



MODERN MARKETS  
INITIATIVE

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

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## Overview

New Jersey has a total population of 8.88 million, of which an estimated 4.88 million individuals are invested in the stock market as a tool for saving for education, retirement and other life milestones. This projection is based on an estimated [55% stock market participation](#) across the United States, according to a Gallup poll last updated in June 2020.

Investors in New Jersey are invested in the stock market through pension funds such as the New Jersey Division of Pensions & Benefits, 529 College Savings plans such as NJBEST, ABLE plans such as NJ ABLE and individually through individual retirement accounts (IRAs) and 401(k)s.

There are various proposals pending for a financial transaction tax (FTT) in the United States. The following report provides an analysis of the projected FTT impact on holders of 401(k) plans, 529 College Savings plans, public pension plans and individuals with IRAs, among others in New Jersey. Specifically, the below analysis of the projected FTT impact is based on a “Type 1” FTT on trading (10 basis point equities, 10 basis points bonds, 10 basis point derivatives); “Type 2” FTT on trading (50 basis point equities, 10 basis points bonds, 0.5 basis point derivatives); and “Type 3” FTT on trading (2 basis points across asset classes increasing incrementally over 5 years to 10 basis points ongoing).

## Key Findings

The startling costs that an FTT would pose to millions of Americans in New Jersey include:

- For the New Jersey Division of Pensions & Benefits, the impact of the three versions of the FTT after 30 years would be: **\$8.15 billion** for Type 1; **\$2.35 billion** for Type 2; and **\$2.28 billion** for Type 3.
- For the NJBEST 529 College Savings Plan, the impact of the three versions of the FTT after 30 years would be: **\$556.94 million** for Type 1 (equivalent to full yearly tuition for **735 students**); **\$216.32 million** for Type 2 (equivalent to full yearly tuition for **290 students**); and **\$206.7 million** for Type 3 (equivalent to full yearly tuition for **270 students**).
- For New Jersey residents participating in the NJ ABLE plan, the impact of the three versions of the FTT after 30 years would be: **\$383.35 million** for Type 1; **\$76.67 million** for Type 2; and **\$74.76 million** for Type 3.
- For individual investors and 401(k) plan holders, the impact of the three versions of the FTT after 40 years would be: **\$8.07 billion** for Type 1; **\$390 million** for Type 2; and **\$193.42 million** for Type 3.

## I. NEW JERSEY DIVISION OF PENSIONS & BENEFITS

The New Jersey Division of Pensions & Benefits was founded in 1955 with the purpose of incentivizing public employees, teachers, police, firemen and judiciaries to work in the state of New Jersey. Under the plan, participants receive a cost of living adjustment if the pension plan reaches a funding level of 80%. Since the [current funded level](#) is 39.73%<sup>1</sup>, all cost of living adjustments have been suspended. There are about [800,000](#) participants<sup>2</sup> currently in the New Jersey Division of Pensions & Benefits.

An examination of the most recent FY2019 annual report indicates that the New Jersey Division of Pensions & Benefits has [\\$87.3 billion](#) assets under management<sup>1</sup> (AUM), of which \$25.49 billion are in equities, \$9.66 billion in fixed income, \$72.74 million in derivatives (including options) and the rest is divided largely into private equity and real estate.

For the purpose of this calculation, it is estimated that the New Jersey Division of Pensions & Benefits has a turnover rate of 0.72 for 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 rate, rather than the assets under management. For the purpose of this case study, the turnover rate was modeled after publicly available information on average pension fund turnover rates.

“FTT TYPE 1” (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives):

The total current year projected burden for the New Jersey Division of Pensions & Benefits is \$103.8 million a year under a “Type 1” FTT model. Assuming that the pension fund maintains a growth rate of 6% per year for 20 years and no further contributions and deductions to the fund are made, the cumulative cost including compounding interest over 20 years of a “Type 1” FTT would be \$3.79 billion.; over 30 years, the total cost of a “Type 1” FTT would be \$8.15 billion.

