



MODERN MARKETS
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A Study on the Effects of a Retirement Tax / Financial Transaction Tax on Retirement Security, College Savings and University Investment

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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.

An Introduction

The retirement tax, known as the financial transaction tax (FTT), has been presented by some politicians in Washington as a “tax on Wall Street greed,” when in fact the tax would hit the entire financial and investing ecosystem, including Americans at all income levels saving for retirement or for their children’s college education. The following study provides a comprehensive analysis of the projected impact of the retirement tax (or FTT) on holders of 401k plans, 529 college savings plans, public pension plans, university endowments, among others.

The FTT once existed in the U.S., but was abolished in 1965 after a Democratic Congress and President realized it was bad tax policy. As further detailed in this report, the “retirement tax” is unsound tax policy with a proven track record of failure in the jurisdictions in which it has been tested, including raising only 3% to 15% of the target stated revenue in some countries, as well as reducing trading volume by 50 to 80%, and increasing the cost of trading for all investors.

Benefits of HFT

50%

Reduced trading costs
to investors over past
decade

30%

More savings in
Americans' retirement
accounts over lifetime

About the Author

The following analysis was prepared by **Modern Markets Initiative** (“MMI”), the education and advocacy organization devoted to the role of technological innovation in creating the world’s best markets. MMI supports well-regulated markets, responsible innovation, and having a strong cop on the beat, and strongly opposes any illegal trading activity, including front-running, illegal spoofing, or other illegal market manipulation.

High frequency trading (HFT) firms, whom MMI represents, are liquidity-providing intermediaries that have reduced the cost of trading by 50% over the past decade, yielding 30% more savings in Americans’ retirement accounts over a lifetime. Electronic intermediaries such as high frequency traders play a critical role in democratizing prices.

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. High frequency traders have dramatically lowered spreads for all investors because of the efficiency they bring to the markets.

Highlights: A Tax on Retirement and Savings

This report is an analysis of the projected economic impact of The Inclusive Prosperity Act of 2019's (S. 1587) 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 would be projected to owe \$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 tax would have the following projected impact on actual pension fund plans:

- State employee fund ~ \$300B AUM – Yearly Cost: \$719.8 million
- Federal employee fund ~ \$450B AUM – Yearly Cost: \$265.4 million
- State/muni employee fund ~ \$25B AUM – Yearly Cost: \$206.3 million
- Police and Firefighter fund ~ \$180B AUM – Yearly Cost: \$310.7 million
- City employee fund ~ \$150B AUM – Yearly Cost: \$1.3 billion
- State Teachers fund ~ \$125B AUM – Yearly Cost: \$307.8 million

401k Retirement Plans and IRA Plans: The average 401k has a balance of about \$103,700^[1] 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 \$281 a year, or \$64,200 in "retirement tax" over a 40-year lifetime savings on IRAs and 401ks.

[1]"Here's the average 401(k) balance by age and how to raise your" (July 30, 2019). At <https://www.bankrate.com/retirement/average-401k-balance-by-age/>.

U.S. Saving Priorities

A Majority of Americans are Invested in the Stock Market for Retirement and College Savings

Data shows that a majority of Americans prioritize saving for a secure retirement and paying for college:

- More than half of Americans age 22 to 74 think about retirement at least four times per week. [2]
- More than half - about 52% - of Americans are invested in the stock market.[3]
- More than 44% of Americans have 529 College Savings plans. [4]
- About 57% of Americans say that saving for retirement is their top financial priority. [5]
- Many Americans have chosen public sector jobs to enjoy public pension plan benefits for a secure retirement; 83% of state and local government employees participated in a defined benefit (DB) pension plan in 2018, of the 94% with access to such plans. [6]
- Public and private university endowments have been a tool for helping Americans afford college, with \$60.0 billion in grant aid provided in 2017-18, [7] 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. [8]

[2] "Many Americans dream of retirement but lack a real game plan, survey finds," CNBC (Dec. 4, 2018) at <https://www.cnbc.com/2018/12/04/many-americans-dream-of-retirement-but-lack-a-game-plan.html>

