



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

Prepared by Shereen Tang, University of Michigan

January 2021

Overview

Nevada has a [population](#) of 3.08 million people¹. Individuals in Nevada are invested in the stock market through pension funds such as Nevada PERS (Public Employees' Retirement System) fund, 529 plans such as the Nevada 529 College Savings Plan, ABLE plan such as ABLE Nevada and individually through individual retirement accounts (IRA's) and 401(k)s.

There are various proposals pending in Congress for a financial transaction tax (FTT). 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 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives); "Type 2" tax on trading (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives); and a "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 Nevada Public Employees Retirement System:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.50% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.50% per year)
TYPE 1 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$123.53 million	\$525 million	\$1.082 billion
TYPE 2 (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$35.08 million	\$149 million	\$307 million
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$7.54 million	N/A	\$307.41 million

¹ U.S. Census Bureau QuickFacts: Nevada. (n.d.). Census Bureau QuickFacts. <https://www.census.gov/quickfacts/NV>

FTT Impact on Nevada 529 Plan Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)
TYPE 1 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$9.76 million or in state tuition for 1,947 students per year	\$465.89 million	\$1.061 billion
TYPE 2 (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$8.05 million or in state tuition for 1,606 students per year	\$384.27 million	\$874.92 million

FTT Impact on ABLE Nevada Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)
TYPE 1 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$895.50	\$1761.59	\$3465.32
TYPE 2 (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$433.50	\$852.75	\$1677.49

FTT Impact on the Individual Investor in Nevada

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 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$51.80	\$11,886
TYPE 2 (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$15.76	\$3,657
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$3	\$2977

I. Nevada Public Employees' Retirement System

The following is a case study on the projected impact on Nevada Public Employees' Retirement System (PERS) based on recent financial transaction tax ("FTT") proposals. The Public Employees' Retirement System of Nevada was founded in 1947 with the purpose of incentivizing public police officers, firefighters, and other public employees to work in Nevada and this pension fund has been a valuable tool in retaining employees and ensuring a high-quality workforce. Under the plan, participants receive a cost of living adjustment based on the inflation rate (CPI) last year. There are currently 196,564 participants in the Nevada PERS. Notably, the Nevada PERS fund has received the Public Pension Standards Award for Funding and Administration 2019.

An examination of the most recent [report](#)² indicates that Nevada PERS fund has \$43,973.74 million, assets under management of which 69.84% are in equities, 25.21% are in bonds, 0% are in derivatives (including options) and 4.95% are in real estate, oil, etc.

For the purposes of this calculation, it is estimated that the Nevada PERS fund 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 (AUM) For purposes of this case study, the turnover was modeled after publicly available information on average pension fund turnover rates.³

FTT Impact on Nevada Public Employees Retirement System:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.50% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.50% per year)
TYPE 1 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$123.53 million	\$525 million	\$1.082 billion
TYPE 2 (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$35.08 million	\$149 million	\$307 million
TYPE 3 (2 basis points across asset classes increasing incrementally over 5	\$7.54 million	N/A	\$307.41 million

² Comprehensive Annual Financial Report. (2019). PERS NVPERS. <https://www.nvpers.org/sites/default/files/2020-01/FY19CAFR.pdf>

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.

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

Notably, this example does not take into account “widened Spreads” and “deadweight loss” which would also result in an increased transaction cost for the pension fund portfolio.

II. Nevada 529 College Savings Plan

The following is a case study on the projected impact on Nevada 529 College Savings Plan from recent FTT proposals. The Nevada 529 College Savings Plan was founded in 1997 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 saving plan. Overall, in the United States, over 44% of parents utilize 529 plans to save for college. Nevada offers five college savings plans with The Vanguard 529 College Savings Plan being the dominant plan. As of December 31, 2019, there are 905,434 participants⁵ in the Nevada 529 College Savings Plan with the total assets in 529 Plans reaching over \$29 billion.

In 2017, Nevada’s Vanguard 529 Plan received an [overall rating](#) of “Silver” from Morningstar⁴, a leading provider of independent investment research in North America, Europe, Australia, and Asia.

An examination of the most recent [report](#)⁵ indicates that Nevada 529 College Savings Plan has \$29.06 billion assets under management, of which 36.67% are in equities, 50.53% are in bonds, and 12.5% are in cash equivalents.⁶

For the purposes of this calculation, it is estimated that the turnover rate is 4%-13% for equity index funds, 27%-33% for equity mutual funds, 26%-66% for fixed income index funds, and 350%-400% for fixed income mutual funds. 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 purposes of this case study, the turnover was modeled after publicly available information on average Nevada 529 College Savings Plan turnover rates.⁷

FTT Impact on Nevada 529 Plan Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)
TYPE 1 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$9.76 million or in state tuition for 1,947 students per year	\$465.89 million	\$1.061 billion
TYPE 2 (50 basis points on equities, 10 basis			

⁴ *Rating the top 529 college savings plans.* (2019, October 22). Morningstar, Inc. <https://www.morningstar.com/articles/950079/rating-the-top-529-college-savings-plans>

⁵ *Annual Report.* (2019). Nevada Treasury. https://www.nevadatreasurer.gov/uploadedFiles/nevadatreasurer.gov/content/PublicInfo/Annual_Reports/STO-FY19%20Annual%20Report.pdf

⁶ The distribution of assets for Nevada 529 College Savings Plans is assumed to be the same as the Vanguard 529 Saving Plan. The assets are assumed to be equally invested in each Age-based Options. The individual portfolios are not counted as they represent a relatively small percentage.

