



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

Prepared by Kevin Kang, New York University

December 2020

Overview

South Dakota has a [population](#)¹ of 884,659 people. Individuals in South Dakota are invested in the stock market, through pension funds such as South Dakota Retirement System (SDRS), 529 College Savings plans such as South Dakota College Access 529 Plan and individually 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 impact a FTT would have on holders of 401(k) plans, 529 College Savings plans, public pension plans, individual investors, among others. The following is an analysis of projected FTT impact of a “Type 1” tax on trading (50 basis point equities, 10 basis points bonds, 0.5 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

FTT Impact on South Dakota Retirement System (SDRS) Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 4.88% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 4.88% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	\$26.5 million	\$863.7 million	\$1.7 billion
TYPE 2 (10 basis points on equities, bonds, and derivatives)	\$9.36 million	\$305.75 million	\$609.5 million
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$1.87 million	\$238.1 million	\$489.1 million

¹ U.S. Census Bureau QuickFacts: South Dakota. (n.d.). Census Bureau QuickFacts. <https://www.census.gov/quickfacts/fact/table/SD#>



FTT Impact on South Dakota College Access 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 7.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	\$1.49 million	\$20.81 million	\$65.55 million
TYPE 2 (10 basis points on equities, bonds and derivatives)	\$0.858 million	\$11.98 million	\$25.75 million
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$664,000	\$9.01 million	\$19.91 million

FTT Impact on the Individual Investor in California:

TYPE OF FTT	YEARLY PROJECTED BURDEN PER INDIVIDUAL	OVER 40 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	\$1,045	\$41,823
TYPE 2 (10 basis points on equities, bonds and derivatives)	\$247	\$9,881
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$186	\$7,470

I. South Dakota Retirement System Analysis

The following is a case study on the projected impact of a FTT on those participating in the South Dakota Retirement System (SDRS) based on recent financial transaction tax (“FTT”) proposals, including (1) an FTT of 50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives; and (2) an FTT of 10 basis points across asset classes on equities, bonds and derivatives; and (3) a “phased in” FTT starting at 2 basis points in Year 1, 4 basis points in Year 2, 6 basis points in Year 3, 8 basis points in Year 4, and 10 basis points in Year 5 onward.

The South Dakota Retirement System was founded in 1974 to incentivize public school teachers, police, and employees to work in the South Dakota to retain and ensure a high- quality work force. Under the plan, participants receive a cost of living adjustment (COLA) based on whether the pension plan finds COLA affordable or unaffordable. There are currently 89,685 participants in the South Dakota Retirement System.

An examination of the [2019 Annual report](#)² indicates that South Dakota Retirement System has an AUM of \$12.5 billion, of which 47.57% are invested in global equities, 34.89% in fixed income, 8.71% in real estate, 7.79% in private equity, 1.03% in multi strategy funds, and 0.006% in derivatives.

For the purpose of this calculation, it is estimated that the South Dakota Retirement System has a turnover rate of 0.72 for equities, 1.17 for bonds, and 0.95 for derivatives. Calculations of the projected FTT are based on this notional value of the portfolio based on such turnover rate, rather than the assets under management. For the purpose of this case study, the turnover was modeled after publicly available information on average pension fund turnover rates.³

FTT Impact on South Dakota Retirement System (SDRS) Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 4.88% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 4.88% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	\$26.5 million	\$863.7 million	\$1.7 billion
TYPE 2 (10 basis points on equities, bonds, and derivatives)	\$9.36 million	\$305.75 million	\$609.5 million
TYPE 3 (2 basis points across asset classes increasing incrementally over	\$1.87 million	\$238.1 million	\$489.1 million

² Sdrs.sd.gov. 2020. *South Dakota Retirement System*. [online] Available at: <<https://sdrs.sd.gov/docs/CAFR2019.pdf>> [Accessed 3 November 2020].

³ The turnover rate was modeled after the range of average rates of turnover of Calpers among other pension funds with more detailed monthly accounting of transactions on the annual reports.