[3] "Just Over Half of Americans Own Stocks, Matching Record Low," Gallup Poll. (April 20, 2016) at <https://news.gallup.com/poll/190883/half-americans-own-stocks-matching-record-low.aspx>

[4] "29 savings plan balances hit an all-time high," CNBC (September 25, 2018), at <https://www.cnbc.com/2018/09/25/college-savings-plan-balances-hit-all-time-high.html>

[5] "What Are the Retirement Statistics?" RothIRA.com, (July 30, 2019) at <https://www.rothira.com/retirement-statistics>

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

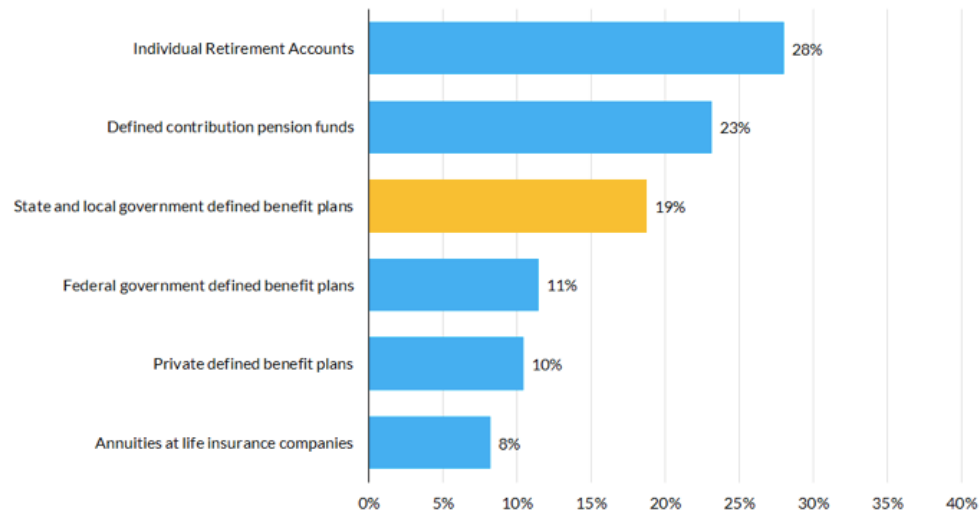
[7] "Trends in Student Aid 2018" at <https://trends.collegeboard.org/sites/default/files/2018-trends-in-student-aid.pdf>

[8] 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 Labor: [9]

Household Retirement Assets

Share of Total Retirement Assets by Asset Categories, Quarter 3 of 2017



Source: Board of Governors of the Federal Reserve System, Financial Accounts of the United States - Z.1, L. 177, L.118.b, L.119.b, and L.120.b, March 2018 (accessed January 2019). **URBAN INSTITUTE**

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. [10]

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

[10] "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).

The Retirement Tax: How the FTT Has Failed Before ⁵

A retirement tax or financial transaction tax (FTT) is a tax placed on a specific type of monetary transaction for a particular purpose. An 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) The 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.

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 an 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 an FTT: bond trading fell by 85%; futures trading fell by 98%; and more than 50% of all Swedish trading moved to London. [11]
- When Germany enacted an FTT: German public companies moved to London and trading in German bonds sank as much as 50%. [12]
- When Italy enacted an FTT: Italian stocks fell 34.2% within two years.

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

- When Sweden enacted an 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 an 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 an 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.**

[11] "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>

[12] "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>

Current Retirement Tax Proposal

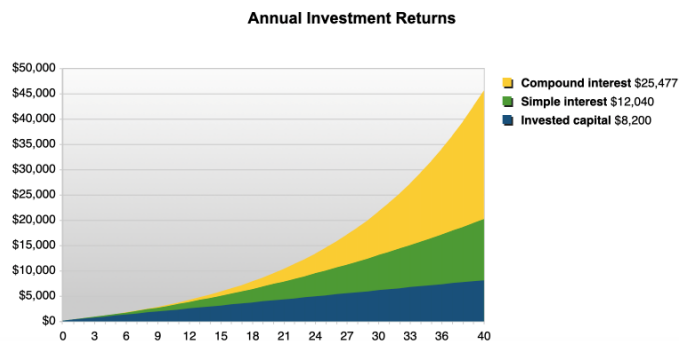
Under the current pending FTT draft proposal in the US, "The Inclusive Prosperity Act"(S. 1587), the following tax rates would apply across three different asset classes:

- 50 basis points on equities – e.g. any share of stock in a corporation
- 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 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.[13]

After 40 years you could have \$45,716.81.

