

A Study of the Effects of a Financial Transaction Tax on Savings and Retirement Security and Risk to Market Stability During COVID-19 Volatility

JANUARY 2021



MODERN MARKETS
INITIATIVE

Modern Markets Initiative
1440 G Street, NW
Washington, DC 20005

info@modernmarkets.org
modernmarketsinitiative.org

Contents

IN THIS REPORT

Facts and data indicate that a "retirement tax" or FTT proposal would strip hard-earned savings from American workers, pension funds, 529 plan holders, university endowments and the broader savings ecosystem.

03

An Introduction & Highlights

About the Author
FTT: A Tax on Retirement

08

U.S. Savings Priorities & The Retirement Tax

How the FTT Has Failed Before

16

529 College Savings Plans & University Endowments

A Tax on Education Savings

22

Public Pension Plans & Individual Savers

A Tax on Retirement Savings

31

Methodology & Conclusion

Introduction

Over half of American households are invested in the stock market, either directly or indirectly through contributing to mutual funds, 529 College Savings plans, pension plans, 401(k)s or IRAs, or ABLE plans. For these Main Street investors, dependable liquidity and properly functioning markets are vital to accessing their capital. During 2020, the financial markets have functioned with resiliency despite market volatility during the COVID-19 pandemic, in large part due to the stabilizing liquidity provided by automated traders and HFT firms, which pumped dependable liquidity into the capital markets which remained open and functioning despite a historic period of volatility.

This report analyzes pending proposals for a financial transaction tax (FTT) before Congress that would place a tax ranging from 0.02-0.5 percent on all equity, debt and derivatives trades transacted in the United States. As detailed in this report, the FTT would create a drag on investments for investors across the board, big and small.

The FTT has been framed by proponents as a tax on Wall Street – but the harsh reality is that the FTT would be a huge blow to average American families across all income categories. As Congress searches for revenue raisers following trillions of dollars spent on COVID-19 relief packages, it is important to take a tax that would come directly from the pockets of Americans' savings accounts completely out of the running.

In addition to negatively impacting Main Street directly through taxing their savings, the FTT would also severely damage the health of the U.S. capital markets by reducing liquidity in the capital markets and making trading more expensive for all investors. The cost of trading has come down significantly over the past several years and many retail brokerages now charge zero commission for making trades. In mid-March 2020, the American capital markets witnessed historic levels of volatility as the COVID-19 pandemic swept across the U.S. However, despite the extreme volatility, the capital markets were able to withstand the storm in large part thanks to automated traders, who pump dependable liquidity into the markets, even when others are afraid to trade during a sell-off.

Instead of systems crashing, the markets continued to operate efficiently, investors were able to easily buy and sell securities, with bid-ask spreads narrower than they were during the Great Financial Crisis. For Main Street investors, narrow bid-ask spreads and dependable liquidity from automated traders are essential, as these fundamentals work to stabilize the market during times of turbulence.

This report further details the failed history of the FTT in jurisdictions in which it has been implemented, including creating market instability with drops in trading volume by 50 to 80%, reduced liquidity, and a failure to raise the stated revenue projections in nations in which it has raised as little as 3% to 15% of the revenue targets. Moreover, the FTT as a policy incentivizes parties to turn away from traditional equities trading and to move toward synthetic derivatives, as has been the case in the UK where the Stamp Tax has driven away trading on stock markets. Notably, in the United States it was a Democrat Congress and a Democrat President who abolished the FTT that once existed in the US as failed tax policy in 1965. As this report details with data and analysis, the experiment of a FTT, in particular during the COVID-19 period of volatility, is an experiment not worth undertaking when US lawmakers can learn from the negative, failed precedent of the FTT previously in the US and in other nations where the FTT has been repealed.

About the Author

Benefits of HFT

50%

Reduced trading costs to investors over past decade

30%

More savings in Americans' retirement accounts over lifetime

The author, **Modern Markets Initiative** (“MMI”), is a 501c4 nonprofit organization that produces studies, data, and materials on the beneficial role of technological innovation in the capital markets, including the positive role of automated traders. MMI supports well-regulated markets, responsible innovation, and having a strong finger on the pulse, and strongly opposes any illegal trading activity, including front-running, illegal spoofing, or other illegal market manipulation.

Automated trading firms, sometimes referred to as High frequency trading (HFT) firms, whom MMI represents, are firms that provide liquidity in the markets and act as intermediaries. As a result of HFT firms, the cost of trading has been reduced by 50% over a decade.¹ This means that Americans have more savings in their retirement accounts over a lifetime.² Automated traders have played a vital role in driving down the cost of trading for investors, facilitating the creation of zero-fee trading for retail investors that has helped democratize access to trading for investors big and small.

Average investors would be poorly served by a return to pre-HFT trading, where expensive floor-based specialist intermediaries and large institutions capitalized on a lack of transparency to set wide spreads. Automated traders have dramatically lowered spreads for all investors because of the efficiency they bring to the markets.³

¹ Menkveld, Albert J., “The Economics of High-Frequency Trading: Taking Stock.” Annual Review of Financial Economics, Volume 8, Forthcoming. (“In the decade of migration to electronic trading and HFT arrival, transaction cost decreased by over 50% for both retail and institutional investors.”) (June 1, 2016).

² April 21, 2010: Vanguard Comment letter on SEC Concept Release on Equity Market Structure (“...we conservatively estimate that transaction costs have declined 50 bps, or 100 bps round trip... Today’s investor with a 30 year time horizon would see a \$10,000 investment in such a fund grow to approximately \$132,000 in 30 years, compared to approximately \$100,000 with the hypothetical return of 8% associated with the higher transaction costs. Thus, any analysis of “high frequency trading” must recognize the corresponding benefits that long-term investors have experienced through tighter spreads and increased liquidity.”) (April 21, 2010),

³ D. Hal Scott, “Why U.S. Investors are Better Off Today,” Washington Times, (January 21, 2016). (Vanguard estimates that the shift from the old market structure to today’s automated market structure has reduced trading costs by 35-60 percent, resulting in a 32% greater yield for long-term investors.)

Highlights: A Tax on Retirement and Savings

This report is an analysis of the projected economic impact of pending financial transaction tax (“retirement tax” or “FTT”) on the savings community, with a particular emphasis on the excessive costs that would be borne by savings community stakeholders.

Notable Findings of the MMI Retirement Tax Report

The research projects that the “retirement tax” would negatively impact college savings and retirement savings vehicles, including:

529 College Savings Plans: A single “top 5” public university endowment is projected to owe approximately \$19 million annually in FTT, or the equivalent of in-state tuition for 1,906 students each year;

University Endowments: The retirement tax would cost a state “top 20” university endowment \$24 million in FTT each year, or the equivalent of 3,227 scholarships in a given year; collectively, public and private university endowments would be estimated to owe \$422 million in FTT each year, funds otherwise available for scholarships;

Public Pension Fund Retirement Plans: The retirement tax⁴ would have the following projected impact on actual pension fund plans:

- California Public Employees Retirement System (“CalPERS”) ~ \$373B AUM – Yearly Cost: **\$564 million**
- Wisconsin Pension Fund ~ \$97.7B AUM – Yearly Cost: **\$237.8 million**
- Tennessee Consolidated Retirement System (TCRS) ~ \$52B AUM – Yearly Cost: **\$75.43 million**
- New Jersey Division of Pension and Benefits ~ \$87.3B AUM – Yearly Cost: **\$103.8 million**
- Illinois Municipal Retirement Fund ~ \$44.67B AUM – Yearly Cost: **\$110.24 million**
- Virginia Retirement System (VRS) ~ \$85.4B AUM – Yearly Cost: **\$139.15 million**
- New York State Common Retirement Fund ~ \$210.5B AUM – Yearly Cost: **\$450.4 million**
- South Dakota Retirement System (SDRS) ~ \$12.5B AUM – Yearly Cost: **\$26.5 million**
- Florida Retirement System (FRS) ~ \$165.47B AUM – Yearly Cost: **\$462.27 million**
- Public Employee Retirement System of Nevada (PERS Nevada) ~ \$43.97B AUM – Yearly Cost: **\$123.53 million**

⁴ Based on financial transaction tax proposed in the Inclusive Prosperity Act of 2019 (50 basis points on equities, 10 basis points on bonds, 0.5 basis point derivatives)

401(k) Retirement Plans and IRA Plans: The average 401(k) has a balance of about \$103,700⁵ and the average IRA plan has a balance of about \$100,200. Assuming \$100,000 invested over 40 years, the retirement tax would have a cost of about \$910 a year on average, or \$36,426 in retirement tax” over a 40-year lifetime savings on IRAs and 401(k)s.

