October 8, 2015

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The Financial Transaction Tax

An Old Solution to a New Problem

Acknowledgments

This report was written by Taylor Lincoln, research director for Public Citizen's Congress Watch division, and edited by Congress Watch Deputy Director Susan Harley.

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Public Citizen's Congress Watch
215 Pennsylvania Ave. S.E.
Washington, D.C. 20003
P: 202-454-5139
F: 202-547-7392
http://www.citizen.org

Proposals to tax financial transactions, such as sales of stocks, have commanded attention in recent years, especially since the financial crisis of 2008.

These proposals typically call for a tax on stock sales that is so small that ordinary investors would hardly notice it but nevertheless raises substantial revenue, largely from high-volume traders.[1] Aside from taxing sales of stock, financial transaction tax proposals also call in varying ways for taxing transactions in bonds, derivatives and other financial products.

Sen. Tom Harkin (D-Iowa) (now retired) and Rep. Peter DeFazio (D-Ore.) proposed legislation in 2013 and in earlier sessions of Congress that would have taxed stock transactions at 0.03 percent (3 cents on every $100).[2] The Harkin-DeFazio proposal would have generated $352 billion over 10 years, according to analysis that the Joint Committee on Taxation furnished to Harkin and DeFazio in 2011.[3]

Vermont Senator and Democratic presidential candidate Bernie Sanders and Rep. Keith Ellison (D-Minn.) favor a significantly larger financial transaction tax of 0.5 percent, or 50 cents on every $100, for stock trades. Their proposals also call for taxes of 0.1 percent for bond trades, and 0.005 for derivative trades.[4]

Former President George H.W. Bush (R) and former Senate Majority Leader Robert Dole (R-Kan.) supported versions of financial transaction taxes in the early-1990s.[5] Richard Darman, director of the Office of Management of Budget under the first President Bush and Bush I Treasury Secretary Nicholas Brady proposed a financial transaction tax of 0.5 percent on stocks and bonds.[6]

A proposal has been pending since 2014 in the European Union to implement a financial transaction tax, tentatively set at 0.1 percent on sales of stock and at a lower rate for

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[1] TAYLOR LINCOLN, PUBLIC CITIZEN, A MATTER OF PERSPECTIVE ADDED COSTS FROM A FINANCIAL TRANSACTION TAX WOULD BE MINUSCULE COMPARED TO FEES INVESTORS ALREADY PAY (March 12, 2014), http://bit.ly/1izXoH9. Report compares existing transaction costs to prospective additional costs posed by a 0.03 percent FTT.

[2] *S.410 – Wall Street Trading and Speculators Tax Act* (introduced Feb. 28, 2013), http://1.usa.gov/1guzFGk.

[3] Office of Rep. Peter DeFazio (D-Ore), Press Release, *Memo: Joint Tax Committee Finds Harkin, DeFazio Wall Street Trading and Speculators Tax Generates More Than $350 Billion* (Nov. 9, 2011), http://1.usa.gov/KgULbb.

[4] Alan K. Ota, *Sanders Presses for Vote on Financial Transaction Tax*, ROLL CALL (June 24, 2015), http://bit.ly/1guzZF0 and *H.R.1579 - Inclusive Prosperity Act of 2013* (introduced April 16, 2013), http://1.usa.gov/1NG8erI.

[5] *See*, *e.g.*, MARK P. KEIGHTLEY, A SECURITIES TRANSACTION TAX: FINANCIAL MARKETS AND REVENUE EFFECTS, CONGRESSIONAL RESEARCH SERVICE (June 12, 2012), http://bit.ly/1Lc4bgd and PROPOSED TRANSACTION TAX DOESN'T 'MAKE SENSE,' AMEX CHAIRMAN SAYS, SECURITIES WEEK (June 11, 1990) and William G. Laffer III, *The Worst Tax Hike* (Executive Memorandum #278 on Taxes), HERITAGE FOUNDATION (Aug. 9, 1990), http://herit.ag/1L2pWjt.

