

Written Testimony of
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COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS SUBCOMMITTEE ON
SECURITIES, INSURANCE, AND INVESTMENT
United States Senate

Computerized Trading: What Should the Rules of the Road Be?
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Chairman Reed, Ranking Member Crapo, and members of the subcommittee:

Thank you for the opportunity to present written testimony on computer-driven trading, and its effects on investors and market stability. I am Micah Hauptman, financial campaign coordinator of Public Citizen's Congress Watch division. Public Citizen is a national nonprofit organization with more than 300,000 members and supporters.

INTRO

Our financial markets are not serving their intended purpose. Markets are supposed to function as intermediaries, connecting investors who provide capital with producers who are able to put that capital to work most efficiently. Such a model serves our long-term economic interests, spurring new innovations and job creation. Yet under our current framework, short-term, often predatory, speculation increasingly drives our financial activities, while long-term, productive investment takes a back seat.

Computer-driven high-frequency trading is exacerbating this misallocation of resources. A few market participants have been able to obtain special access and, in turn, reap favored treatment at traditional investors' expense. Additionally, high-frequency trading imperils the financial system.

The prevalence of high-frequency trading is a relatively new phenomenon, having taken off in the last five years or so. But in its short lifespan, we've already seen the potentially disastrous consequences that can occur because of it. The May 6, 2010 flash crash—in which almost 1,000 points were erased from the Dow Jones Industrial Average and one trillion dollars in wealth momentarily vanished—is the most alarming example. But the August 1, 2012, Knight Capital algorithm “glitch,” in which roughly 150 stocks suffered massive fluctuations, provided another chilling reminder of the lurking dangers that high-frequency trading presents.

We must therefore consider ways to level the playing field so that unfair advantages are not gained and our financial security is safeguarded. One solution that should be considered is a financial speculation tax (FST), also known as a financial transactions tax. A miniscule FST on the sale or transfer of stocks, bonds, and derivatives, such as one the called for by the Wall Street Trading and Speculators Tax Act (S. 1787, H.R. 3313), introduced by Sen. Tom Harkin (D-Iowa) and Rep. Peter DeFazio (D-Ore.), would help to accomplish these goals. It would “throw sand in the gears” of high-frequency trading operations by making their activities less profitable, ultimately reducing the likelihood of such operations distorting markets. Taking the additional step of placing a financial speculation tax on cancelled high-frequency trading orders would make traders pay for their extreme levels of cancellations, which are used to glean crucial market information

that can then be exploited. With altered incentives, short-term speculative trading would decline and traditional long-term investment would flourish.

An additional benefit that must not be overlooked is that an FST has the potential to raise hundreds of billions of dollars. For example, the nonpartisan Joint Committee on Taxation (JCT) scores the Harkin-DeFazio bill as generating \$352 billion in 9 years. Some of this money could be spent to improve regulatory supervision and enforcement of trading activities and market abuses.

1. Basics of High-Frequency Trading

A. Paying for Technological Access

High-frequency trading requires state-of-the-art computers, software, and bandwidth to trade faster than other market participants. Trades are orchestrated by sophisticated quantitative- and algorithm-based programs, which can execute orders in a span of microseconds (millionths of seconds).¹

Essentially, high-frequency trading operations pay exchanges and alternative trading platforms for faster access to information and trade execution speeds. Traders are then able to exploit high-speed data access to gain a competitive advantage over those who have not similarly paid for that access.² For example, traders often rent space from trading platforms to co-locate their computers near the platforms' servers. Doing so takes advantage of physics: being closer to the source means traders are able to send and receive orders faster than others.³

Traders also pay for access to high-speed fiber-optic cable networks. One such network, known as Project Express, is currently being built across the Atlantic Ocean. Once complete, the round-trip journey between New York and London will be shortened by five milliseconds—from roughly 65 to 60 milliseconds.⁴ As a frame of reference, the average time of a human eye blink is between 300 and 400 milliseconds.⁵ The cable will not be

¹ Benoît Lallemand, *Investing not betting: Making financial markets serve society*, FINANCE WATCH, April 2012, <http://bit.ly/KamSkX>.