⁵ “The average 401(k) balance by age” (March 13, 2020). At <https://www.bankrate.com/retirement/average-401k-balance-by-age/>.

U.S. Saving Priorities

Americans across all income levels are invested in the stock market for retirement and college savings, with saving for the future an important retirement goal.

Data shows that in 2020 during a time when the coronavirus has created economic anxiety and uncertainty, that Americans continue to prioritize saving for a secure retirement, for college, and other life goals:

- The majority of Americans say that saving for retirement is their top financial priority, with the coronavirus pandemic having changed nearly 80% of Americans' views about what is financially important; that as a result of the pandemic, nearly two-thirds of respondents (66%) say they want to save more, 65% say they place more importance on emergency funds and 59% place more importance.⁶
- More than half - about 52% - of Americans are invested in the stock market in 2020, across income levels whether through a public pension plan, a 529 plan, or other savings plan.⁷
- Nearly all state and local government employees are invested indirectly in the stock market through defined contribution plans or defined benefit plans.
- More than 14 Million American households have 529 College Savings plans, and 44% of parents saving for college use 529 plans.

Many Americans have chosen public sector jobs to enjoy public pension plan benefits for a secure retirement. According to the National Association of State Retirement Administrators (NASRA), citing the Department of Labor statistics, 85% of state and local government employees participate in a defined benefit plan, with substantially all of the remainder participating in a defined contribution plan.⁸

Public and private university endowments have been a tool for helping Americans afford college, with \$68.9 billion in grant aid provided in 2019-20⁹ and public and private endowments making up a collective \$350 billion in assets under management, with about half of annual withdrawals going to student aid.¹⁰

⁶ <https://401kspecialistmag.com/retirement-saving-no-1-contributor-to-financial-resiliency/> (October 18, 2020)

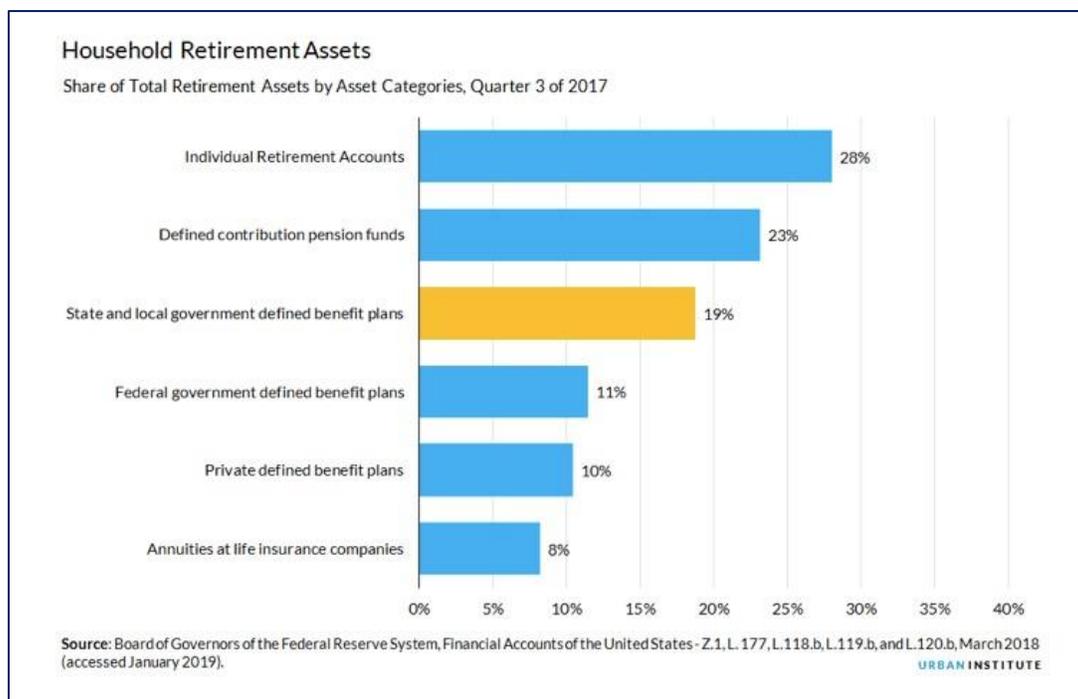
⁷ "More than half of U.S. households have some investment in the stock market," Pew Research Center. (March 25, 2020) at <https://www.pewresearch.org/fact-tank/2020/03/25/more-than-half-of-u-s-households-have-some-investment-in-the-stock-market/>

⁸ "Topics: Defined Benefit," National Association of State Retirement Administrators (November 11, 2020) at <https://www.nasra.org/content.asp?admin=Y&contentid=192>

⁹ "College Pricing and Trends in Student Aid 2020" at <https://research.collegeboard.org/pdf/trends-college-pricing-student-aid-2020.pdf>

¹⁰ Inside Higher Ed: 49 percent of university endowment withdrawals go to student aid/scholarships at <https://www.insidehighered.com/news/2019/01/31/college-endowments-returned-82-percent-2018-annual-survey-adds-some-insight-how> (July 30, 2019)

The following graph depicts the American retirement landscape of savings vehicles collected by the U.S. Department of Labor¹¹:



Saving for retirement and paying for college are clearly top of mind for many Americans, be it through a pension plan, an individual account for retirement, or through other plans. A tax proposal that would reduce the returns on investment savings would require Americans to put off retiring by two and a half years, according to some estimates and would reduce the ability of university endowments to pay for scholarships. Simply, the retirement tax would be contrary to the interest of American savers who have worked a lifetime to enjoy their golden years.¹²

It is notable that Middle Class families across all income levels are participating in saving and investing for the future. For example, 401(k) savings plans primarily benefit middle class families, with 80% of participants in 401(k) plans make less than \$100,000 per year, and 43% of participants make less than \$50,000 per year.¹³ A FTT would impact these Middle Class savers, creating a drag on their investment returns with a seemingly small tax cumulatively over lifetime savings adding up to substantial numbers discussed further in this report.

¹¹ State and Local Government Pensions," the Urban Institute (July 30, 2019) at <https://www.urban.org/policy-centers/cross-center-initiatives/stateand-local-finance-initiative/projects/state-and-local-backgrounders/state-and-local-government-pensions>

¹² "Main Street Investors at risk: A Financial Transaction Tax Would Harm Everyday Savers" (Vanguard, 2019) noting that the proposed tax would require the everyday investor to work roughly two and a half years longer before retiring in order to reach the same retirement savings goals achievable without the tax).

¹³ American Retirement Association (<https://www.usaretirement.org/retirement-issues>) (as of November 12, 2020).

The Retirement Tax: How the FTT Has Failed Before

A retirement tax or financial transaction tax (FTT) is a tax placed on a specific type of monetary transaction for a particular purpose. A FTT may be assessed directly on the buyer, the seller, or both (or on an exchange to collect the fee as an intermediary, with the fee passed on to the buyer, seller or both), and is typically a percentage of the market value of the security instrument that is traded.

Several FTT proposals have been introduced in this Congress, including Sen. **Sanders'** (I-VT) Inclusive Prosperity Act (S. 1587) (50 basis points for equities, 10 basis points for bonds, 0.5 basis points for derivatives) as a means to pay off \$1.6 trillion in student loan debt. A separate FTT bill by Sen. **Schatz** (D-HI) and Rep. **DeFazio** (D-OR) (H.R. 1516/ S. 647) would set a 10 basis points across asset classes of equities, bonds and derivatives. A third type of tax, not introduced but supported by some Brookings Institute economists, would implement a gradual tax of 2 basis points increasing over a period of 5 years to 10 basis points across equities, bonds and derivatives.