“FTT TYPE 2” (10 basis points on equities, bonds and derivatives):

The total current year projected burden for the New Jersey Division of Pensions & Benefits is \$29.72 million a year under a “Type 2” FTT model. Assuming that the pension fund maintains a growth rate of 6% per year for 20 years and no further contributions and deductions to the fund are made, the cumulative cost including compounding interest over 20 years of a “Type 2” FTT is \$1.09 billion; over 30 years, the total cost of a “Type 2” FTT is \$2.35 billion.

“FTT TYPE 3” (2 basis points on equities, bonds and derivatives in Year 1 increasing linearly to 10 basis points by Year 5):

The total yearly projected burden for the New Jersey Division of Pensions & Benefits would be \$5.94 million the first year under a “Type 3” FTT model. Assuming that the pension fund maintains a growth rate of 6% per year for 35 years and no further contributions and deductions to the fund are made, the

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<sup>1</sup> *Financial Statements and Supplementary schedules*. (2019, June 30). The Official Web Site for The State of New Jersey. <https://www.state.nj.us/treasury/pensions/documents/financial/annrpt2019/2019divisioncombined.pdf>

<sup>2</sup> *2019 Annual Report, New Jersey State investment council*. (n.d.). The Official Web Site for The State of New Jersey. <https://www.nj.gov/treasury/doinvest/pdf/AnnualReport/AnnualReportforFiscalYear2019.pdf>

cumulative cost including compounding interest over 20 years of a “Type 3” FTT is \$1.03 billion; over 30 years, the total cost of a “Type 3” FTT is \$2.28 billion.

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

The New Jersey Division of Pension & Benefits made available its security transaction data for May 2020, allowing MMI to calculate impact of FTT on the fund for that month. For the domestic equity transactions, the fund would end up paying \$10.6 million in FTT Type 1; and \$2.12 million for FTT Type 2. For domestic fixed income securities, the fund would end up paying \$380,570 for both FTT Type 1 and Type 2. The above data is in the expected range based on MMI’s annual turnover calculations.

## II. NJBEST 529 Plan

The NJBEST 529 Plan (NJBEST) was founded 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. Overall, in the United States, [over 44%](#) of parents utilize 529 College Savings plans to save for their children’s education.

An examination of the most recent 2019 annual report indicates that NJBEST has [\\$5.4 billion](#) assets under management (AUM)<sup>3</sup>, of which 59% are invested in equities, 32% in bonds and 9% in cash.

For the purpose of this calculation, it is estimated that NJBEST has an average turnover rate of 48.4% for equities, and 65% 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 purpose of this case study, the turnover rates were extracted from the annual reports\* of the funds in which the NJBEST portfolios are invested.

“FTT TYPE 1” (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives):

Assuming future contributions made to the NJBEST fund are equal to the current year contributions, the total current year projected burden for NJBEST is \$4.19 million under a “Type 1” FTT model. The projected yearly burden is expected to grow at the same rate as the fund’s AUM. Assuming that the 529 College Savings plan maintains a growth rate of 7.5% per year for 20 years, the cumulative cost including compounding interest over 20 years of a “Type 1” FTT would be \$220.76 million; over 30 years, the total cost of a “Type 1” FTT would be \$556.94 million.

Assuming the average in-state tuition for New Jersey is \$15,000 per year, the cost of the “Type 1” FTT would equal yearly tuition for 735 students.

“FTT TYPE 2” (10 basis points on equities, bonds and derivatives):

Assuming future contributions made to the NJBEST fund are equal to the current year contributions, the total current year projected burden for NJBEST is \$1.76 million under a “Type 2” FTT model. The projected yearly burden is expected to grow at the same rate as the fund’s AUM. Assuming that the 529 College Savings plan maintains a growth rate of 7.5% per year for 20 years, the cumulative cost including compounding interest over 20 years of a “Type 2” FTT would be \$87.12 million; over 30 years, the total cost of a “Type 2” FTT would be \$216.32 million.

Assuming that the average in-state tuition for New Jersey is \$15,000 per year, the cost of the “Type 2” FTT would equal yearly tuition for 290 students.