² Just this week, the NYSE agreed to pay a \$5 million settlement to the Securities and Exchange Commission (SEC) for providing valuable trading data to some customers ahead of others. Jenny Strasburg and Scott Patterson, *NYSE Is Fined in Data Probe*, THE WALL STREET JOURNAL, September 14, 2012, <http://on.wsj.com/R57JuH>.

³ Kristi Oloffson and Stephen Gandel, *High-Frequency Trading Grows, Shrouded in Secrecy*, TIME, August 5, 2009, <http://ti.me/3wo2bC>; Ivy Schmerke, *High-Frequency Trading Shops Play the Colocation Game*, ADVANCED TRADING, October 5, 2009, <http://bit.ly/T0YoVZ>.

⁴ Matthew Phillips, *High-Speed Trading: My Laser Is Faster Than Your Laser*, BUSINESS WEEK, April 23, 2012, <http://buswk.co/JKhrcT>.

⁵ Scott LaFe, *Mindsight: Eye-tracking reveals not just what you're looking at, but how hard you're thinking about it*, THE SAN DIEGO UNION TRIBUNE, September 13, 2007, <http://bit.ly/Pp17DQ>.

publicly available, however. Because of the “steep fees” associated with the \$300 million project, only a small group of traders will have access to the network.⁶

B. In Exchange for Access, Profits are Virtually Guaranteed

High-frequency trading is an extremely profitable industry in the United States, estimated to be between \$8 billion and \$21 billion in annual profits, according to the Tabb Group.⁷ Profit margins on each trade may be very small, but when billions of trades are executed in the aggregate, that money adds up quickly. High-frequency traders generally make their money two ways, through rebate trading and proprietary trading.

1. Rebate Trading

Because there is intense competition for business between the different trading platforms⁸—there are more than 50 trading platforms in the U.S. equity market, for example—the platforms entice customers by waiving trading fees and providing so-called “liquidity rebates.” Liquidity rebates can be ¼ penny per share traded, regardless of how the security performs.⁹ This means that if a trader buys a share of stock at \$20.00 and sells it a second later for \$20.00, he can still earn ½ penny (¼ each time it was traded), despite the absence of change in the security’s value. If he performs the same trade with 1,000 shares, he can earn \$500.00. Such a payment-structure incentivizes trading for its own sake, which increases trading volume.

Predictably, high-frequency trading volume has exploded.¹⁰ While high-frequency trading comprised about 15 percent of the daily volume of equity trading in the mid-2000s, it now is estimated to comprise between 50 and 75 percent.¹¹ While growth has occurred

⁶ Matthew Phillips, *Stock Trading Is About to Get 5.2 Milliseconds Faster*, BUSINESS WEEK, March 29, 2012, <http://buswk.co/HuK38P>.

⁷ Michael Peltz, *Inside the Machine: A Journey into the World of High-Frequency Trading*, INSTITUTIONAL INVESTOR, May 5, 2012, <http://bit.ly/KVjDt7>.

⁸ The four biggest exchanges are NASDAQ, NYSE, DirectEdge, and BATS, but there are other non-exchange alternative trading systems including unregulated dark pools. Duncan L. Niederauer, *It’s time to bring ‘dark pools’ into the daylight*, FINANCIAL TIMES, July 4, 2012, <http://on.ft.com/N0i1aF>.

⁹ Sal L. Arnuk and Joseph Saluzzi, *Toxic Equity Trading Order Flow on Wall Street: The Real Force Behind the Explosion in Volume and Volatility*, THEMIS TRADING, December 17, 2008, <http://bit.ly/Uuo1q>.

¹⁰ Reuters financial blogger Felix Salmon’s recent Chart of the Day links to an animation from Nanex that shows the growth of trading activity. The chart reveals relatively low levels of trading in 2007 but a distinct increase thereafter. Felix Salmon, *Chart of the Day, HFT edition*, REUTERS, August 6, 2012, <http://reut.rs/Rt3qIT>.