Your original investment of \$200.00 plus your annual investments of \$200.00 could be worth \$45,716.81 after 40 years. This assumes an annual rate of return of 7% and all of your annual investments happen at the beginning of the year and are increased with inflation. All values are shown before inflation is taken into account.



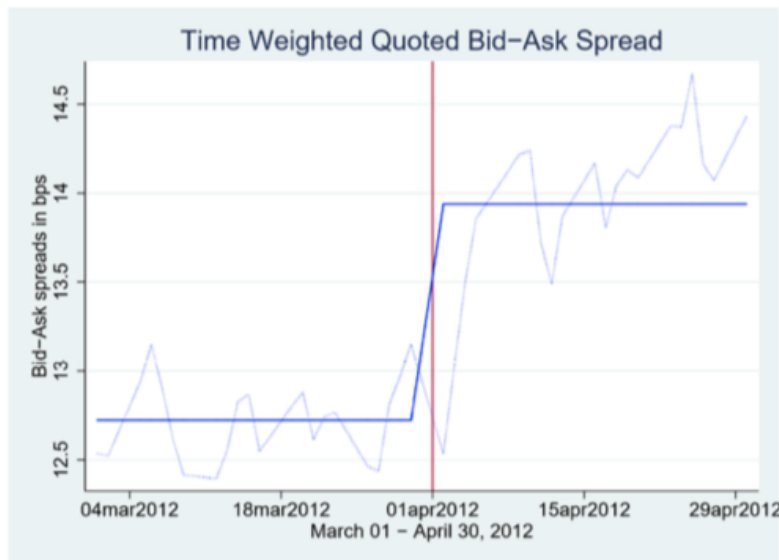
[13] Calculation: Over lifetime savings of 40 years, it is estimated that this would add up to over \$40,000 in FTT out of the initial investment of \$100,000 shares. This assumes the following: An average of \$100,000 is invested in \$80k stocks; The portfolio has a .5 turnover rate (e.g. conservative, 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.

[14] AARP Calculator at https://www.aarp.org/money/investing/investment_return_calculator/

[15] Menkveld, Albert J., "The Economics of High-Frequency Trading: Taking Stock" (June 1, 2016). Annual Review of Financial Economics, Volume 8, Forthcoming. Available at SSRN: <https://ssrn.com/abstract=2787542> (Professor Albert J. Menkveld conducted a survey of the academic literature on HFT. He read 100+ manuscripts to identify the economic arguments for and against HFT. He concludes that electronic markets and HFTs arrived and coincidentally transaction costs declined for investors. This suggests the identified economic benefits of HFTs outweigh their economic costs; In the decade of migration to electronic trading and HFT arrival, transaction cost decreased by over 50% for both retail and institutional investors.")

KEY FTT IMPACT: WIDER SPREADS

A wider "spread" means greater cost of trading for all investors.[16]



CONCEPT OF THE SPREAD: A key impact of an 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. [15]

FTT INCREASES SPREADS = HIGHER TRANSACTION COSTS. Historically, introducing additional costs on the stock 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, 2019. 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.

[17] 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.

[16] Time Weighted Bid Ask Spread Source: TABB Group at <https://www.modernmarketsinitiative.org/hft-cheaper-trading-more-money-in-retirement-accounts>.

[17] 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**.^[18]

[18] “(Financial transaction taxes) wind up being paid for by the mom-and-pop investors at the end of the day.” James J. Angel, Associate Professor of Finance, Georgetown University, at <https://www.modernmarketsinitiative.org/archive>.

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. In 2018, over 13.6 million families utilized 529 tax-advantaged savings plans for educational expenses. The total assets under management in 529 plans reached \$328.9 billion, according to a prior report from the College Savings Plans Network.