Failed Policy: Democrat Congress and Democrat President Repealed FTT in 1965

The FTT is not a new concept. In fact, a Democratic Congress and President did away with the last FTT in 1965 because they realized it was bad tax policy. Further, other countries that have enacted a FTT noticed that 50% to 80% of trading went to other countries, the cost of trading went up, and the capital markets were negatively impacted. Moreover, because trading volume decreased, the FTT failed to raise the amount of revenue expected in those countries, and in some countries like Italy and Sweden, the FTT only raised 3% to 15% of the annual expected revenue.

Further:

- When **Sweden** enacted a FTT bond trading fell by 85%; futures trading fell by 98%; and more than 50% of all Swedish trading moved to London¹⁴.
- When **Germany** enacted a FTT German public companies moved to London and trading in German bonds sank as much as 50%¹⁵.
- When **Italy** enacted a FTT Italian stocks fell 34.2% within two years.

In addition, because FTTs reduce trading volume, FTTs raise far less revenue than expected:

¹⁴ "Internationalization of Equity Markets: International Experiences with Securities Transaction Taxes," John Y. Campbell, Kenneth A. Froot (January 1994) At <https://www.nber.org/chapters/c6276.pdf>

¹⁵ "Financial Transaction Taxes: The International Experience and the Lessons for Canada," Marion G. Wrobel Senior Analyst (June 1996) at <http://www.publications.gc.ca/collections/Collection-R/LoPBdP/BP/bp419-e.htm>

-
- When **Sweden** enacted a FTT: It initially predicted SEK 1.5 billion annually in revenue, but the average was closer to SEK 50 million. **The FTT in Sweden raised only 3% of the annual stated revenue.**
 - When **Italy** enacted a FTT: it raised €159 million of a targeted €1 billion. **The FTT in Italy raised only 15% of the annual stated revenue.**
 - When **France** enacted a FTT: It initially predicted €1.5 billion annually in revenue, but in two years has yet to raise even half that much. **The FTT in France raised less than 50% of the annual stated revenue.**

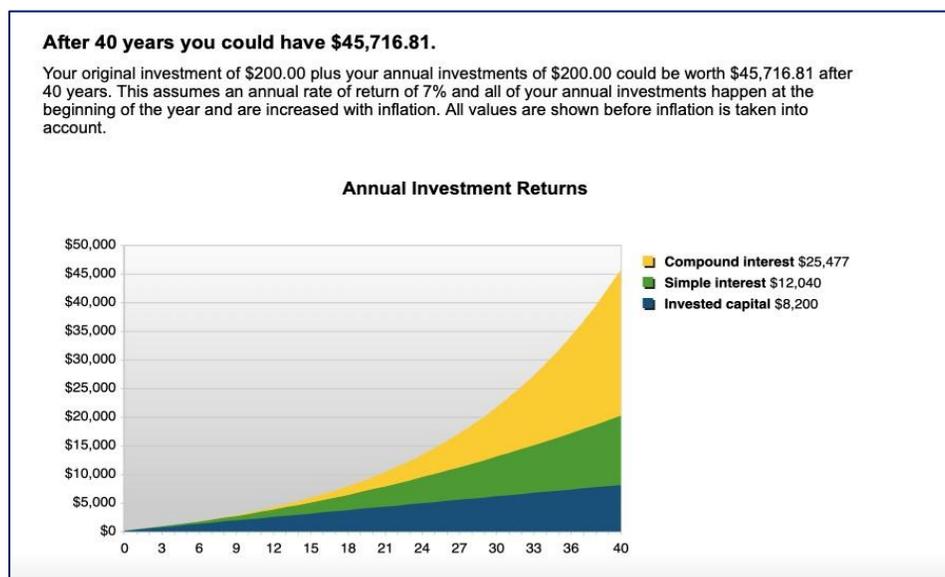
Current Retirement Tax Proposal

Under one current pending FTT draft proposal in the U.S., The Inclusive Prosperity Act (S. 1587), the following tax rates would apply across three different asset classes:

- 50 basis points on equities – (e.g. any share of stock in a public company)
- 10 basis points on debt – (e.g. any note, bond, debenture, or other evidence of indebtedness, other than tax-exempt State or local bonds)
- 0.5 basis point on derivatives - (e.g. any derivative financial instrument with respect to any security or securities etc.)

For example, under this type of tax, for an initial investment of \$10,000 in an average age-based 401(k) plan offered by states, the individual saver stands to lose **\$18,000 over the course of 40 years**, or almost 3% of his or her final retirement amount. This calculation did not consider high market losses (like in 2008 or 2020), widened spreads and deadweight loss which would further erode the final value of the portfolio.

For example, under this type of tax, for every \$100,000 invested in an average portfolio, which is 80% invested in stocks, and has a turnover rate of 0.5, the saver would be taxed at a 50 basis point rate, and owe **\$200 a year in FTT taxes**. This amounts to **over \$45,000** of FTT for an initial investment of \$100,000 shares of stock, compounded over a 40-year working lifespan.^{16,17,18}



¹⁶ Calculation: Over lifetime savings of 40 years, it is estimated that this would add up to over \$40,000 in FTT out of the initial investment of \$100,000 shares. This assumes the following: An average of \$100,000 is invested in \$80k stocks; The portfolio has a .5 turnover rate (e.g. conservative, less than the .67 average mutual fund rate), such that \$40k of the stocks are subject to the FTT a year. Assuming a 7% annual rate of return; had that \$200 been invested rather than tax, the participant would retire with an extra \$45,717 after 40 years.

¹⁷ AARP Calculator at https://www.aarp.org/money/investing/investment_return_calculator/

¹⁸ Menkveld, Albert J., "The Economics of High-Frequency Trading: Taking Stock" (June 1, 2016). Annual Review of Financial Economics, Volume 8, Forthcoming

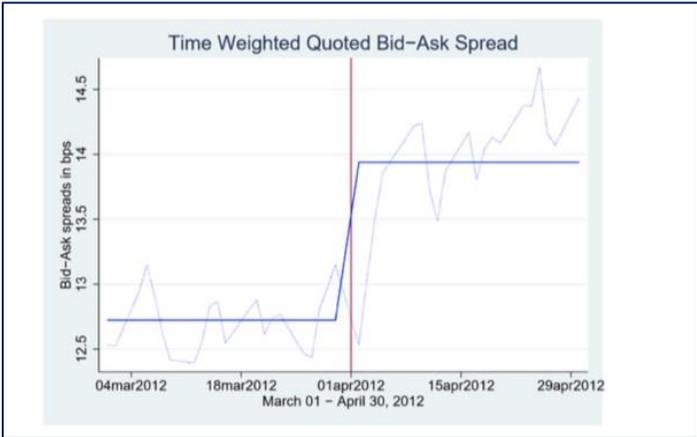
Under another current pending FTT draft proposal in the U.S., The Wall Street Tax Act, (S. 647), the following tax rates would apply across three different asset classes:

- 10 basis points on equities – (e.g. any share of stock in a public company)
- 10 basis points on debt – (e.g. any note, bond, debenture, or other evidence of indebtedness, other than tax-exempt State or local bonds)
- 10 basis point on derivatives - (e.g. any derivative financial instrument with respect to any security or securities etc.)

For example, under this type of tax, for an initial investment of \$10,000 in an average age-based 401(k) plan offered by states, the individual saver stands to lose **\$15,000 over the course of 40 years**, or almost 2.5% of his or her final retirement amount. This calculation did not consider high market losses (like in 2008 or 2020), widened spreads and deadweight loss which would further erode the final value of the portfolio.

Key FTT Impact: Wider Spreads

A wider "spread" means greater cost of trading for all investors¹⁹.



CONCEPT OF THE SPREAD: A key impact of a FTT on savings community stakeholders relates to the concept of widened "spreads." A widening – or increase -- of a spread would increase the cost of trading for all market participants. The financial markets are made up of negotiations between buyers and sellers. Like all negotiations, most end up in compromise. The distance between what someone wants and what someone is willing to pay during a particular negotiation is "the spread." For both parties, the narrower the spread, the less either party has to concede and thus, the better the price from their perspective. Fierce competition between market makers, and electronification of the markets, has led to a dramatic reduction in spreads and in the cost of trading, since 2006.²⁰

market, via fees or FTTs, increases spreads. The above graph depicts the bid-ask spread in Canada after the country imposed a "per message fee" on the market on April 1, 2012. The bid-ask spread rose 9% immediately.