¹¹ Sal Arnuk and Joseph Saluzzi, *What Ails Us About High Frequency Trading?*, ADVANCE TRADING, September 30, 2009, <http://bit.ly/A9Joih>; Nelson D. Schwartz and Louise Story, *Surge of Computer Selling After Apparent Glitch Sends Stocks Plunging*, THE NEW YORK TIMES, May 6, 2010, <http://nyti.ms/S42Ull>.

primarily in the equity market, there has also been an expansion of high-frequency trading volume in the futures, options, bond, and foreign exchange markets.¹²

2. Proprietary Trading

High-frequency traders also engage in a variety of proprietary—and often predatory—trading strategies to make money on securities' price changes. The profits often come at other market participants' expense.

One common strategy involves detecting, then trading ahead of, institutional clients, such as mutual and pension funds. Institutional clients that trade large orders must break up those orders into smaller amounts so that their trades do not move the market. They use their own algorithms to trade amounts over time, setting parameters based on price, volume, and time.¹³ However, those algorithms are relatively simple and the trading patterns are easily detected. For example, a mutual fund might seek to buy 10,000 shares of a given stock at between \$24.95 and \$25.00. So as not to move the price of the stock, the mutual fund may split the 10,000 shares into 100 or 500 share portions, with a limit of \$25.00 per share. Periodically, the mutual fund will trigger its purchases, according to its set parameters.¹⁴ Once high-frequency traders spot the patterns and know the limit at which the fund is willing to buy, they can then execute trades fast enough that when the stock drops to \$24.95, they buy, then turn around to sell when the share price rises to \$25.00.¹⁵

High-frequency traders are often able to detect the parameters for institutional investor trades by using a technique called “pinging,” which involves issuing a lot of small orders to test the waters of how high or low an institutional client is willing to buy or sell a security. If an order is not accepted, it means that the price is outside the limits, and the trader immediately cancels the order. It is estimated that more than 90 percent of high-frequency trading orders are cancelled, with no adverse consequences for the traders.¹⁶ The extreme level of cancellations suggests that high-frequency traders are merely undertaking creative tactics to glean as much information as possible. It also indicates the ease with which high-frequency traders can engage in potential market abuse.

¹² Benoît Lallemand, *Investing not betting: Making financial markets serve society*, FINANCE WATCH, April 2012, <http://bit.ly/KamSkX>; Anuj Agarwal, *High Frequency Trading: Evolution and the Future*, CAPGEMINI, February 29, 2012, <http://bit.ly/QYkDby>.

¹³ Benoît Lallemand, *Investing not betting: Making financial markets serve society*, FINANCE WATCH, April 2012, <http://bit.ly/KamSkX>.

¹⁴ *Id.*

¹⁵ Sal L. Arnuk and Joseph Saluzzi, *Toxic Equity Trading Order Flow on Wall Street: The Real Force Behind the Explosion in Volume and Volatility*, THEMIS TRADING, December 17, 2008, <http://bit.ly/Uuo1q>.

¹⁶ *Id.*

While the previous examples demonstrate how high-frequency traders detect, and then trade around, other market participants, high-frequency traders also engage in strategies to actively bid up or down the prices of securities, so they can capitalize on the movement of those securities. Many institutional algorithmic orders are “pegged” to the National Best Bid or Offer (NBBO). Under this system, when one trader makes a trade, others follow at that same price. High-frequency traders can thus trade ahead of institutional orders to artificially push the price of a security up or down momentarily, knowing the price change will not hold.¹⁷ Because a high-frequency trader will already know the institutional client’s trading parameters (described in the previous paragraph), he will know exactly what price to push the institutional client to. Immediately after pushing the price to the limit, the high-frequency trader will reverse course and capture the profits from the artificially imposed price movement. Returning to the previous example, by “pinging,” a high-frequency trader would know that the mutual fund’s limit is \$25.00, but the stock might be trading at \$24.95. Taking advantage of the “pegged” NBBO system, the trader will buy shares at \$24.96 and the mutual fund will follow with a similar bid. The trader will then buy shares at \$24.97 and the mutual fund will again follow suit. The trader will push the price up to \$25.00, knowing that is the limit that the mutual fund is willing to pay. Immediately after artificially pushing up the price of the stock, the high-frequency trader will short it.¹⁸