[6] Scott W. MacCormack, *A Critique of the Reemerging Securities Transfer Excise Tax*, 44 THE TAX LAWYER 927-941 (Spring 1991), http://bit.ly/1FQ6FVH.

transactions in financial derivatives.[7] At present, 11 of the 28 EU countries are negotiating an agreement through which they would implement an FTT. The participating countries account for about 90 percent of the European Union's aggregate GDP.[8] They are negotiating under the auspices of the European Union's "enhanced cooperation" permissions, which allow a subset of the EU's members to enter into treaties.[9]

European Union Economics Commissioner Pierre Moscovici said in September 2015 that the participating countries were closing in on a deal. "Today, we made important, if not decisive, progress." Moscovici said "This deal is within reach."[10]

Proponents of such taxes typically envision them as serving both as sources of revenue and as dampeners on casino-style trading activities. The relatively new phenomenon of high-frequency trading, in which stocks are bought and sold in millisecond intervals, has altered the way markets work and presented an array of risks and injustices. High-speed traders deploy computers that are programed to buy or sell stocks based on algorithms. Some have estimated that high-frequency trading accounts for up to 60 percent of all stock trades.[11]

The strategies used by high-frequency traders are anathema to the traditional understanding of investment, which is the purchase of goods or assets in the hope that they will generate revenue or appreciate in value in the future.[12] Most people would likely agree that a person would need to retain an asset for longer than a split second for it to count as a legitimate investment.[13]

Certain aspects of high-frequency trading strategies are simply unfair. High-frequency trades are often made on the basis of inside information purchased from markets or discerned by deceptive means on what stocks other investors are attempting to buy or sell. The computer-traders are then able to exploit that information.[14]

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[7] *Capital Markets Union Another Obstacle for FTT*, EURACTIV.COM (Sept. 4, 2015), http://bit.ly/1KoUxX9.
[8] Press release, European Parliament News, *Eleven EU Countries Get Parliament's All Clear for a Financial Transaction Tax* (Dec. 12, 2012), http://bit.ly/1LrRMK0. The participating countries are Austria, Belgium, Estonia, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia and Spain.
[9] Press release, European Commission, *Financial Transaction Tax Under Enhanced Cooperation: Commission Sets Out the Details* (Feb. 14, 2013), http://bit.ly/1KqZeCZ.
[10] *EU Deal on Financial Transactions Tax 'Within Reach': Moscovici*, REUTERS (Sept. 12, 2015), http://reut.rs/1ib0JLP.
[11] *See*, *e.g.*, Tom Polansek, *High-Frequency Trading Does Not Raise Futures Volatility –Study*, REUTERS (Aug. 27, 2013) http://reut.rs/1luzSXF; Matthew Philips, *How the Robots Lost: High-Frequency Trading's Rise and Fall*, BLOOMBERG BUSINESSWEEK (June 6, 2013), http://buswk.co/1ciOiDs.; Charles Duhigg, *Stock Traders Find Speed Pays, in Milliseconds*, THE NEW YORK TIMES (July 23, 2009), http://nyti.ms/1koMVt4; Kambiz Foroohar, *Trading Pennies Into $7 Billion Drives High-Frequency's Cowboys*, BLOOMBERG NEWS (Oct. 6, 2010), http://bloom.bg/1ftPMlx.
[12] *See*, *e.g.*, *Definition of Investment*, INVESTOPEDIA, http://bit.ly/1QkDxpJ.
[13] *High-Frequency Traders Need a Speed Limit*, BLOOMBERG (Jan. 25, 2015), http://bv.ms/1UYLLdL.
[14] Charles Duhigg, *Stock Traders Find Speed Pays, in Milliseconds*, THE NEW YORK TIMES (July 23, 2009), http://nyti.ms/1koMVt4