AN INCREASE IN SPREADS IS PAID BY EVERY INVESTOR WHO DEMANDS LIQUIDITY, ESPECIALLY LARGE INSTITUTIONAL INVESTORS SUCH AS UNIVERSITY ENDOWMENTS, PUBLIC PENSION FUNDS, OR OTHER POOLED SAVINGS VEHICLES.

A financial transaction tax is a very specific dollar amount that can be factored in as the minimum amount a spread will need to widen. In addition, future spread costs could widen even more based on other economic factors, including an anticipated reduction of trading volumes and added volatility, among other market forces.

FTT INCREASES SPREADS = HIGHER TRANSACTION COSTS. Historically, introducing additional costs on the stock

¹⁹ Time Weighted Bid Ask Spread Source: TABB Group at <https://www.modernmarketsinitiative.org/hft-cheaper-trading-more-money-in-retirementaccounts>.

²⁰ To be clear, a per-message fee is different from a financial transaction tax in that it is usually levied on a particular segment of the market. However, as this chart shows, the resulting widening of the spread affects everyone in the market.

Impact of Spread on Market Makers and Liquidity

Increase in Spreads Would Vary Across Asset Classes.

The increase in spreads would likely vary across asset classes. For example, let's assume that for a liquid S&P 500 stock the average spread is \$0.01, and at this level market makers make some fraction of a cent in profit. The average price of an S&P 500 stock is about \$84/share, so the tax on a sale transaction would be \$0.42/share (0.5%.)

Impact on Market Makers and Liquidity.

After paying the FTT, the market maker will not be profitable and, all things being equal, will increase its quoted spreads to make up the difference. If the market maker is not able to realize the entire tax in its trading profitability, the market maker could be inclined to halt trading in that asset class, and therefore stop providing liquidity for that stock. For example, for a typical HFT market maker, a quoted spread may go from 50.00 – 50.01 (one penny) to 50.00 – 50.43 (43 pennies). If all market makers were to follow this logic, there would be little reason for "natural" liquidity providers to narrow the spreads, and thus **all investors would be negatively affected.**

529 College Savings Plans

The FTT would negatively impact 529 College Savings Plan Portfolios across the country, with projected cost ranging from \$2 million to \$19 million for a plan portfolio with a size of \$2 billion to \$12 billion range, respectively. 529 plans are a widely used tool for families to save for their children's education costs, with over 44% of parents utilizing 529 plans to help save for college. As of mid-year 2020, over 14.56 million families utilized 529 tax-advantaged savings plans for educational expenses. The total assets under management in 529 plans reached \$373.5 billion, according to a 2020 report from the College Savings Plans Network.²¹

Many states offer a 529 College Savings plan. Among the largest state 529 plans are:

- ScholarShare 529 (California): \$9.39B AUM
- Edvest College Savings Plan: \$5B AUM
- NJBEST 529 Plan (New Jersey): \$4.9B AUM
- Bright Start 529 Plan (Illinois): \$12B AUM
- New York 529 Plan: \$28.5B AUM
- South Dakota College Access: \$957mm AUM
- Virginia's College America: \$64B AUM
- New York's 529 College Savings Program Direct Plan: \$24B AUM
- The Vanguard 529 Plan in Nevada: \$17.9B AUM
- The UNIQUE College Investing Plan in New Hampshire: \$12.7B AUM
- Utah's My529: \$12.6B AUM

For a 529 Plan Portfolio with \$12 billion in assets under management, the projected impact of The Inclusive Prosperity Act (S. 1587) is **\$19 million in annual FTT**. This number assumes that the 529 plan with assets under management of \$12 billion is invested 40% in stocks, 40% in debt, and 20% in derivatives or cash equivalents, with a turnover rate of 0.67, the average turnover rate for a mutual fund investment. The calculations are as follows:

- \$4.8 billion stocks x 0.67 x 50 basis points = \$16 million
- \$4.8 billion in fixed income/ debt x 0.67 x 10 basis points = \$3 million

Under these assumptions, the total FTT owed by the 529 plan portfolio in this example with \$12 billion AUM would be \$19 million. This example does not take into account "widened spreads" which would result in increased transaction costs for the 529 plan portfolio. In all, the impact of the proposed FTT on such a 529 plan would be equivalent to the cost of in-state tuition for

²¹ Total Assets in 529 Plans Nationally, see <https://www.collegesavings.org/wp-content/uploads/2020/09/CSPN-2020-MYD-Infographic.pdf> (June 30, 2020)

approximately **1,906 students per year**. Note the average tuition of a public state college is \$9,970 for in-state residents²².

This would mean that the FTT liability of \$19 million would consume the equivalent of full in-state tuition for 1,906 students in a given year for a single state plan. This number is about half of the freshman class of a single public university such as the University of Utah, which has an average of about 4,200 students per graduating class in a given year²³. The FTT would cost the Utah 529 Plan an estimated \$19 million, or about 1,900 student tuitions, which amounts to about half the freshman class of the University of Utah.

Many states have a 529 College Savings plan. Among the largest state 529 plans are:

- ScholarShare 529 (California): \$9.39B AUM: Projected Annual Cost: \$742,746
- Edvest College Savings Plan: \$5B AUM: Projected Annual Cost: \$395,000
- NJBEST 529 Plan (New Jersey): \$4.9B AUM: Projected Annual Cost: \$4.19 million
- New York 529 Plan: \$28.5B AUM: Projected Annual Cost: \$3.91 million
- South Dakota College Access: \$957mm AUM: Projected Annual Cost: \$1.49 million
- Virginia's College America: \$5.11B AUM: Projected Annual Cost: \$9 million
- New York's 529 College Savings Program Direct Plan: \$24B AUM
- TNStars (Tennessee): \$160 million AUM: \$79,000

We can take an example of New Jersey 529 plan which has \$4.975 billion in AUM. The assets are distributed in various equity and fixed income funds managed by Vanguard and Franklin Templeton. The current year distribution is 65% in equities and 35% in bonds with an average turnover of 21% for equities and 60% for bonds. The turnover rates were calculated from the annual reports of the invested funds. The approximate calculations are as follows:

- \$3.23 billion stocks x 0.21 x 50 basis points = \$3.39 million
- \$1.74 billion in fixed income/ debt x 0.60 x 10 basis points = \$1.04 million

Under these assumptions, the total FTT owed by the 529 plan portfolio in this example with \$12 billion AUM would be \$4.44 million. This is close to the actual value of \$4.19 million we arrived in our calculations. This example does not take into account "widened spreads" which would result in increased transaction costs for the 529 plan portfolio. The impact would increase every year as the 529 plan grows. In all, the impact of the proposed FTT on such a 529 plan would be equivalent

²² <https://www.collegedata.com/en/pay-your-way/college-sticker-shock/how-much-does-college-cost/whats-the-price-tag-for-a-college-education/>(the average tuition is \$9,970 for state residents at public colleges).

²³ <https://attheu.utah.edu/facultystaff/a-record-breaking-freshman-class/>("Once again, the University of Utah welcomed its largest, most academically qualified, and most diverse incoming class of first-year students. After a record 14 percent increase last fall, it was a feat to continue the upward trajectory. For fall 2018, 4,256 first-time freshmen enrolled at the U—a 3.3 percent increase from last fall's 4,119 students.")

to the cost of in-state tuition for approximately **441 students per year**. Note the average tuition of a public state college is \$9,970 for in-state residents²⁴.

We can see how the effective tax is dependent on the turnover rate of funds based on California's ScholarShare 529 Plan. It has an AUM of \$9.39B, almost twice that of New Jersey, but its effective tax comes to \$742,746, far less than New Jersey's tally of \$4.19 million. ScholarShare 529 invests in index funds with a very low turnover of around 4-7% for equities and 30-35% for bonds.

²⁴ [https://www.collegedata.com/en/pay-your-way/college-sticker-shock/how-much-does-college-cost/whats-the-price-tag-for-a-college-education/\(the average tuition is \\$9,970 for state residents at public colleges\)](https://www.collegedata.com/en/pay-your-way/college-sticker-shock/how-much-does-college-cost/whats-the-price-tag-for-a-college-education/(the%20average%20tuition%20is%20$9,970%20for%20state%20residents%20at%20public%20colleges)).