“FTT TYPE 3” (2 basis points on equities, bonds and derivatives, increasing by 2 basis points a year to 10 basis points):

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<sup>3</sup> *Combined Financial Statements*. (2019, June 30). <https://www.hesaa.org/Documents/Financial/AuditedFinancialStatements/2019/FranklinTempletonManagedInvestmentOptionsFinancialStatement.pdf>

\*List of annual reports provided on the final page of this study

Assuming future contributions made to the NJBEST fund are equal to the current year contributions, the total current year projected burden for NJBEST is \$358,763 under a “Type 3” FTT model. The projected yearly burden is expected to grow at the same rate as the fund’s AUM. Assuming that the 529 College Savings plan maintains a growth rate of 7.5% per year for 20 years, the cumulative cost including compounding interest over 20 years of a “Type 3” FTT would be \$81 million; over 30 years, the total cost of a “Type 3” FTT would be \$206.7 million.

Assuming that the average in-state tuition for New Jersey is \$15,000 per year, the cost of the “Type 3” FTT would equal yearly tuition for 270 students.

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. New Jersey offers an age-based plan in which the investments are made according to the age of the child. The age-based plans are categorized as conservative, moderate and growth, and are based on the risk-appetite of the individual. For an individual investing \$5,000 every year for 18 years in the conservative age-based plan, he or she would stand to lose \$3,095 due to the impact of FTT “Type 1.” Consequently, he or she would lose \$3,234 in the moderate plan and \$4,122 in the growth plan. 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.

Further, this example does not consider “widened spreads” and “deadweight loss” which would also result in increased transaction cost for the NJBEST 529 Plan.

### III. New Jersey ABLE

The New Jersey ABLE program (NJ ABLE), a type of 529A account, was founded in 2016 with the purpose of allowing individuals with disabilities and their families to have a tax-advantaged savings vehicle for disability-related expenses.

The New Jersey ABLE program has not disclosed any annual reports since its inception. Therefore, for these calculations, MMI takes the [current disability population of New Jersey](#) disclosed by the state government<sup>4</sup> and assumes that 50% of these people have an ABLE account. Each account on average is assumed to have \$10,000 invested.

For the purpose of this calculation, it is estimated that NJ ABLE has an average turnover rate of 6.6% for equities and 47.33% 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 the purpose of this case study, the turnover rates were extracted from the annual reports of the funds in which the NJ ABLE portfolios are invested.

“FTT TYPE 1” (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives):

The total current year projected burden for NJABLE is \$4.47 million under a “Type 1” FTT model. The projected yearly burden is expected to grow at the same rate as the fund’s AUM and it is assumed that no further contributions to the portfolios are made. Assuming that the ABLE plan maintains a growth rate of 6.5% per year for 20 years, the cumulative cost including compounding interest over 20 years of a “Type 1” FTT would be \$172.9 million; over 30 years, the total cost of a “Type 1” FTT would be \$383.35 million.

“FTT TYPE 2” (10 basis points on equities, bonds and derivatives):

The total current year projected burden for NJ ABLE is \$895,460 under a “Type 2” FTT model. The projected yearly burden is expected to grow at the same rate as the fund’s AUM and it is assumed that no further contributions to the portfolios are made. Assuming that the ABLE plan maintains a growth rate of 6.5% per year for 20 years, the cumulative cost including compounding interest over 20 years of a “Type 2” FTT would be \$34.58 million; over 30 years, the total cost of a “Type 2” FTT would be \$76.67 million.

“FTT TYPE 3” (2 basis points on equities, bonds and derivatives, increasing by 2 basis points a year to 10 basis points):

The total current year projected burden for NJ ABLE is \$179,092 under a “Type 3” FTT model. The projected yearly burden is expected to grow at the same rate as the fund’s AUM and it is assumed that no further contributions to the portfolios are made. Assuming that the ABLE plan maintains a growth rate of 6.5% per year for 20 years, the cumulative cost including compounding interest over 20 years of a “Type 3” FTT would be \$32.67 million; over 30 years, the total cost of a “Type 3” FTT would be \$74.76 million.

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<sup>4</sup> *Disability and employment status report for New Jersey, 2017.* (n.d.). [https://www.disabilitystatistics.org/reports/2017/English/HTML/report2017.cfm?fips=2034000&html\\_year=2017&subButton=Get+HTML#introduction](https://www.disabilitystatistics.org/reports/2017/English/HTML/report2017.cfm?fips=2034000&html_year=2017&subButton=Get+HTML#introduction)



Notably, this example does not consider “widened spreads” and “deadweight loss” which would also result in increased transaction costs for NJ ABLE plans.