5 years to 10 basis points ongoing)			
-------------------------------------	--	--	--

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. South Dakota College Access 529 Plan Analysis

The following is a case study on the projected impact of a FTT on those participating in the South Dakota College Access 529 Plan based on recent financial transaction tax (“FTT”) proposals, including (1) an FTT of 50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives; and (2) an FTT of 10 basis points across asset classes on equities, bonds and derivatives; and (3) a “phased in” FTT starting at 2 basis points in Year 1, 4 basis points in Year 2, 6 basis points in Year 3, 8 basis points in Year 4, and 10 basis points in Year 5 onward.

The South Dakota College Access 529 Plan was founded in 2001 with the purpose of encouraging saving for future education costs and is authorized by Section 529 of the Internal Revenue Code as a tax-advantaged savings plan. In the United States, over 44% of parents utilize 529 plans to save for college. There are 17,500 participants currently in the South Dakota College Access 529 Plan.

An examination of the [2019 report](#)⁴ indicates that South Dakota College Access 529 has \$957 million AUM, of which 32.4% is invested in global equity, 7.8% in global emerging markets, 9.1% in investment grade fixed income, 28.8% in cash accounts, 5% in private equity, 7.3% in real estate, 7.7% in PIMCO tax-exempt funds and 8.9% in high yield debt.

For the purpose of this calculation, it is estimated that South Dakota College Access 529 has a turnover rate of 0.3 for equities, and 3.75 for fixed income. Calculations of the projected FTT are based on this notional value of the portfolio based on such turnover rate, rather than the assets under management. For the purpose of this case study, the turnover was modeled after publicly available information on average South Dakota College Access 529 Plan turnover rates.⁵

FTT Impact on South Dakota College Access 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 7.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	\$1.49 million	\$20.81 million	\$65.55 million
TYPE 2 (10 basis points on equities, bonds and derivatives)	\$0.858 million	\$11.98 million	\$25.75 million
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$664,000	\$9.01 million	\$19.91 million

⁴ *Annual Report Fiscal Year 2019*. (n.d.). South Dakota Investment Council. https://sdic.sd.gov/docs/AnnualReport_2019.pdf

⁵ The turnover rate was modeled after the range of average rates of turnover among other pension funds with more detailed monthly accounting of transactions on the annual reports.

Notably, the impact of an 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 for increased transaction costs for the South Dakota College Access 529 Plan.

III. Individual and 401(k) Investors Analysis

The following is a case study on the projected impact on individual and 401(k) investors in South Dakota based on recent financial transaction tax (“FTT”) proposals, including (1) an FTT of 50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives; and (2) an FTT of 10 basis points across asset classes on equities, bonds and derivatives; and (3) a “phased in” FTT starting at 2 basis points in Year 1, 4 basis points in Year 2, 6 basis points in Year 3, 8 basis points in Year 4, and 10 basis points in Year 5 onward.

South Dakota has a [population](#) of 884,659⁶, of which a significant number of individuals are participating in the stock market as a tool for saving for education, retirement, and other life milestones. This is based on a rate of 55% of stock market participation across the United States, according to a Gallup poll last updated in June 2020⁷.

An examination of a “typical” 401(k) portfolio and/or individual mutual fund indicates that individual investors allocate their assets by the following: 80% are in equities, 19% in bonds, 0.05% in derivatives (including options), and 0.01% 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 7% a year. For the purpose of this case study, the turnover rate of 0.63 was modeled after publicly available information from Morningstar on average rates.⁸ 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 50% was included between these valuations.

FTT Impact on the Individual Investor in California:

TYPE OF FTT	YEARLY PROJECTED BURDEN PER INDIVIDUAL	OVER 40 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)
TYPE 1 (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives)	\$1,045	\$41,823
TYPE 2 (10 basis points on equities, bonds and derivatives)	\$247	\$9,881
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$186	\$7,470

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

###

⁶ U.S. Census Bureau QuickFacts: South Dakota. (n.d.). Census Bureau QuickFacts. <https://www.census.gov/quickfacts/fact/table/SD#>

⁷ <https://news.gallup.com/poll/266807/percentage-americans-owns-stock.aspx>

⁸ 63% from Morningstar. <https://www.investopedia.com/articles/mutualfund/09/mutual-fund-turnover-rate.asp>