University Endowments

There is over \$350 billion invested collectively in public and private university endowments, of which \$163 billion is comprised of public university endowments²⁵. If a FTT was imposed, university endowments would pay at least **\$422 million in FTT a year, collectively**. For a single public university endowment in the “top 5” by assets under management, with \$20 billion AUM, the projected cost would be **\$24 million per year**, or the equivalent of **3,227 college scholarships**.

University endowments offer educational institutions ongoing stability to educate generations of students, offer financial aid, and offset the rising cost of college tuition. The top five university endowments together are estimated to have each over \$20 billion AUM, and the top 20 to 30 university endowments (Michigan State, Ohio State, University of Minnesota, University of Wisconsin, University of Richmond, University of Pittsburg, Rice University, among others), have AUM ranging from \$2 to 5 billion on average²⁶. Smaller university endowments in the \$250 million range make up less than 1% of the total university endowment market value as a whole, and also utilize investment strategies for funding educational endeavors and financial aid.

27

Size of Endowment	Number of Respondents	% of Total	Total Endowment Value (\$1,000)	% of Total
Over \$1 Billion	91	10.9%	\$381,635,457	74.0%
\$501 Million to \$1 Billion	77	9.3	55,173,557	10.7
\$101 Million to \$500 Million	262	31.5	60,339,162	11.7
\$51 Million to \$100 Million	168	20.2	12,675,316	2.5
\$25 Million to \$50 Million	125	15.0	4,609,156	0.9
Under \$25 Million	109	13.1	1,590,650	0.3
Total (All Institutions)	832	100.0%	\$516,023,298	100.0%

Type of Institution	Number of Respondents	% of Total	Total Endowment Value (\$1,000)	% of Total
All Public Institutions	302	36.3%	\$163,644,645	31.7%
Public College, University, or System	78	9.4	88,882,014	17.2
Institution-Related Foundations	170	20.4	34,705,930	6.7
Combined Endowment/Foundation	54	6.5	40,056,702	7.8
All Private Colleges and Universities	530	63.7%	\$352,378,653	68.3%

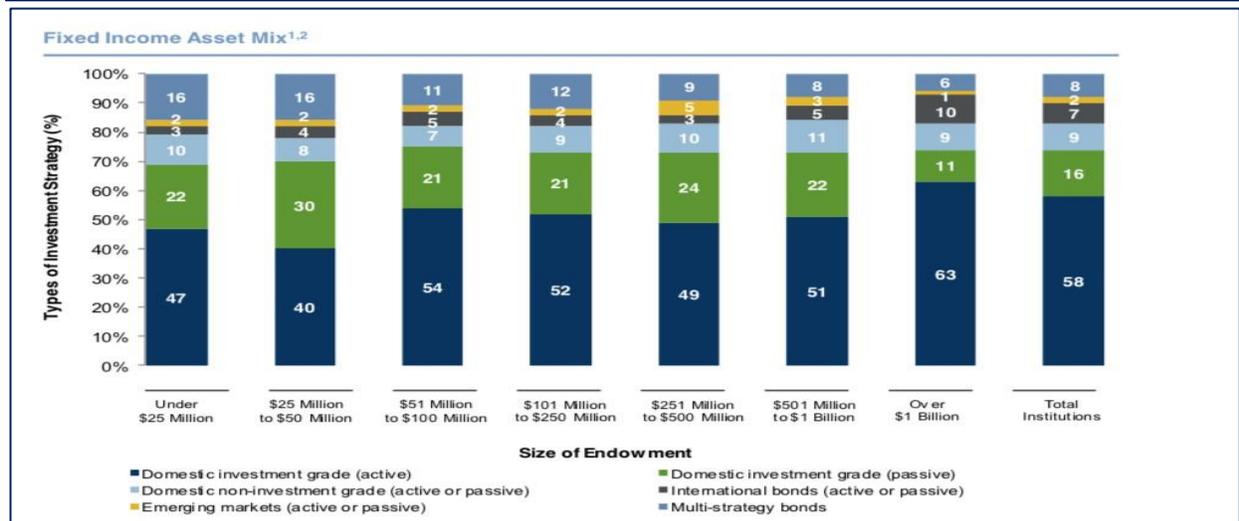
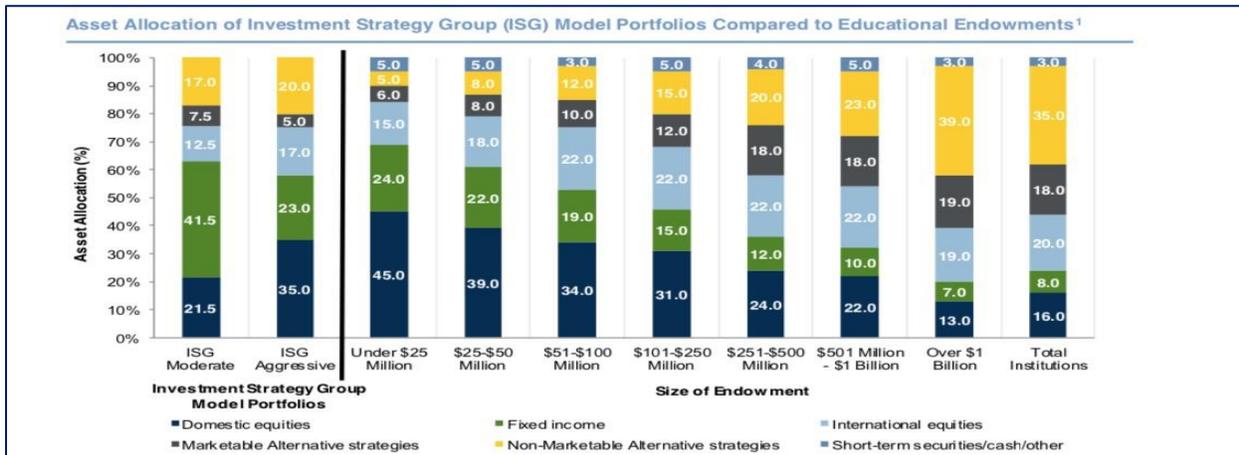
²⁵ See NACUBO-TIAA Study of Endowments, as of 2015. Also, see “Snapshot of University and College Endowments” at <http://conversableeconomist.blogspot.com/2015/02/a-snapshot-of-university-and-college.html>.

²⁶ See NACUBO-TIAA Study of Endowments, as of 2015. Also, see “Snapshot of University and College Endowments” at <http://conversableeconomist.blogspot.com/2015/02/a-snapshot-of-university-and-college.html>.

²⁷ See NACUBO-TIAA Study of Endowments, and Total Endowment Market Values, by Endowment Size and Institution The Respondents to 2014 Study.

The investment strategy of university endowments tends to vary according to the endowment's size, regardless of whether the endowment is with a public or private university. The calculations in this study utilize trends in the recent 2018 NACUBO study on asset allocation variations according to endowment size. As presented in the 2018 NACUBO, the larger the endowment, the greater the investment in alternative cash-equivalent investments, and the smaller the endowment, the greater the investment in traditional equities/passive investing strategies²⁸.

Asset Allocation of Model Educational Endowment Portfolios: 2018 NACUBO Study



For the purposes of this study, the calculations include the following assumptions:

Large endowments (over \$20 billion AUM) – 30% equities, 70% other investments, which may include:

²⁸ 2018 NACUBO-TIAA Study of Endowments. http://products.nacubo.org/index.php/nacubo-research.html?_ga=2.65043558.919868115.1566583562-1491573172.1566583562.

-
- Hedge fund investments
 - Private equity (LBOs, mezzanine, M&A funds, and international private equity)
 - Marketable alternative strategies (hedge funds, absolute return, market neutral, long/short, 130/30, and event-driven and derivatives)
 - Venture capital
 - Cash equivalents

Smaller endowments (under \$250 million AUM)

- 60% equities
- 20-40% debt
- 20 or less % cash equivalents/other investments

For a large University Endowment Portfolio with \$20 billion AUM, the projected impact of the “The Inclusive Prosperity Act” (S. 1587) is **\$24 million in annual FTT**. This number assumes that the University Endowment that has AUM of \$20 billion is invested 30% in equities, 30% in fixed income/debt, and 40% in cash equivalents (such as real estate, VC, private equity), utilizing a turnover rate of 0.67 (the average mutual fund turnover rate).

