnover rates can vary widely, as high as 800% for some mutual funds and as low as 10% for some index funds. A conservative rate of 67% was included between these valuations.

FTT Impact on the Individual Investor in Virginia:

TYPE OF FTT	YEARLY PROJECTED BURDEN PER INDIVIDUAL	OVER 40 YEARS (Cumulative cost including compounding interest assuming a growth rate of 6.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	$157.5	$24,375.01
TYPE 2 (10 basis points on equities, bonds and derivatives)	$56.70	$8.775.00
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	$11.34 in Year 1 rising to $56.70 by Year 5	$7,735.17

Further, this example does not consider "widened spreads" and "deadweight loss" which would also result in increased transaction costs for the individual investor in Virginia.

V. Turnover Appendix

For VRS, the turnover rate is 0.72 for public equities, 1.17 for fixed income and 0.95 for derivatives. For Virginia 529, the turnover rate is 0.67 across equities, fixed income and cash and equivalents. For ABLEnow Plan, the turnover rate is 0.67 across equities, fixed income and cash and equivalents. For individual Virginia savers/401(k) plans, the turnover rate is 0.63 across equities, fixed income and cash and equivalents.