



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

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## Overview

Tennessee has a [population](#) of 6.8 million<sup>1</sup> people and has one of the most successful pension funds in the United States. The pension fund has been awarded Certificate of Achievement for Excellence in Financial Reporting by the GFOA. Individuals in Tennessee are invested in the stock market through pension funds such as Tennessee Consolidated Retirement System (TCRS), 529 plans such as TN Stars, ABLE plans such as ABLE TN, and individually through individual retirement s accounts (IRAs) and 401(k)s.

There are various proposals pending for a financial transaction tax (FTT) in Congress 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 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 “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 the Tennessee Consolidated 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)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$75.43 million	\$3.26 billion	\$7.8 billion
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$29.05 million	\$1.25 billion	\$3 billion
<b>TYPE 3</b> (2 basis points across asset classes increasing	\$5.8 million	\$1.19 billion	\$2.94 billion

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



incrementally over 5 years to 10 basis points ongoing)			
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**FTT Impact on TN Stars 529 Plan Participants:**

<b>TYPE OF FTT</b>	<b>YEARLY PROJECTED BURDEN</b>	<b>20 YEARS</b> (Cumulative cost including compounding interest assuming a growth rate of 5.00% per year)	<b>30 YEARS</b> (Cumulative cost including compounding interest assuming a growth rate of 5.00% per year)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$79,000 or in state tuition for 75 students per year	\$22.5 million	\$60.75 million
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$30,000 or in state tuition for 20 students per year	\$6.17 million	\$16.43 million
<b>TYPE 3"</b> (2 basis points on equities, bonds and derivatives in Year 1 increasing linearly to 10 basis points by Year 5)	\$6,000 or in state tuition for 13 students per year	\$3.96 million	\$11.88 million

**FTT Impact on ABL Tennessee Participants:**

<b>TYPE OF FTT</b>	<b>YEARLY PROJECTED BURDEN</b>	<b>20 YEARS</b> (Cumulative cost including compounding interest assuming a	<b>30 YEARS</b> (Cumulative cost including compounding interest assuming a



		growth rate of 5.00% per year)	growth rate of 5.00% per year)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$5,458	\$3.05 million	\$8.38 million
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$2,369	\$811,450	\$2.2 million
<b>TYPE 3</b> (2 basis points on equities, bonds and derivatives, increasing by 2 basis points a year to 10 basis points)	\$474	\$503,014	\$1.56 million

**FTT Impact on the Individual Investor in Tennessee**

<b>TYPE OF FTT</b>	<b>YEARLY PROJECTED BURDEN PER INDIVIDUAL</b>	<b>OVER 40 YEARS</b> (Cumulative cost including compounding interest assuming a growth rate of 7.00% per year)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$1.08 billion	\$672.63 billion
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis	\$240.2 million	\$577 billion



points on derivatives)		
<b>TYPE 3</b> (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$47.58 million	\$566.70 billion

## I. Tennessee Consolidated Retirement System (TCRS)

The Tennessee Consolidated Retirement System (TCRS) was founded in 1972 with the purpose of incentivizing public teachers and state employees to work in the state of Tennessee 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 553,404 participants<sup>2</sup> currently in the TCRS. For the last 31 years, TCRS has been awarded Certificate of Achievement for Excellence in Financial Reporting by the GFOA<sup>2</sup>. It is one of the most successful pension funds in the U.S. with the minimum funded ratio for one of its constituent funds to be 90.26% and the maximum to be 132.39%.

An examination of the 2019 [Annual report](#)<sup>2</sup> indicates that TCRS has an AUM of \$52 billion, of which 31% are in US equities, 20% are in US fixed income, \$244,016 are in derivatives (including options), and the rest divided into real estate(10%), private equity (10%) and international markets (18%).

For the purposes of this calculation, it is estimated that TCRS 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 purposes of this case study, the turnover was modeled after publicly available information on average pension fund turnover rates.

### FTT Impact on the Tennessee Consolidated 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)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$75.43 million	\$3.26 billion	\$7.8 billion
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$29.05 million	\$1.25 billion	\$3 billion

<sup>2</sup> *Comprehensive Annual Financial Report*. (2019). Tennessee Department of Treasury—College Savings, Unclaimed Property, Retirement, Financial Education. [https://treasury.tn.gov/Portals/0/Documents/Retirement/CAFR%20Reports/2019/2019%20CAFR\\_Full%20Report.pdf](https://treasury.tn.gov/Portals/0/Documents/Retirement/CAFR%20Reports/2019/2019%20CAFR_Full%20Report.pdf)



<b>TYPE 3</b> (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing)	\$5.8 million	\$1.19 billion	\$2.94 billion
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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. TN Stars 529 plan

The TN Stars 529 plan was founded in 2012 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.

An examination of the most recent [Annual Report](#)<sup>3</sup> indicates that TN Stars 529 Plan has \$160 million, of which about 67% are in equities, 27% are in bonds, and 6% are in cash equivalents.

For the purposes of this calculation, it is estimated that TN Stars has an average turnover rate of 10% for equities, and 84.6% for bonds. 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 extracted from the annual reports of the funds in which the TN Stars portfolios are invested.