Almost every state has a 529 plan. Among the largest 529 Plans are:

- Virginia's College America— over \$64 billion in assets under management (AUM);
- New York's 529 College Savings Program Direct Plan – over \$24 billion in AUM
- The Vanguard 529 Plan in Nevada – over \$17.9 billion in AUM
- The UNIQUE College Investing Plan in New Hampshire: – \$12.7 billion in AUM
- Utah's My529 – \$12.6 billion in AUM

For a 529 Plan Portfolio with \$12 billion in assets under management, the projected impact of the "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 also account for increased transaction cost 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 instate tuition for approximately 1,906 students per year. Note the average tuition of a public state college is \$9,970 for instate residents.[19] This would mean that the FTT liability of \$19 million would consume the equivalent of full instate 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 year.[20] 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.

[19][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-average-tuition-is-$9,970-for-state-residents-at-public-colleges)).

[20] <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.")

University Endowments

There is over \$350 billion invested collectively in public and private university endowments, of which \$163 billion is comprised of public university endowments.[21] If an 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, or the equivalent of 3,227 college scholarships in a given year.

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. [22] 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.

Number of Respondents* to the 2104 NACUBO-Commonfund Study of Endowments, and Total Endowment Market Values, by Endowment Size and Institution Type

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				
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%

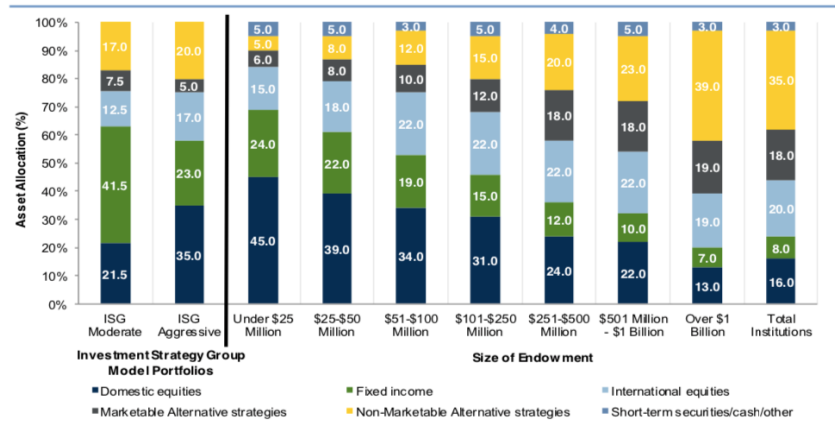
[21, 22] See NACUBO-TIAA Study of Endowments, as of 2015. Also, see “Snapshot of University and College Endowments” at <http://conversableeconomist.blogspot.com/2015/02/a-snapshot-of-university-and-college.html>. [2] See NACUBO-TIAA Study of Endowments, as of 2015. Also, see “Snapshot of University and College Endowments” at <http://conversableeconomist.blogspot.com/2015/02/a-snapshot-of-university-and-college.html>.

[23] See NACUBO-TIAA Study of Endowments, and Total Endowment Market Values, by Endowment Size and Institution Type Respondents to 2014 Study.

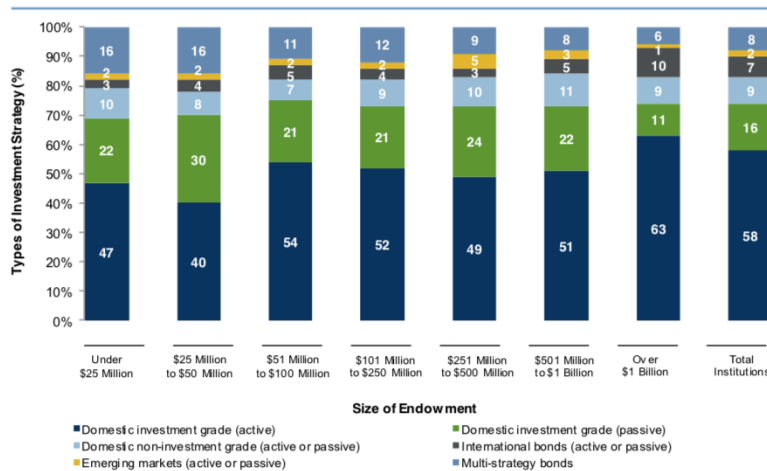
The investment strategy of university endowments tends to vary according to the endowment's size, regardless of whether the endowment is with a public or private university. The calculations in this study utilize trends in the recent 2018 NACUBO study on asset allocation variations according to endowment 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 strategies. [24]