2. High-Frequency Trading Harms Traditional Investors

As is evidenced above, high-frequency traders engage in a variety of predatory strategies to make money at others market participants’ expense. Some have even described their activities as technological front-running schemes that impose a “hidden tax” on traditional investors.¹⁹ This is especially true when traders bid up or down the price of securities, because then, institutional and pension fund investors are forced to purchase at higher prices and sell at lower prices than they ordinarily would. While high-frequency trading proponents may argue that this is a matter of a few cents here and there, that is a poor justification. Conceivably, traditional buy-and-hold investors with 401(k)s, IRAs, pension funds, and the like, could pay a few cents extra per share bought and sold over a thirty-year investment horizon. Those cents could add up to real money over time.

More damaging is the growing perception that the market is rigged, that a level playing field does not exist for all market participants, and that a handful of insiders are able to game the system to extract money at everyone else’s expense.²⁰ A clear indication of such a

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ High Frequency Trading, *Interview, with Joseph Saluzzi, Themis Trading and Irene Aldridge, Able Alpha Trading*, CNBC POWER LUNCH, July 24, 2009, <http://bit.ly/Pp35nv>; *High Frequency Traders are Stealing from You*, WEST COAST ASSET MANAGEMENT, October 2010, <http://bit.ly/S3zldQ>.

²⁰ Benoît Lallemand, *Investing not betting: Making financial markets serve society*, FINANCE WATCH, April 2012, <http://bit.ly/KamSkX>.

glum view of the market would be if traditional investors decided to no longer participate in it, and the evidence suggests that this may be the case. While a causal connection to high-frequency trading has not been proven, investors have withdrawn more than \$300 billion from long-term mutual funds in the roughly two years since the May 2010 flash crash.²¹

3. High-Frequency Trading Harms the Financial System

High-frequency trading distorts markets, generates false trading signals, and impairs price discovery such that fundamental values of securities are not always apparent. In some cases—such as when traders bid up or down prices—the price differences may be only a few cents. In other cases—such as the May 2010 flash crash or the recent Knight Capital debacle—prices can vary widely. According to the joint Commodity Futures Trading Commission (CFTC)-Securities and Exchange Commission (SEC) report on the May 2010 flash crash, “Over 20,000 trades across more than 300 securities were executed at prices more than 60% away from their values just moments before. Moreover, many of these trades were executed at prices of a penny or less, or as high as \$100,000 before prices of those securities returned to their ‘pre-crash’ levels.”²² And, according to the market research firm Nanex’s analysis of the Knight Capital debacle, roughly 150 stocks suffered drastic price fluctuations in a matter of minutes, many of them household names, including Nokia (9.12 percent change), Harley Davidson (10.47 percent change), RadioShack (20.27 percent change), Pandora Media (9.11 percent change), and Allergan (9.07 percent change).²³

Yet as bad as these events were, they could have been worse. CFTC commissioner Bart Chilton has highlighted the possible global contagion and amplification effects that could occur if a flash crash were timed slightly differently. He said, “If the Flash Crash had taken place in the morning on May 6th, when E.U. markets were open, it could have instigated a global economic event. Since it took place in the mid-afternoon, it was primarily limited to U.S. markets.”²⁴ Senator Carl Levin (D-Mich.) and former-Senator Ted Kaufman (D-Del.) have similarly “sounded the alarm,” warning that it may be “only a matter of time before the Big One.”²⁵

²¹ Jerry Adler, *Raging Bulls: How Wall Street Got Addicted to Light-Speed Trading*, WIRED, August 3, 2012, <http://bit.ly/PNoOCR>.