### **FTT Impact on TN Stars 529 Plan Participants:**

<b>TYPE OF FTT</b>	<b>YEARLY PROJECTED BURDEN</b>	<b>20 YEARS</b> (Cumulative cost including compounding interest assuming a growth rate of 5.00% per year)	<b>30 YEARS</b> (Cumulative cost including compounding interest assuming a growth rate of 5.00% per year)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$79,000 or in state tuition for 75 students per year	\$22.5 million	\$60.75 million
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$30,000 or in state tuition for 20 students per year	\$6.17 million	\$16.43 million
<b>TYPE 3</b> (2 basis points on equities, bonds and derivatives in Year 1 increasing linearly to 10)	\$6,000 or in state tuition for 13 students per year	\$3.96 million	\$11.88 million

<sup>3</sup> *Independent Auditor's Report*. (2019). Tennessee Department of Treasury—College Savings, Unclaimed Property, Retirement, Financial Education. <https://treasury.tn.gov/Portals/0/Documents/Annual%20Reports/Financial%20Statements/2019/TNStarsFinancialStatement2019.pdf>





basis points by Year 5)			
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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. Tennessee offers an age-based plan in which the investments are adjusted according to the age of the child. For an individual investing \$5,000 every year for 18 years in the age-based plan, he would stand out to lose \$727 due to the impact of FTT type 1. The above calculation did not take into consideration the investment risks posed by the markets which would further erode the final value of the portfolio.

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

### III. ABLE TN

The ABLE TN, a type of 529A account, was founded in 2015 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.

An examination of the 2019 [report](#)<sup>4</sup> indicates that ABLE TN has \$15.5 million assets under management, of which 53% are in equities, 19.6% are in bonds, and 27.4% are in cash equivalents.

For the purposes of this calculation, it is estimated that ABLE TN has an average turnover rate of 67% for equities, and 146% for bonds. 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 recent turnover rates of the funds in which the ABLE TN portfolios are invested.<sup>5</sup>

#### **FTT Impact on ABLE Tennessee Participants:**

<b>TYPE OF FTT</b>	<b>YEARLY PROJECTED BURDEN</b>	<b>20 YEARS</b> (Cumulative cost including compounding interest assuming a growth rate of 5.00% per year)	<b>30 YEARS</b> (Cumulative cost including compounding interest assuming a growth rate of 5.00% per year)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$5,458	\$3.05 million	\$8.38 million
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$2,369	\$811,450	\$2.2 million
<b>TYPE 3</b> (2 basis points on equities, bonds and derivatives,	\$474	\$503,014	\$1.56 million

<sup>4</sup> *Independent Auditor's report - ABLE TN*. (2019). Tennessee Department of Treasury—College Savings, Unclaimed Property, Retirement, Financial

Education. <https://treasury.tn.gov/Portals/0/Documents/Annual%20Reports/Financial%20Statements/2019/ABLETNFinancialStatement2019.pdf>

<sup>5</sup> The turnover rate was extracted from the recent N-Port filings of the funds in which the NJBEST is invested, extracted from <http://legacy.whalewisdom.com/>.



increasing by 2 basis points a year to 10 basis points)			
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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.

#### IV. Individual Investor/401(k) Analysis

Tennessee has an estimated 374,000 individuals participating in the stock market as a tool for saving for 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 2020<sup>6</sup>.

We did an examination of a “typical” 401(k) portfolio and/or individual savings mutual fund of Tennessee state 401(k) plan over its life of 40 years. The analysis indicated that the individual portfolios were initially invested – 54.2 % in domestic equities, and 7.2% in domestic bonds which changed to 36.7 % in domestic equities, and 27.2% in domestic bonds by the end of 40 years.

For the purposes of this calculation, it is estimated that the individual investor has \$100,000 invested in a mutual fund at the start of 2020. The portfolio is carried over the 40 years according to the current age-based portfolio distribution of Tennessee state 401(k) plans. For purposes of this case study, the turnover rates of the individual funds were extracted from Morningstar.<sup>7</sup>

#### FTT Impact on the Individual Investor in Tennessee

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)
<b>TYPE 1</b> (10 basis points on equities, 10 basis points on bonds, 10 basis points on derivatives)	\$1.08 billion	\$672.63 billion
<b>TYPE 2</b> (50 basis points on equities, 10 basis points on bonds, 0.5 basis points on derivatives)	\$240.2 million	\$577 billion
<b>TYPE 3</b> (2 basis points across asset classes increasing incrementally over 5 years to	\$47.58 million	\$566.70 billion

<sup>6</sup> <https://news.gallup.com/poll/266807/percentage-americans-owns-stock.aspx>

<sup>7</sup> <https://www.morningstar.com/>



10 basis points ongoing)		
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Notably, this example does not take into account “widened spreads” and “deadweight loss” which would also result in an increased transaction cost for the Tennessee STATE investors.

Notably, for individual investors invested in 401(k) qualified retirement plan, the tax would apply under all 3 of the taxes to accounts that were designed to be eligible for tax benefits under IRS guidelines.

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