⁷ Check citations for annual reports containing turnover of funds used in Nevada 529 Plans

points on bonds, 0.5 basis points on derivatives)	\$8.05 million or in state tuition for 1,606 students per year	\$384.27 million	\$874.92 million
---	--	------------------	------------------

In the past 10 years, the annual growth rate of savings accounts is 4.1% and the annual growth rate of total assets in 529 Plan is 17.8%. In our calculation, the annual growth rate of savings accounts and the annual growth rate of total assets are not included. In reality, the total cost of FTT could be even higher.

In the past 10 years, the annual growth rate of the average account size of 529 plans is 9.8%. In our calculation, the annual growth rate of the average account size of 529 plans is not included. In reality, the tax burden on an individual level could be even heavier.

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. The costs associated with FTTs would be passed on to everyday Americans saving for a child’s education. The result would be unintended damage to everyday families saving for higher education. According to Vanguard’s estimates, a seemingly small FTT of 10 basis points would have cost U.S. mutual fund and ETF investors more than \$20 billion in 2019. Over the next ten years, a 10-basis-point FTT could reduce American mutual fund investors’ aggregate wealth by as much as \$320 billion. To be clear, Vanguard’s estimates of the annual reductions in mutual fund and ETF returns due to FTTs are seen as the minimum expected impact.

Further, this example does not consider “widened Spreads” and “deadweight loss” which would also result in an increased transaction cost for the pension fund portfolio.

III. Nevada ABLE Plan

The following is a case study on the projected impact on the Nevada ABLE plan based on recent financial transaction tax (“FTT”) proposals. The ABLE Nevada, a type of 529A account, was founded in 2017 with the purpose of allowing individuals with disabilities and their families a tax-advantaged way to save money for disability-related expenses of the account's designated beneficiary. As of June 30, 2019, there were 651 participants in the ABLE Nevada.

An examination of the 2019 [report](#)⁵ indicates that ABLE Nevada has \$3.042 million assets under management⁸, of which 51.67% are in equities, 34.17% are in bonds, and 14.17% are in cash equivalents.

For the purposes of this calculation, it is estimated that the turnover rate is 4%-13% for equity index funds, 27%-33% for equity mutual funds, 26%-66% for fixed income index funds, and 350%-400% for fixed income mutual funds. 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 purposes of this case study, the turnover was modeled after publicly available information on average ABLE Nevada turnover rates.⁹

FTT Impact on ABLE Nevada Participants:

TYPE OF FTT	YEARLY PROJECTED BURDEN	20 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)	30 YEARS (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)
TYPE 1 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$895.50	\$1761.59	\$3465.32
TYPE 2 (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$433.50	\$852.75	\$1677.49

Notably, this example does not take into account “widened spreads” and “deadweight loss” which would also result in an increased transaction cost for the Nevada ABLE plan.

⁸ Assume the AUM for 2019 is tripled compared to the AUM for 2018 as the number of accounts tripled. The AUM for 2018 is 1.018 million dollars.

⁹ The turnover rate was modeled after the turnover rates of funds in which ABLE plan accounts are invested. Check citation for links to annual reports of the funds.

IV. Individual Investors

The following is a case study on the projected impact on individual and 401(k) investors in Nevada based on recent financial transaction tax (“FTT”) proposals. Nevada has an estimated 1694 thousand individuals who are investing in the stock market as a means to save education, retirement, and other savings goals. 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 2020¹⁰.

An examination of a “typical” 401(k) portfolio indicates that individual investors¹¹ on average have invested in—67.4% in equities, 26.4% in bonds, 6.2% in derivatives (including options) and cash equivalents.

For the purposes 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. Notably, turnover rates can vary widely as high as 400% for some mutual funds and as low as 3% for some index funds. For the purposes of this study case, it is estimated that the turnover rate is 12% for equity funds, 35% for fixed income funds, and 18% for mixed funds. The 401(k) asset-weighted average portfolio turnover rate is 22%, a conservative rate which includes between these valuations.

FTT Impact on the Individual Investor in Nevada

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 (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$51.80	\$11,886
TYPE 2 (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$15.76	\$3,657
TYPE 3 (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$3	\$2977

¹⁰ <https://news.gallup.com/poll/266807/percentage-americans-owns-stock.aspx>.

¹¹ Assume the individual investor at age of 20-30 and have about 40 years remaining before retirement.

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

Additionally, for those invested in a 401(k) qualified retirement plans, the tax would apply under all three of the taxes to accounts that were designed to be eligible for tax benefits under IRS guidelines.

###