Asset Allocation of Model Educational Endowment Portfolios: 2018 NACUBO Study

Asset Allocation of Investment Strategy Group (ISG) Model Portfolios Compared to Educational Endowments¹



Fixed Income Asset Mix^{1,2}



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:

- o Hedge fund investments
- o Private equity (LBOs, mezzanine, M&A funds, and international private equity)
- o Marketable alternative strategies (hedge funds, absolute return, market neutral, long/short, 130/30, and event-driven and derivatives);
- o Venture capital;
- o “Cash equivalents” – e.g. Private equity real estate; venture capital.

[24] 2018 NACUBO-TIAA Study of Endowments. http://products.nacubo.org/index.php/nacubo-research.html?_ga=2.65043558.919868115.1566583562-1491573172.1566583562.

Smaller endowments (under \$250 million AUM)

- o 60% equities
- o 20-40% debt
- o 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:

- o \$6 billion stocks x .67 turnover x 50 basis points = \$20 million
- o \$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 \$8,366.00.[25] Assuming that the university awards scholarships in this denomination, the average number of university scholarships that an 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 Assets Under Management, for example, the projected impact of the “The Inclusive Prosperity Act”(S. 1587) is \$67,000 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).

The calculations are as follows:

- o \$150 million equities x 0.67 turnover x 50 basis points = \$500,000
- o \$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 scholars

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

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 0.472 to 0.51 for public pension funds**, utilizing data collected from mid-size pension funds, depending on asset classes. 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.

Model City Firemen Fund (\$345 Million AUM) = \$429,000 Projected Annual FTT

The following is an economic analysis of a Model City Firemen Pension Fund Portfolio with \$345 million AUM under the “The Inclusive Prosperity Act”(S. 1587).

The calculations are as follows:

- \$161 million stocks x 0.511 turnover x 50 basis points = \$412,000
- \$36 million in fixed income /debt x 0.472 turnover x 10 basis points = \$17,000
- \$0 million in derivatives x 0.511 turnover x 1/2 basis point = \$0.00
- \$148 million in cash equivalent (or real estate, other assets not subject to FTT)

Table: Sample Financials of Public Pension Fund

	Notional Transaction Amounts by Asset Class				Totals
	Equities	Fixed Income	Derivatives	Cash Equivalents	
Abs Sum	\$161,280,263	\$ 35,975,980	\$ -	\$ 147,969,625	\$ 345,225,868
Purchases	\$ 78,789,365	\$ 18,905,144		\$ 77,762,374	\$ 175,456,883
Sales	\$ 82,490,898	\$ 17,070,836		\$ 70,207,252	\$ 169,768,986
Tax Rate	0.5%	0.1%	0.005%		
Tax Owed on Sales (FY)	\$ 412,454	\$ 17,071	\$ -	\$ -	\$ 429,525
Projected Spread Increase (% of tax)	50%	50%	50%	50%	
Increased Spread Cost (FY)	\$ 403,201	\$ 17,988	\$ -		\$ 421,189
Total Economic Effect (FY)	\$ 815,655	\$ 35,059	\$ -	\$ -	\$ 850,714

It is estimated that this pension fund would owe about \$429,000 in annual FTT a year, with widened spreads of about \$423,000 a year, for **a total economic impact of \$850,000 a year.**

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 0.51, based on analysis of city pension funds that have \$161,280,263 AUM in a given year, of which \$82,490,898 were sold in a given year. 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.

West Coast State Public Pension Plan \$68 Billion AUM = \$132 Million Annual FTT

The following is an economic analysis of a Model West Coast State Public Pension Plan with \$68 billion in assets under management under the "The Inclusive Prosperity Act"(S. 1587).