For instance, if a high-frequency trading computer is aware of a mutual fund attempting to purchase a large block of a certain stock (which would almost inevitably drive that stock's price up marginally), the high-frequency trader can profit by entering an instantaneous order or, even more lucrative, a split second ahead of the other trade. High-frequency traders gain added advantages by locating their operations close to markets' physical locations and implementing other technology to ensure that their orders are received ahead of others, even if only by a millionth of a second.[15]

Aside from being unfair in certain ways, high-frequency trading may also pose a risk of destabilizing markets and putting ordinary investors' funds in jeopardy. On May 6, 2010, the stock market lost 1,000 points in just a few minutes in an episode known as the "flash crash." Regulators subsequently blamed high-frequency trading for exacerbating the volatility. One explanation was that the market had become so dependent on high-frequency traders that a sudden withdrawal of their trading activity (perhaps due to some signal detected by algorithm) could create a false sense of scarcity of demand for stocks, causing prices to plummet.

The U.S. Securities and Exchange Commission and Commodity Futures Trading Commission wrote in analysis of the flash crash: "While the withdrawal of a single participant may not significantly impact the entire market, a liquidity crisis can develop if many market participants withdraw at the same time. This, in turn, can lead to the breakdown of a fair and orderly price-discovery process."[16] Liquidity refers to the ease with which an asset can be bought or sold without significant change to its price.

Some critics have forecast harmful effects on the market if a tax were enacted. But the costs that would be imposed by even the boldest proposals would be less than transaction costs that existed a couple of decades ago. "Transaction costs have indeed fallen dramatically across financial markets over the past 35 years due to advances in information technology, deregulation, and product innovation," International Monetary Fund economist Thornton Matheson wrote in 2011. For example, bid/ask spreads, which refer to the difference in the price to sell a stock or purchase a stock, have fallen from greater than 1 percent to 0.1 percent.[17]

The transaction costs that do remain – including diminished bid/ask spreads, commissions and overhead fees charged by mutual funds – dwarf the fees that investors would pay to

[15] *Id.* and *High-Frequency Traders Need a Speed Limit*, BLOOMBERG (Jan. 25, 2015), http://bv.ms/1UYLLdL.
[16] *Findings Regarding The Market Events of May 6, 2010*, U.S. SECURITIES AND EXCHANGE COMMISSION AND COMMODITY FUTURES TRADING COMMISSION (Sept. 10, 2010), http://1.usa.gov/1YgGopm .
[17] Thornton Matheson, *Taxing Financial Transactions: Issues and Evidence*, IMF Working Paper, INTERNATIONAL MONETARY FUND (2011), http://bit.ly/1KDCGvK.

comply with a modest financial transaction tax, as Public Citizen illustrated in a 2014 report.[18]

A truly minuscule financial transaction tax dating to the 1930s provides funds to operate the Securities and Exchange Commission. But that tax, which currently stands at 0.00184 percent (less than 2 cents for every thousand dollars traded), is just a fraction of even the low end of new proposals for transaction taxes.[19] That tax was forecast to raise $886 million in 2015.[20]

Political observers treat as novel certain recent proposals in the United States for a more significant financial transaction tax. Little attention has been paid to the fact that the United States had a financial transaction tax in place from 1914 to 1965. In its later years, the tax was similar in some respects to that proposed by Harkin and DeFazio.

The rates of the tax varied from 0.02 to 0.06 percent. For most of the time, the tax was levied on the "par value" of a stock, which is the listed value on stock certificates and is usually below market value. Transfers of bonds, as well as new issues of stocks and bonds also were taxed at varying rates. In 1959, the rate of tax on stock transfers was lowered from 0.06 to 0.04 percent but, importantly, was changed to a tax on stocks' market value instead of par value.