The calculations are as follows:

- \$6 billion stocks x .67 turnover x 50 basis points = \$20 million
- \$6 billion in debt x .67 turnover x 10 basis points = \$4 million

Under these assumptions, the total FTT owed by a University Endowment in this example with AUM of \$20 billion would be about \$24 million per year. This example does not take into account “Widened Spreads” which also account for increased transaction costs for the University Endowment.

It is important to note that the average private college scholarship is \$8,366.00²⁹. Assuming that the university awards scholarships in this denomination, the average number of university scholarships that a FTT would consume per year would be **3,227 scholarships** in a given year for a private university endowment. This is greater than the entire freshman college class of some major universities.

For a smaller University Endowment with \$250 million AUM, for example, the projected impact of the “The Inclusive Prosperity Act” (S. 1587) is **\$840,000 in annual FTT**. This endowment is invested in 60% in equities, and 40% debt, and has a turnover rate of 0.67 (the average mutual fund turnover rate).

²⁹ www.savingforcollege.com. (See “Surprising Facts About Scholarships”)(July 22, 2019).

The calculations are as follows:

- \$150 million equities x 0.67 turnover x 50 basis points = \$500,000
- \$100 million in debt x 0.67 turnover x 10 basis points = \$170,000

The total FTT for a small university endowment of \$250 million would be \$840,000. For this smaller university endowment, at a rate of \$8,366.00 per average private scholarship size, approximately **100 students per year would lose their scholarships.**

Public Pension Plans and Individual Savers

Public Pension Plans

The following is an analysis of the proposed economic impact of “The Inclusive Prosperity Act” (S. 1587) on various public pension funds. By way of background, the pension fund information utilized in this analysis was based on information available in publicly disclosed reports and gathered through Freedom of Information Act requests for data. The turnover information is based on public summaries, disclosure of aggregate summaries that are partially useful (breakdown of asset class is required), disclosures of categorical summary information; and when available detailed full transaction information.

For purposes of the below calculations, this report assumes **turnover rates of 72% for equities, 117% for fixed income and 95% for derivative investments of public pension funds**. These were chosen utilizing data collected from pension funds across the U.S. Some public pension funds like CalPERS were found to have a lower turnover rate of around 30% for equities while others were found to have much higher turnover rates. The rates arrived were the average turnover rate across multiple pension funds. This is more conservative than actual public pension fund turnover rates, which range from 30% to 170% for various pension funds. However, lower numbers were used to account for potential behavioral change in rate of trading. It should be noted that public pension funds have diverse asset management structures – with some pension funds employing in-house asset managers, and others utilizing third parties – such that the turnover rate could vary according to asset allocations, management (active management vs. investing in mutual funds), and otherwise.

New Jersey Division of Pension and Benefits (\$87.3 Billion AUM) = \$103.8 Million Projected Annual FTT

The following is an economic analysis of New Jersey Division of Pension and Benefits with \$87.3 billion AUM under the “The Inclusive Prosperity Act” (S. 1587).

The calculations are as follows:

- \$25.48 billion domestic equity x 0.72 turnover x 50 basis points = \$97.5 million
- \$9.65 billion in fixed income /debt x 1.17 turnover x 10 basis points = \$11.13 million
- \$72.74 million in derivatives x 0.95 turnover x 1/2 basis point = \$34,500

Table: Analysis of New Jersey Division of Pension and Benefits for FY2019

Asset Class		2019			
Domestic Equities		796,970,015			
Common Pension Fund D - Equity		24,690,613,350			
Domestic FI		9,657,129,003			
Derivatives		72,740,021			
Assumptions					
Asset Class	Turnover rate				
Equity		0.72			
Fixed income		1.17			
Derivative		0.95			
Calculations - Turnover rate					
	Equity	Fixed Income	Derivatives	Total	
FTT Type 1	91755300.11	11298840.93	34551.51	103088693	
FTT Type 2	18351060.02	11298840.93	69103.02	29719004	
FTT (type 3)					
Year	Equity	Fixed Income	Derivatives	Total	
Year 1	3670212.005	2259768.187	13820.604	5943800.8	
Year 2	7780849.45	4790708.556	29299.6805	12600858	
Year 3	12371550.62	7617226.604	46586.4919	20035364	
Year 4	17485124.88	10765680.27	65842.2419	28316647	
Year 5	23167790.47	14264526.35	87240.9706	37519558	

It is estimated that this pension fund would owe about **\$103.8 million in annual FTT** for the first year, with the annual cost increasing as the fund grows.

Under this calculation, the tax rate of the FTT (e.g. 50 basis points for equities, 10 basis points for debt, and 0.5 basis point for derivatives) is multiplied by the sales amount in order to determine the amount that the Pension Fund Portfolio would have owed the U.S. government.

For purposes of illustrating this calculation, we will assume that the turnover rate for equities is 0.72, based on analysis of multiple U.S. state pension funds. It is important to note that public pension plans must continuously rebalance their portfolios, paying out employees each month while also inputting new revenue flow from employees, and that investments in mutual funds, etc., are continuously rebalanced.

Tennessee Consolidated Retirement System: \$52 Billion AUM = \$75.43 Million Annual FTT

The following is an economic analysis of Tennessee Consolidated Retirement System with \$52 billion AUM under the "The Inclusive Prosperity Act" (S. 1587).

The calculations are as follows:

- \$16.1 billion in domestic equity x .72 turnover x 50 basis points = **\$58 million**
- \$14.9 billion in fixed income/debt x 1.17 turnover x 10 basis points = **\$17.45 million**

- \$244,000 in derivatives x .95 turnover x 1/2 basis point = **\$12**

Table: Analysis of Tennessee Consolidated Retirement System for FY2019

Asset Class	2019			
Domestic Equities	16,105,685,761			
Domestic FI	14,915,567,685			
Derivatives	244,016			
Assumptions				
Asset Class	Turnover rate			
Equity	0.72			
Fixed income	1.17			
Derivative	0.95			
Calculations - Turnover rate				
	Equity	Fixed Income	Derivatives	Total
FTT Type 1	57980468.74	17451214.19	11.59076	75431694.52
FTT Type 2	11596093.75	17451214.19	231.8152	29047539.75
FTT type 3(Assuming growth rate of 7.5%)				
Year	Equity	Fixed Income	Derivatives	Total
1	2319218.75	3490242.838	46.36304	5809507.951
2	4986320.312	7504022.102	99.680536	12490442.09
3	8040441.502	12100235.64	160.7348643	20140837.88
4	11524632.82	17343671.08	230.3866388	28868534.29
5	15486225.35	23305558.02	309.5820459	38792092.95

Under this calculation, the tax rate of the FTT (e.g. 50 basis points for equities, 10 basis points for debt, and 0.5 basis point for derivatives) is multiplied by the sales amount in order to determine the amount that the Pension Fund Portfolio would have owed the U.S. Government.

Under this model, it is estimated that this pension fund would owe **\$75.43 million in FTT** for the first year which would increase as the fund grows.

Further, utilizing models from other pension funds, the following calculations were arrived:

Examples of Projected Impact of a FTT Actual on Pension Funds

State employee fund	~ \$300B AUM	Cost: \$719.8 million
Federal employee fund	~ \$450B AUM	Cost: \$265.4 million
State/muni employee fund	~ \$25B AUM	Cost: \$206.3 million
Police and Firefighter fund	~ \$180B AUM	Cost: \$310.7 million
City employee fund	~ \$150B AUM	Cost: \$1.3 billion

State teachers fund

~ \$125B AUM

Cost: \$307.8 million

International Opposition by Pension Funds to FTT

PensionsEurope, an organization that represents over 110 million workers in Europe, and over €4 trillion AUM for future pension payments, has published position papers and made public statements on the negative effects of the retirement tax in Europe on pension funds³⁰.