²² *Findings Regarding the Market Events of May 6, 2010*, REPORT OF THE STAFFS OF THE CFTC AND SEC TO THE JOINT ADVISORY ON EMERGING REGULATORY ISSUES, September 30, 2010, <http://1.usa.gov/cF6GSJ>.

²³ *Nightmare on Wall Street, List of affected symbols showing #Trades, Volume, and High, Low, Last data.*, NANEX, August 1, 2012, <http://bit.ly/T13QrT>.

²⁴ Keynote Address of Commissioner Bart Chilton to the 13th Annual Structured Trade and Finance in the Americas Conference, “Interconnectedness,” March 15, 2011, <http://1.usa.gov/QlZVTm>.

²⁵ Edward E. Kaufman and Carl M. Levin, *Preventing the Next Flash Crash*, THE NEW YORK TIMES, May 5, 2011, <http://nyti.ms/S45RCl>; Ted Kaufman, *Ominous Rumbblings on Stock Exchanges*, HUFFINGTON POST, April 16, 2012, <http://huff.to/IRxhTw>.

Moreover, contrary to the claims of its proponents, high-frequency trading does not add liquidity to markets. In fact, the opposite is true. Liquidity is defined as the ability for a market participant to buy and sell easily, with minimum market impact.²⁶ High-frequency traders exploit liquidity in good times (adding excess liquidity when it is not needed),²⁷ and drain liquidity when it is needed most. This is because the more liquid a security, the easier it is to trade. To be able to continue to “pass the hot potato,”²⁸ traders depend on prices being predictable.²⁹ But when prices are no longer predictable, high-frequency traders do not want to risk being burned, so they stop playing the game.³⁰

High-frequency traders really just add trading volume, which is as discussed above, largely a function of liquidity rebates. While volume gives the appearance of liquidity, it can disappear at the first hint of instability. Faced with uncertainty, traders cancel all of their buy orders and liquidate the remainder of their portfolios, but this creates a “vacuum” in which there is a “vicious sell-off that chases itself down and no one is there to stop it.”³¹

Proponents of high-frequency trading also claim that it makes markets more efficient, but a recent study by New York University finance professor Thomas Phillipon suggests otherwise. Phillipon shows that the cost of intermediation,³² measured as the sum of all

²⁶ Benoît Lallemand, *Investing not betting: Making financial markets serve society*, FINANCE WATCH, April 2012, <http://bit.ly/KamSkX>.

²⁷ Dallas Mavericks owner and businessman has wryly observed: “By definition they can’t go into an equity unless there already is liquidity. To say they’re adding liquidity is like saying spitting in a thunderstorm is adding liquidity.” Scott Patterson, *Mark Cuban: High-Frequency Traders Are the Ultimate Hackers*, THE WALL STREET JOURNAL, June 26, 2012, <http://on.wsj.com/Myvw2h>.

²⁸ Research by Professor X Frank Zhang of Yale School of Management suggests that once the share of high-frequency trading exceeds 50 percent of total trading volume, they are not providing liquidity to the market, and are instead rapidly passing the same positions back and forth like a “hot potato.” X Frank Zhang, *High-Frequency Trading Increases Stock Volatility*, YALE SCHOOL OF MANAGEMENT, September 1, 2011, <http://bit.ly/rnF3oH>.

²⁹ In *The General Theory* (1936), John Maynard Keynes recognized speculation as a “scarcely avoidable outcome” of excessively liquid secondary markets. He proposed a financial transactions tax to decrease excessive liquidity and incentivize long-term investment. Roni Mann, *The regulatory road not taken: The proposed financial transaction tax in a historical context*, WZB MITTEILUNGEN, September 2012, <http://bit.ly/PQNuz5>; Benoît Lallemand, *Investing not betting: Making financial markets serve society*, FINANCE WATCH, April 2012, <http://bit.ly/KamSkX>.