Congress repealed the tax in 1965, effective at the end of that year.[21]

The Investment Company Institute, a critic of proposed financial transaction taxes, has characterized the 1965 repeal of the previous financial transaction tax as a response to pragmatic problems posed by the tax. "By the end of 1965 – seven years after the tax base was changed from par value to market value – the tax was viewed by Congress as complicating securities transactions and repealed," the Institute wrote in 2010.[22]

But a review suggests that the Investment Company Institute's conclusion was overblown. The repeal of the financial transaction tax was part of a massive tax overhaul in which

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[18] TAYLOR LINCOLN, PUBLIC CITIZEN, A MATTER OF PERSPECTIVE ADDED COSTS FROM A FINANCIAL TRANSACTION TAX WOULD BE MINUSCULE COMPARED TO FEES INVESTORS ALREADY PAY (March 12, 2014), http://bit.ly/1izXoH9. Report compares existing transaction costs to prospective additional costs posed by a 0.03 percent FTT.

[19] Leonard E. Burman, William G. Gale, Sarah Gault, Bryan Kim, Jim Nunns, and Steve Rosenthal, *Financial Transaction Taxes In Theory And Practice*, TAX POLICY CENTER (URBAN INSTITUTE AND BROOKINGS INSTITUTION) (June 2015), http://tpc.io/1G7dCfz.

[20] *Release No. 34-74057*, U.S. SECURITIES AND EXCHANGE COMMISSION (Jan. 15, 2015), http://1.usa.gov/1KDxfNv.

[21] LEONARD E. BURMAN, WILLIAM G. GALE, SARAH GAULT, BRYAN KIM, JIM NUNNS, AND STEVE ROSENTHAL, TAX POLICY CENTER, FINANCIAL TRANSACTION TAXES IN THEORY AND PRACTICE (June 2015), http://tpc.io/1CKHkp7.

[22] *Fact Sheet: Transaction Tax History: Proposed Securities Transaction Tax Is Far Greater Than Any in U.S. History*, INVESTMENT COMPANY INSTITUTE (Feb. 2, 2010), http://bit.ly/1KjDZTA.

excise taxes of all stripes were cut by $4.6 billion over several years.[23] The aspect of the financial transaction tax that concerned transfers of stocks was yielding only about $20 million per year in revenue (about $155 million today), according to congressional testimony by the president of the New York Stock Exchange.[24]

At the time, the tax code included myriad excise taxes, many of which were instituted to meet special needs arising from World War II and the Korean War. Jewelry, watches, furs, cosmetics, handbags, musical instruments, mechanical pens, playing cards, automobiles and dozens of other products were subject to excise taxes of varying rates.[25] The 1965 tax reform bill eliminated many of these taxes.

Financial transaction taxes do not appear to have been a major point of discussion in the debate over the 1965 bill, nor in the years leading up to it.

In 1964, New York Stock Exchange President Keith Funston testified before the U.S. House Ways and Means Committee as the committee was embarking on a study of excise taxes. Funston asked that the tax on new stock issues be repealed and that certain other exemptions be granted. With regard to the tax on the transfer of stocks, the item that most closely parallels current financial transaction tax proposals, Funston's request was modest. Instead of repeal, he asked that it be reduced from 4 cents per $100 to 3 cents.[26]

Economic data from 1959 to 1965, the years in which the legacy financial transaction tax most closely paralleled current proposals, fail to support claims put forth by critics that a modern day financial transaction tax would be harmful. From 1959 to 1965, the average annual percentage gain in the U.S. gross domestic product was 5 percent.[27] To put that in perspective, the U.S. economy has not expanded by more than 5 percent in a single year since 1983.[28]

The Dow Jones Industrial Average increased by 65 percent (not including gains from dividends) from 1959-65. That was an average of 9.3 percent per year, which most experts would deem healthy.[29]

There were myriad other variables, many of which were undoubtedly far more influential than the financial transaction tax. But these figures indicate that the transaction tax must not have been a significant drag on the economy.