In relevant part, Pensions Europe has stated on November 15, 2018:

“The Spanish FTT would be disastrous to pensions savings, as it will be the pension funds, and ultimately their participants who will bear the costs of the tax as it will be passed on in part or completely by financial intermediaries to end-investors. The tax level of 20 bps by far exceeds execution services fees, which means that is not even possible for financial intermediaries to absorb the costs, should they wish to do so. Quantitative estimates provided by INVERCO show that investments in Spanish listed equity by pension funds over the life span of a participant’s accumulation phase may lose by 17% (or by 29.4%, if the lost profit for non- reinvestment of such tax is considered).”

- Elisa Ricon, Board Member of PensionsEurope

“PensionsEurope is against the establishment of taxes on financial transactions, since such taxes, in their various typologies, end up becoming taxes on savings or pensions, in addition to affecting the efficiency of markets and producing a relocation in the financing flows of the real economy, towards companies established in non-taxed jurisdictions. The FTT would increase the costs, lower the returns and reduce the efficiency of the investment strategies of pension funds which will ultimately lead to lower benefits for pensioners. Furthermore, it would significantly reduce hedging activities of Europe’s pension funds and companies, impacting pension returns, and increase the cost of capital for FTT-zone issuers. FTT-zone member states would become less attractive and the movement of capital, particularly between the FTT zone and the rest of the EU, would be impaired.

The FTT contradicts the EU strategy to create growth and foster investment in the EU, as it would severely affect pension funds in their roles as investors. The FTT would consequently have a negative effect on pension funds’ ability to contribute to the Capital Markets Union objectives. We firmly believe that the FTT would be detrimental to retirement savings and to the real economy.”

³⁰ <https://www.pensionseurope.eu/system/files/PensionsEurope%20press%20release%20on%20FTT%202018-11-27.pdf>(October 2018).

- Matti Leppala, Secretary General/CEO of PensionsEurope

Individual Real-World Impact on Workers' Pension Funds Over \$10,000 Per Person in UK

Finally, it should be noted that in the U.K., where a Stamp Tax, which like the FTT, was paid every time a share was bought or sold, a typical individual worker's pension fund came in between £6,441 and £11,538 lower at retirement, studies show³¹. This is equivalent to the average public pension fund individual recipient being hit by \$10,000 to \$20,000 because of a FTT.

³¹ Stamp tax results in average individual pension fund worker having £6,441 and £11,538 lower at retirement in U.K. See <https://www.telegraph.co.uk/news/uknews/1550451/Scrap-stamp-duty-on-shares-say-experts.html>; See also https://www.pwc.fr/fr/assets/files/pdf/2013/11/pwc_ftt_litterature_review.pdf.

Individual Savers: 401(K) Holders, IRA Savers

MMI studied the impact of the FTT on an individual investor investing in the Federal Thrift Savings Plan. Assuming the investor contributed \$5,000 annually in the target date funds of the Thrift Savings Plan and that the investments of the individual target date funds remain the same over the years, we found that the individual investor would stand to **lose 2% of his or her final portfolio value due to the FTT.**

The FTT would have a negative impact on 401(k) and IRA holders across the country, with a projected cost of **\$552.51 in FTT taxes per year** for an average 401(k) portfolio or IRA plan with \$100,000 in assets. The cost of a FTT over a lifetime of a 401(k) account of this size would be **\$50,351 after 40 years.**

About the 401(k) Industry

As of March 2020, 401(k) plans held an estimated \$5.5 trillion AUM in the U.S. and represented more than 19% of the \$29.1 trillion in U.S. retirement assets. This is an increase from 2010, when 401(k) assets were valued at \$3.1 trillion AUM and represented 17% of the U.S. retirement market³².

The impact of a FTT on American savers including 401(k) holders has been noted to include **a 3% reduction in retirement savings over a working life**, in an analysis by a Democrat-controlled White House cited by The American Retirement Association in this statement:

"Every week millions of Americans sacrifice to set aside part of their hard-earned pay for retirement, investing those savings to help provide a secure financial future," Brian Graff, CEO of the American Retirement Association, explained. "After years of attacking 401(k) plan fees, some members of Congress now want to charge 10 basis points every time a hard-working American contributes out of their pay into their 401(k). And then charge another 10 basis points every time the account is rebalanced. And then, another 10 basis points when that worker retires and sells some of those investments so they can maintain their standard of living."

We're talking about the equivalent of an across-the-board fee increase on 401(k) plans," Graff notes. In fact, based on a 2015 report by the Obama Administration's Council of Economic Advisors on the impact of 401(k) fees, **this tax could reduce an American's retirement savings by as much as 3% over their working life.**

³² "Frequently Asked Questions About 401(k) Plan Research," Investment Company Institute

It appears that some in Congress may think that the only people who invest are super rich but there are 80 million American workers who are investing for their future in their 401(k). At a time when there is so much concern about retirement income adequacy and the impact of 401(k) fees, it's stunning that some members of Congress would attack the retirement savings of hard-working Americans."

- Financial Transaction Tax Attacks Retirement Savings, American Retirement Association, (March 6, 2019), (emphasis added)³³.

Notably, of the 401(k) plans, about 65% of the assets were held in mutual funds. The remaining were held in company stock (stock of the employer), individual stocks and bonds, guaranteed investment contracts (GICs), bank collective trusts, life insurance separate accounts, and other pooled investment products³⁴.

According to the Investment Company Institute (ICI):

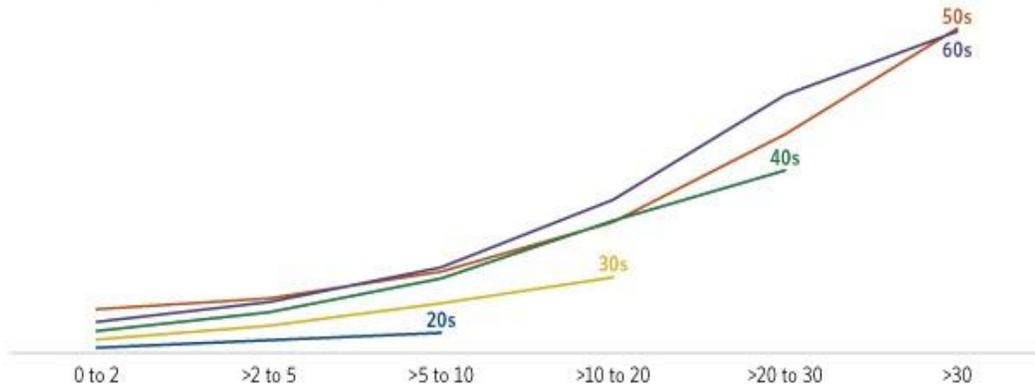
- Average 401(k) account balances varied by participant age and tenure.
- Account balances were higher the longer 401(k) plan participants worked for current employers and the older the participant.
- Participants in their forties with more than two to five years of tenure had an average 401(k) plan account balance of about \$38,000.
- Participants in their sixties with more than 30 years of tenure has an average account balance of \$287,000.
- The median 401(k) plan participant was 45 years old at year-end 2016, and the median job tenure was seven years.

³³ Financial Transaction Tax Attacks Retirement Savings, ARA, (March 6, 2019) at <https://www.usaretirement.org/financialtransaction-tax-attacks-retirement-savings>. The American Retirement Association is comprised of: the American Society of Pension Professionals & Actuaries (ASPPA), the ASPPA College of Pension Actuaries (ACOPA), the National Association of Plan Advisors (NAPA), the National Tax-deferred Savings Association (NTSA), and the Plan Sponsor Council of America (PSCA).

³⁴ Frequently Asked Questions About 401(k) Plan Research," Investment Company Institute at https://www.ici.org/policy/retirement/plan/401k/faqs_401kn (as of July 24, 2019).

401(k) Plan Account Balances Increase with Participant Age and Job Tenure

Average 401(k) plan account balance by participant age and tenure, 2016



The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project. See ICI Research Perspective, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016."