The calculations are as follows:

- \$23 billion public equity stocks x .537 turnover x 50 basis points = **\$62 million**
- \$22 billion private equity stocks x .480 turnover x 50 basis points = **\$53 million**
- \$7.8 billion in alternative investments x 0.227 turnover x 50 basis points = **\$8.8 million**
- \$15.5 million in fixed income/debt x 0.542 turnover x 10 basis points = **\$8.36 million**
- \$1.97 million in derivatives x .476 turnover x 1/2 basis point = **\$47,000**

Sanders/Elison	Notional Transaction Amounts by Asset Class					Totals
	Public Equity	Private Equity	Fixed Income	RealEstate	Alternative Investments	
Abs Sum	23,109,288,636	22,032,493,063	15,401,545,868	1,977,807,031	7,815,577,818	70,336,712,416
Purchases	10,688,037,763	11,446,175,057	7,045,276,215	1,036,919,462	6,035,616,024	36,252,024,521
Sales	12,421,250,873	10,586,318,006	8,356,269,653	940,887,569	1,779,961,794	34,084,687,895
Tax Rate	0.500%	0.500%	0.100%	0.005%	0.500%	
Tax Owed U.S. (2015)	62,106,254	52,931,590	8,356,270	47,044	8,899,809	132,340,967
Shares Bought	214,566,383	229,786,274	141,436,573	20,816,549	121,167,264	
Projected Trading Decline	50%	50%	50%	50%	50%	
Deadweight Quantity	107,283,191	114,893,137	70,718,286	10,408,274	60,583,632	
Buyer inelasticity	100%	100%	100%	100%	100%	
Deadweight Loss	26,720,094	28,615,438	3,522,638	25,923	15,089,040	\$ 73,973,133
Total Economic Effect	88,826,349	81,547,028	11,878,908	72,967	23,988,849	\$ 206,314,101
Future Value of Tax Payments						(56,193,303,321)
Active contributors						338,927
Tax burden/member						\$ (165,797.66)
Turnover Rate	0.537500356	0.480486615	0.54256045	0.475722634	0.227745387	0.484593134

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, for equities it is assumed that the turnover rates are in the range of 0.47 to 0.53 depending on asset class for public equity, private equity, fixed income; it is assumed that the turnover rate is 0.227 for alternative investments.

Under this model, it is estimated that this pension fund would owe **\$132 million in annual FTT.**

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

Examples of Projected Impact of an 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 of assets managed for future pension payments, has published position papers and made public statements on the negative effects of the retirement tax FTT) in Europe on pension funds.[26]

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 (October 2018)

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

"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."

- Matti Leppala, Secretary General/CEO of PensionsEurope[27]

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 show.[28] This is equivalent to the average public pension fund individual recipient being hit by \$10,000 to \$20,000 because of an FTT.

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

[28] 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: 401K Holders, IRA Savers

The FTT would have a negative impact on 401K and IRA holders across the country, with a projected cost of **\$281.00 in FTT taxes per year** for an average 401k portfolio or IRA plan with \$100,000 in assets under management. The cost of an FTT over a lifetime of a 401k account of this size would be **\$64,232 after 40 years**.

About 401K Industry. As of March 2019, 401k plans held an estimated \$5.7 trillion in assets under management in the U.S. and represented more than 19 % of the \$29.1 trillion in US retirement assets. This is an increase from 2010, when 401(k) assets were valued at \$3.1 trillion in assets under management and represented 17% of the U.S. retirement market.[29]

The impact of an FTT on American savers including 401k 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**.

"It appears that some in Congress may think that the only people who invest are super rich," Graff concludes. "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, ARA, (March 6, 2019), (emphasis added). [30]

[29] "Frequently Asked Questions About 401(k) Plan Research," Investment Company Institute

[30] Financial Transaction Tax Attacks Retirement Savings, ARA, (March 6, 2019) at <https://www.usaretirement.org/financial-transaction-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).