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[23] John D. Morris, *Senate-House Conferees Agree on a $4.6 Billion Excise Tax Cut*, THE NEW YORK TIMES (June 16, 1965).
[24] *Big Board's President Urges Transfer Taxes on Securities Be Cut*, THE WALL STREET JOURNAL (June 29, 1964).
[25] *Id.*
[26] *Id.*
[27] *BEA: GDP Percent Change From Preceding Period*, U.S. BUREAU OF ECONOMIC ANALYSIS, http://bit.ly/1V6mvgx.
[28] *Id.*
[29] *Dow Jones Industrial Average History*, FEDPRIMERATE.COM, http://bit.ly/1Quf55h.

What would have happened if the aspect of the 1965 financial transaction tax that pertained to transfers of stocks had remained in place? We did not consider the would-be revenue concerning transfers of bonds nor new issues of securities. Because financial derivatives were not included in the previous financial transaction tax, we did not consider them for this report, even though they are part of current proposals.

We found that the stock-transfer tax would have generated $335 billion in actual dollars from the half century spanning 1966 to 2014. [See table, page 10] A little more than $296 billion of that revenue would have accrued since 2000, befitting the markedly higher trading volumes and values of stocks since then.

In inflation-adjusted (2014) dollars, the tax would have netted $399.4 billion, of which $333 billion would have accrued since 2000. That would have meant an average of more than $22 billion a year in revenue since 2000.

Actual revenue would have likely been less because the tax would have deterred high-frequency trading activities and may have slightly dampened other trading activities. Robert Pollin and James Heintz in 2011 estimated that a 0.03 percent financial transaction tax (as proposed by DeFazio and Harkin) would reduce stock trading by 3.7 to 10.3 percent, depending on various assumptions on elasticity that have been put forth by other economists.[30] Elasticity in this context refers to the effect that a given change in transaction costs would have on trading levels.

International Monetary Fund economist Thornton Matheson has forecast a higher elasticity level than those modeled by Polin and Heintz. This means that trading would decline further under a 0.03 percent tax using Matheson's assumptions.[31]

Pollin and Heintz predicted a dramatically more significant reduction in trading if a higher financial transaction tax were passed. They estimated that a tax of 0.5 percent, such as that proposed by Sanders and Ellison, would reduce trading by 45 to 83 percent.[32]

Even if trading volume were cut in half by the financial transaction tax, an absurdly high estimate in the context of a 0.04 percent tax that existed in the 1960s, that still would have yielded $200 billion in inflation-adjusted dollars since the 1966 repeal. The tax would have yielded a little more than $165 billion since 2000, an average of $11 billion a year. In

[30] Robert Pollin and James Heintz, *Transaction Costs, Trading Elasticities and the Revenue Potential of Financial Transaction Taxes for the United States*, POLITICAL ECONOMY RESEARCH INSTITUTE (December 2011), http://bit.ly/1Ik77Yh. This model assumes present day transaction costs of 0.25 percent. Pollin and Heintz also modeled the effects of various FTTs if pre-FTT transaction costs were assumed to be 0.5 percent. Under those scenarios, the dampening effect of an FTT on trading levels would be about half as much.
[31] Thornton Matheson, *Taxing Financial Transactions: Issues and Evidence*, IMF Working Paper, INTERNATIONAL MONETARY FUND (2011), http://bit.ly/1KDCGvK.
[32] Robert Pollin and James Heintz, *Transaction Costs, Trading Elasticities and the Revenue Potential of Financial Transaction Taxes for the United States*, POLITICAL ECONOMY RESEARCH INSTITUTE (December 2011), http://bit.ly/1Ik77Yh.

contrast, the budget of the U.S. Securities and Exchange Commission, the chief watchdog charged with ensuring the integrity of stock markets, was only about $1.6 billion in fiscal year 2015.[33]

Conclusion

The economy functioned well during a period of time in which a financial transaction tax with similar characteristics to some currently proposed policies was in effect. The record from the legacy financial transaction tax provides no evidence to suggest that reinstitution of it would have damaging effects on the economy or stock market. If the tax were reinstituted, it would dampen trading strategies that are of dubious social value and would yield revenue to invest in the public good.