Calculations of FTT Impact on 401(k) Plan or IRA Plan

The following is an example of what the projected tax liability would be for an individual 401(k) Plan Portfolio of \$100,000 under “The Inclusive Prosperity Act” (S. 1587). This model assumes that the 401(k) account is comprised of 60% equities, including mutual funds and employer stock, and 40% in fixed income (including bonds, debt), such that:

- \$60,000 equities (including mutual funds and employer stock) x 0.67 turnover x 50 basis points = \$268
- \$20,000 in fixed income/bonds/debt x 0.67 turnover x 10 basis points = \$13

For example, under this type of tax, **for every \$100,000 of assets** in a 401(k) plan, the saver would owe **\$281 in FTT taxes in a given year**.

Utilizing the AARP’s Compound interest calculator³⁵, the following calculation shows that over 40 years, paying in \$268 a year, at 7% annual growth (the average for pension funds) that this would **yield a total value of \$64,232 after 40 years**.

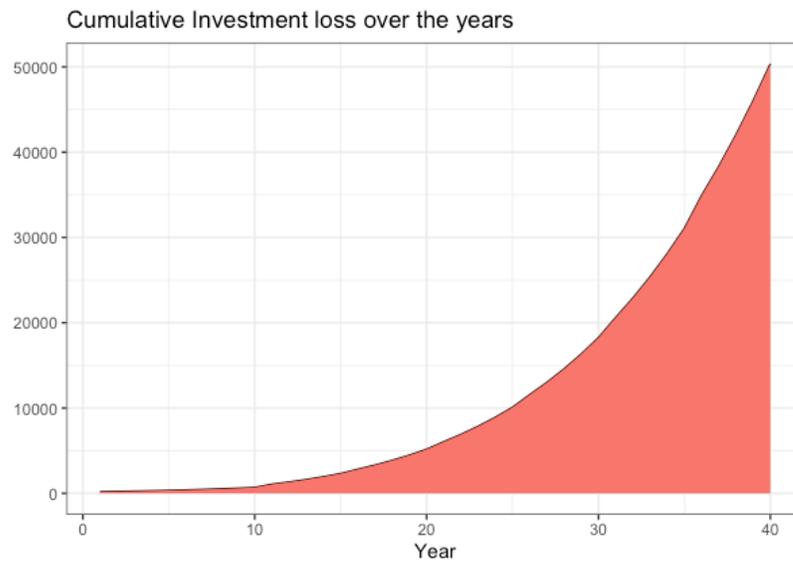


The model assumes that the 401(k) account is invested in the age-based funds available to Federal employees under Thrift Savings Plan. The age-based funds start with almost 99% invested in equities which are slowly rotated to almost 50% by the end of 40 years.

³⁵ [https://www.aarp.org/money/investing/investment_return_calculator/\(July 30, 2019\).](https://www.aarp.org/money/investing/investment_return_calculator/(July 30, 2019).)

The calculations involve the tax in rotating out of the funds at end of each cycle and the turnover while invested in the funds.

Under this type of tax, **for every \$100,000 of assets** in a 401(k) plan, the saver would owe **\$552 on average in FTT taxes in a given year**. Based on our calculations, based on the average annual returns for the age-based funds, we estimate that this would **yield a total value of \$50,351 after 40 years**.



Methodology

The following are key metrics that a Portfolio would need to identify to calculate their FTT burden:

Asset Classes. As certain asset classes are calculated differently, the Portfolio would need to calculate the distribution of equities, debt, and derivative tax rates to determine FTT liability. For purposes of this report's calculations, the following assumptions are used:

- Individual 401(k) Plans –Distribution according to popular age-based 401(k) plans like Thrift Savings Plan, e.g. combination of equities and bonds.
- 529 Plans - Distribution of equities, bonds, and derivatives, with percentages weighted according to publicly available reports and data.
- Public Pension funds – Distribution of equities, bonds and derivatives, based on publicly available reports and data.
- University Endowments (large) – distribution of 30% equities, 30% bonds and derivatives, and 40% other – e.g. private equity, VC, real estate
- University Endowments (small) – distribution of 60% equities, 30% bonds, 10% derivatives

We have used data from the most recent annual report of public pension funds, 529 plans and ABLE plans for their asset distribution. Notably, the types of asset allocations vary between individual Portfolios, and the numbers utilized are intended to be directionally correct, utilizing hypothetical allocations and assumptions.

Turnover. When calculating what a Portfolio would owe under a FTT, the Portfolio would need to utilize the "turnover" of the value of the portfolio (also called the "notional value", rather than the total assets in the portfolio. This is essentially the frequency with which a fund is rebalanced, or the value is turned over.

Example: Portfolio has \$2 billion in stock assets value, and has a turnover rate of 67%, meaning that each of those assets are bought and sold 0.67 times a year (e.g. for managing risk, buying options, other risk management; this is the average for mutual funds); the transaction tax would be on the \$1.34 billion in stock assets (the "turnover" or "notional value") rather than the total \$2 billion under management. This is arrived at by multiplying \$2 billion times 0.67 turnover rate for the value that would be subject to the FTT.

Average turnover rates have varied for mutual funds over the past few decades between 67% and highs of 162%. For example, for mutual funds, in the 2000s, turnover was 97%, and this exploded

to 162% in the early 2000s, according to Morningstar. As of 2013, actively managed mutual funds had an overall turnover rate of 85%. The more recent turnover rate average is 67%³⁶.

For purposes of this Report's calculations, research was conducted on average turnover rates in various investment vehicles, as well as historically available data. The average turnover rates were calculated from the annual reports or Morningstar website data for the funds the plans were invested in. Wherever data was not available, the following assumptions are used for utilized:

- Individual 401(k) Plans – turnover of 67% for equities, 117% for bonds and 95% for derivatives
- 529 College Savings Plans – turnover of 67% for equities, 117% for bonds and 95% for derivatives
- Public Pension Funds – turnover range of 67% for equities, 117% for bonds and 48% to 95% for derivatives
- University Endowments – turnover of 67% for equities, 117% for bonds and 95% for derivatives

Notably, investors utilizing ETFs or other pooled investment vehicles must factor in a higher rate of turnover, as those products are continuously rebalanced.

Payor of FTT: Buyer, Seller, or Intermediary (with Cost Passed on to Buyer/Seller). Some FTT bills tax the buyer or seller (or both) directly; other proposals have the transaction/exchange or broker (if off exchange) pay, with the FTT cost effectively passed on to the buyer/seller of the transaction.

Note: On various proposals, the FTT may be paid for by the seller, the buyer, or both; or, the fee may be imposed on an exchange or broker as an intermediary, with the cost in essence passed down to the end user (the 529 plan, university endowment, pension plan or 401(k) holder).

³⁶ <http://web.premierfinancial.com/blog/bid/74369/the-rational-investor-what-s-the-cost-of-high-portfolio-turnover> (During the 1990s, the average annual portfolio turnover of actively managed, large growth funds was 97%; in the 2000s, this exploded up to 162%, according to Morningstar. As of 2013, actively managed mutual funds have an overall turnover rate of 85%) ("Equity fund turnover rates. Participants in 401(k) plans tend to own equity funds with lower-than-average turnover rates. The industrywide simple average turnover rate in equity funds was 86 percent in 2015 (Figure 9) However, mutual fund shareholders tend to invest in equity funds with much lower turnover rates, as reflected in the lower industrywide asset-weighted average turnover rate of 44 percent. The average turnover rate for equity funds selected by 401(k) plan participants in 2015 was lower still: 32 percent on an asset-weighted basis.") at <https://www.ici.org/pdf/per22-04.pdf>.

Conclusion

An analysis of the facts and data regarding current proposals for a FTT indicates that **such a proposal would unequivocally act functionally as a “retirement tax,” stripping hard-earned savings from American workers**, of whom a majority believe that saving for retirement and college savings are important life goals.

While the FTT would have some impact on Wall Street firms, the tax would also firmly hit Main Street savers, including those participating in 529 plans, 401(k) plans, IRAs, pension funds, among others.

Moreover, the FTT would reduce liquidity, increase the cost of trading, reduce the volume of trading, and would place a burden on the entire financial ecosystem, reduce capital growth, job growth, and negatively impact America’s competitiveness in a global economy.

While some of the legislative proposals introduced aim to “redistribute” proceeds from a retirement tax to fund government programs, reports conclusively suggest that the FTT would not have the ability to raise the revenue sought by its proponents.