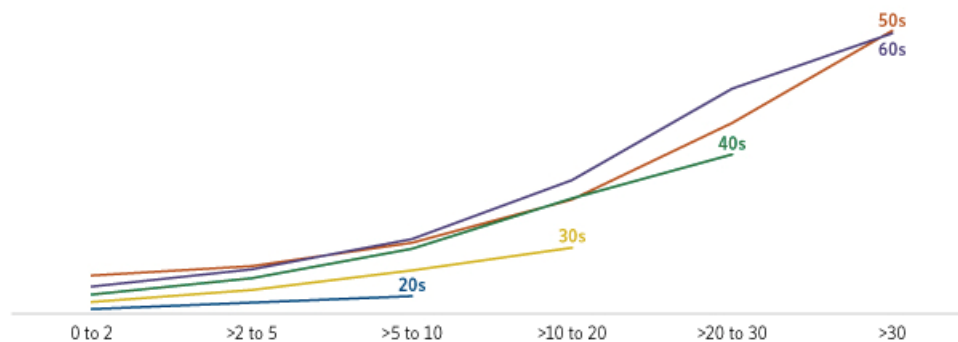
Notably, of the 401(k) plans, about 65% of the assets were held in mutual funds. The remaining were held in company stock (stock of the employer), individual stocks and bonds, guaranteed investment contracts (GICs), bank collective trusts, life insurance separate accounts, and other pooled investment products.[31]

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.
 - o 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;
 - o Participants in their sixties with more than 30 years of tenure has an average account balance of \$287,000.
 - o The median 401(k) plan participant was 45 years old at year-end 2016, and the median job tenure was seven years.[32]

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."

[31, 32] 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).

Calculations of FTT Impact on 401k Plan or IRA Plan

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

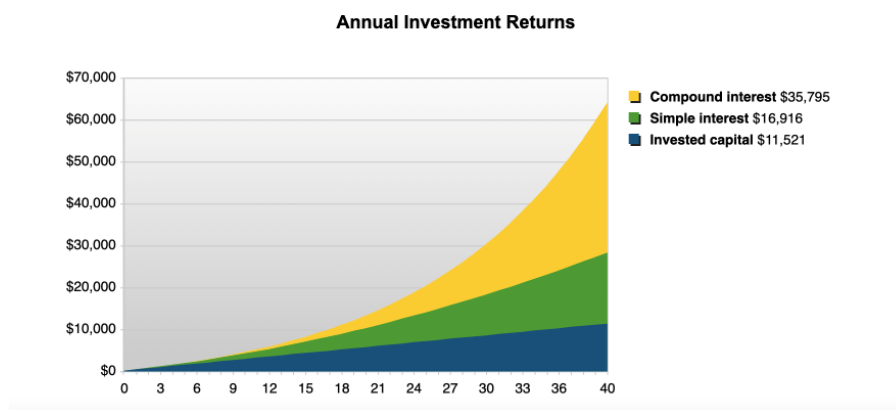
- \$80,000 equities (including mutual funds and employer stock) x 0.67 turnover x 50 basis points = \$268
- \$20,000 in fixed income/bonds/debt x 0.67 turnover x 10 basis points = \$13

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

Utilizing the AARP's Compound interest calculator, 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**.

After 40 years you could have \$64,232.11.

Your original investment of \$281.00 plus your annual investments of \$281.00 could be worth \$64,232.11 after 40 years. This assumes an annual rate of return of 7% and all of your annual investments happen at the beginning of the year and are increased with inflation. All values are shown before inflation is taken into account.



Source: Savings Calculator[33]

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

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:
 - o Individual 401k Plans – distribution of 60% equities, 40% bonds.
 - o 529 Plans - distribution of 40% equities, 40% bonds, and 20% derivatives
 - o Public Pension Funds - distribution of 40% equities, 40% bonds, and 20% derivatives
 - o University Endowments (large) – distribution of 30% equities, 30% bonds and derivatives; and 40% other – e.g. private equity, VC, real estate.
 - o University Endowments (small) – distribution of 60% equities, 30% bonds, 10% derivatives

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 an 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/ 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.

Historically, 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%.[34]

[34]<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>.

- 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 following assumptions are used for utilized:

- o Individual 401k Plans – turnover of 67%
- o 529 Plans - turnover of 67%
- o Public Pension Funds – turnover of 48-58%
- o University Endowments– turnover of 67%

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 fund, university endowment, teacher Pension Plan).

Conclusion

An analysis of the facts and data regarding current proposals for an 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 participating in 529 plans, 401k plans, IRAs, individual savings accounts, pension fund participants, 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.