[33] *FY 2016 Budget Request and Tables*, U.S. SECURITIES AND EXCHANGE COMMISSION (Feb. 2, 2015), http://1.usa.gov/1YwoJKq.

Would-Be Revenue From 0.04 Percent Financial Transaction Tax (1966 to 2014)

	Value of Sales of Stocks	Would Be FTT Revenue	Value of Sale of Stocks (in 2014 Dollars)	Would Be FTT Revenue (inflation adjusted)*
1966	$123,034,188,000[1]	$49,213,675	$670,564,114,286	$359,587,920
1967	$161,746,000,000[2]	$64,698,400	$898,969,800,320	$458,576,061
1968	$196,358,000,000[3]	$78,543,200	$1,146,440,151,377	$534,310,431
1969	$175,298,000,000[4]	$70,119,200	$1,335,776,077,241	$452,308,963
1970	$131,126,000,000[5]	$52,450,400	$1,130,772,406,757	$320,023,142
1971	$185,031,000,000[6]	$74,012,400	$800,057,854,021	$432,627,149
1972	$204,026,299,000[7]	$81,610,520	$1,081,567,872,000	$462,204,497
1973	$179,000,000,000[8]	$71,600,000	$1,155,511,242,107	$381,763,459
1974	$118,000,000,000[9]	$47,200,000	$954,408,648,649	$226,651,911
1975	$157,000,000,000[10]	$62,800,000	$566,629,776,876	$276,338,677
1976	$195,000,000,000[11]	$78,000,000	$690,846,691,450	$324,523,866
1977	$187,000,000,000[12]	$74,800,000	$811,309,666,081	$292,208,792
1978	$249,000,000,000[13]	$99,600,000	$730,521,980,198	$361,639,656
1979	$300,000,000,000[14]	$120,000,000	$904,099,141,104	$391,299,174
1980	$522,000,000,000[15]	$208,800,000	$978,247,933,884	$599,884,427
1981	$532,000,000,000[16]	$212,800,000	$1,499,711,067,961	$554,207,050
1982	$1,023,000,000,000[17]	$409,200,000	$1,385,517,623,762	$1,003,858,769
1983	$1,004,000,000,000[18]	$401,600,000	$2,509,646,922,280	$954,549,976
1984	$1,260,000,000,000[19]	$504,000,000	$2,386,374,939,759	$1,148,363,272
1985	$1,868,000,000,000[20]	$747,200,000	$2,870,908,180,943	$1,643,951,108
1986	$1,868,000,000,000[21]	$747,200,000	$4,109,877,769,517	$1,613,952,000
1987	$2,492,000,000,000[22]	$996,800,000	$4,034,880,000,000	$2,077,275,042
1988	$1,699,000,000,000[23]	$679,600,000	$5,193,187,605,634	$1,359,981,281
1989	$2,010,000,000,000[24]	$804,000,000	$3,399,953,203,719	$1,534,965,677
1990	$2,153,676,000,000[25]	$861,470,400	$3,837,414,193,548	$1,560,375,338
1991	$2,590,422,000,000[26]	$1,036,168,800	$3,900,938,343,810	$1,801,016,571
1992	$3,077,507,000,000[27]	$1,231,002,800	$4,502,541,428,722	$2,077,139,550
1993	$4,179,743,000,000[28]	$1,671,897,200	$5,192,848,874,925	$2,739,088,274
1994	$4,501,577,000,000[29]	$1,800,630,800	$6,847,720,684,069	$2,876,343,678
1995	$6,207,746,000,000[30]	$2,483,098,400	$7,190,859,194,818	$3,857,209,861
1996	$8,123,748,000,000[31]	$3,249,499,200	$9,643,024,652,598	$4,902,953,745
1997	$11,487,872,000,000[32]	$4,595,148,800	$12,257,384,362,830	$6,777,801,535
1998	$14,903,153,000,000[33]	$5,961,261,200	$16,944,503,836,710	$8,657,945,592
1999	$22,813,331,000,000[34]	$9,125,332,400	$21,644,863,979,190	$12,966,954,928
2000	$35,557,087,000,000[35]	$14,222,834,800	$32,417,387,320,624	$19,553,176,650
2001	$25,636,203,000,000[36]	$10,254,481,200	$48,882,941,626,202	$13,707,537,331
2002	$22,657,944,000,000[37]	$9,063,177,600	$34,268,843,328,108	$11,927,843,075
2003	$22,290,859,000,000[38]	$8,916,343,600	$29,819,607,687,258	$11,474,339,631
2004	$27,090,516,000,000[39]	$10,836,206,400	$28,685,849,077,104	$13,580,307,879
2005	$33,219,676,000,000[40]	$13,287,870,400	$33,950,769,697,067	$16,107,103,364
2006	$43,940,594,000,000[41]	$17,576,237,600	$40,267,758,410,323	$20,639,524,725
2007	$66,135,906,000,000[42]	$26,454,362,400	$51,598,811,811,429	$30,204,685,675
2008	$82,012,446,000,000[43]	$32,804,978,400	$75,511,714,186,301	$36,070,650,973
2009	$59,849,805,000,000[44]	$23,939,922,000	$90,176,627,433,227	$26,417,081,317
2010	$64,008,305,000,000[45]	$25,603,322,000	$66,042,703,293,511	$27,796,657,909
2011	$70,100,192,000,000[46]	$28,040,076,800	$69,491,644,772,352	$29,510,647,870
2012	$59,370,606,000,000[47]	$23,748,242,400	$73,776,619,676,054	$24,486,980,987
2013	$62,899,444,000,000[48]	$25,159,777,600	$61,217,452,468,340	$25,567,916,439
2014	$65,466,822,523,005[49]	$26,186,729,009	$63,919,791,097,859	$26,186,729,009
	$837,204,025,010,005	$334,881,610,004	$998,703,224,629,913	$399,481,289,852