## IV. INDIVIDUAL INVESTOR/401(k) ANALYSIS

An examination of a “typical” 401(k) portfolio and/or individual retirement account (IRA) of comparable state 401(k) plans indicates that individual portfolios are invested 49% in domestic equities and 13.3% in domestic bonds.

For the purpose of this calculation, it is estimated that the individual investor has \$100,000 invested in a 401(k) over 40 years, with an estimated growth rate of 6% per year. The turnover rate was modeled after institutional retirement funds from Vanguard. Notably, turnover rates can vary widely as high as 800% for some mutual funds and as low as 10% for some index funds.

“FTT TYPE 1” (50 basis points on equities, 10 basis points on bonds, and 0.5 basis points on derivatives):

The total first year projected burden for New Jersey retirement investors would be \$48.94 million under a “Type 1” model. Assuming that New Jersey investors’ retirement portfolios maintain a growth rate of 6% per year for 40 years, the cumulative cost including compounding interest over 40 years of a “Type 1” FTT would be \$8.07 billion.

“FTT TYPE 2” (10 basis points on equities, bonds and derivatives):

The total first year projected burden for New Jersey retirement investors would be \$2.36 million under a “Type 2” model. Assuming that New Jersey investors’ retirement portfolios maintain a growth rate of 6% per year for 40 years, the cumulative cost including compounding interest over 40 years of a “Type 2” FTT would be \$390 million.

“FTT TYPE 3” (2 basis points on equities, bonds and derivatives, increasing by 2 basis points a year to 10 basis points):

The total first year projected burden for New Jersey retirement investors would be \$1.18 million under a “Type 3” model. Assuming that New Jersey investors’ retirement portfolios maintain a growth rate of 6% per year for 40 years, the cumulative cost including compounding interest over 40 years of a “Type 3” FTT would be \$193.42 million.

Further, this example does not consider “widened spreads” and “deadweight loss” which would also result in increased transaction cost for New Jersey retirement investors.

Notably, for individual investors invested in 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.



## V. TURNOVER CALCULATIONS

MMI used the following sources for estimating turnover ratios:

1. For pension funds, MMI estimated the turnover rates from funds which had publicly available data about their transactions (i.e. Calpers)
2. For mutual funds, index funds and ETFs we had the following priority list of turnover rates findings:
  - Annual report of the fund
  - Most recent N-port filings of the fund
  - Morningstar

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## Annual Reports Used for NJBEST Turnover Rate:

1. <https://www.franklintempleton.com/forms-literature/download/FCF-A>
2. <https://www.franklintempleton.com/forms-literature/download/FSS1-A>
3. <https://www.franklintempleton.com/forms-literature/download/FGT3-A>
4. <https://www.franklintempleton.com/forms-literature/download/474-A>
5. <https://www.franklintempleton.com/forms-literature/download/158-A>
6. <https://www.franklintempleton.com/forms-literature/download/FIST2-A>
7. <https://www.franklintempleton.com/forms-literature/download/477-A>
8. <https://www.franklintempleton.com/forms-literature/download/104-A>
9. <https://www.franklintempleton.com/forms-literature/download/406-A>
10. <https://www.franklintempleton.com/forms-literature/download/101-A>
11. [https://www.franklintempleton.com/content-common/annual-report/en\\_US/local-US/ETF-annual-report-v2.pdf](https://www.franklintempleton.com/content-common/annual-report/en_US/local-US/ETF-annual-report-v2.pdf)
12. [https://www.franklintempleton.com/content-common/annual-report/en\\_US/local-US/ETF-annual-report-v3.pdf](https://www.franklintempleton.com/content-common/annual-report/en_US/local-US/ETF-annual-report-v3.pdf)
13. <https://www.blackrock.com/us/individual/resources/regulatory-documents/stream-document?stream=reg&product=I-SP500&shareClass=NA&documentId=925833%7E926358%7E926348%7E925661%7E925593&iFrameUrlOverride=%2Fus%2Findividual%2Fliterature%2Fannual-report%2Far-ishes-core-s-and-p-etfs-03-31.pdf>
14. <https://advisors.vanguard.com/funds/reports/q16420.pdf>