* Adjusted by the Consumer Price Index, provided by the U.S. Bureau of Labor Statistics.

Footnotes for Table

[1] *Id.*
[2] *Id.*
[3] *Id.*
[4] *Id.*
[5] Statistical Abstract of the United States, U.S. Department of Commerce (1973), at 460.
[6] *Id.*
[7] *Id.*
[8] Statistical Abstract of the United States, U.S. Department of Commerce (1980), at 545.
[9] *Id.*
[10] *Id.*
[11] *Id.*
[12] *Id.*
[13] *Id.*
[14] *Id.*
[15] Statistical Abstract of the United States, U.S. Department of Commerce (1990), at 510.
[16] *Id.*
[17] *Id.*
[18] *Id.*
[19] *Id.*
[20] *Id.*
[21] *Id.*
[22] *Id.*
[23] *Id.*
[24] *Id.*
[25] *Select SEC And Market Data Fiscal 2006*, U.S. SECURITIES AND EXCHANGE COMMISSION (2006), at 29, http://1.usa.gov/1KjMZrQ.
[26] *Id.*
[27] *Id.*
[28] *Id.*
[29] *Id.*
[30] *Id.*
[31] *Id.*
[32] *Id.*
[33] *Id.*
[34] *Id.*
[35] *Id.*
[36] *Id.*
[37] *Id.*
[38] *Id.*
[39] *Id.*
[40] *Id.*
[41] *Select Sec And Market Data Fiscal 2104*, U.S. SECURITIES AND EXCHANGE COMMISSION (2014), at 27, http://1.usa.gov/1UY14y6.
[42] *Id.*
[43] *Id.*
[44] *Id.*
[45] *Id.*
[46] *Id.*
[47] *Id.*
[48] *Id.*
[49] *Historic Market Volume Data,* BATS GLOBAL MARKETS (2014) BATS GLOBAL MARKETS (2014).