³⁰ This structure is in stark contrast to the previous system, in which market-makers (also known as “specialists”) had a duty to maintain a fair, orderly, and efficient market by providing liquidity in both good and bad times. Their job was to buy when no one else was buying and sell when no one else was selling to maintain market equilibrium. Under the current system however, “market-making” high-frequency traders collect “liquidity rebates” when conditions suit them, but have no obligation to trade when conditions do not suit them. Cristina McEachern Gibbs, *As Market Volatility Continues, the Blame Game Heats Up*, ADVANCED TRADING, December 15, 2008, <http://bit.ly/Qm0M6o>.

³¹ *Id.*

³² Financial intermediation costs include “the sum of all spreads and fees paid by non-financial agents to financial intermediaries, and it is also the sum of all profits and wages in the finance industry” to “produce, trade and settle financial contracts that can be used to pool funds, share risks, transfer resources, produce information and provide incentives.” Thomas Philippon, *Has the U.S. Finance Industry Become Less Efficient?*

profits and wages paid to financial intermediaries, as a percentage of U.S. gross domestic product (GDP), has increased over the past 30 years—from roughly 5 percent of U.S. GDP in 1980 to almost 9 percent in 2010.³³ If the proponents' claims were true, there would likely be a decrease in the cost of intermediation, or at the very least, a rate that holds constant.

4. Financial Speculation Taxes Would Help Fix Many of the Problems that High-Frequency Trading Creates

Imposing an FST would raise transaction costs, thereby making high-frequency trading less profitable. Even a miniscule tax (0.03 percent, or 3 cents per \$100) on the transfer on stocks, bonds, and derivatives, as called for by the Wall Street Trading and Speculators Tax Act (S. 1787, H.R. 3313), introduced by Sen. Tom Harkin and Rep. Peter DeFazio,³⁴ would “throw sand in the gears” of high-frequency trading operations and slow them down. Such a proposal also has the potential to raise hundreds of billions of dollars to address our budget shortfall. The nonpartisan Joint Committee on Taxation scores the Harkin-DeFazio bill as generating \$352 billion in 9 years.³⁵ Some of this money could be used to bolster regulatory supervision and enforcement of trading activities and market abuses.

Taking the additional step of placing an FST on cancelled orders would make high-frequency traders pay for their extreme levels of cancellations. Doing so would disincentivize the use of “pinging” techniques that are used to glean information, which can be used at others market participants' expense. France recently approved such an FST proposal, which will apply to traders that, “(1) use computer algorithms to determine the price, quantity, and timing of their orders (2) use a device to process these orders automatically, and (3) transmit, modify, or cancel their orders within half a second (the half a second has been set by draft administrative guidance). The high frequency tax is .01% on the amount of stock orders modified or cancelled that exceeds 80% of all orders transmitted in a month (under the draft administrative guidance).”³⁶ Steven Rosenthal of the Tax Policy Center describes this as a “non-transaction” tax.³⁷ SEC Chairman Mary Schapiro has expressed interest in imposing fees on cancelled orders, but the SEC has yet to act.³⁸ NASDAQ has recently implemented its own excess order fee, but the thresholds for

On the Theory and Measurement of Financial Intermediation, NEW YORK UNIVERSITY STERN SCHOOL OF BUSINESS, February 2012, <http://bit.ly/NVrz7N>.

³³ *Id.*

³⁴ Bill Text, *S.1787 -- Wall Street Trading and Speculators Tax Act*, LIBRARY OF CONGRESS THOMAS, <http://1.usa.gov/S48yDO>.

³⁵ *Memo: Joint Tax Committee Finds Harkin, DeFazio Wall Street Trading and Speculators Tax Generates More Than \$350 Billion*, CONGRESSMAN PETER DEFAZIO, November 7, 2011, <http://1.usa.gov/OCN18C>.

³⁶ Steven Rosenthal, *France Collects a Financial Non-transaction Tax*, TAX POLICY CENTER, URBAN INSTITUTE AND BROOKINGS INSTITUTION, August 8, 2012, <http://bit.ly/NdAt00>

³⁷ *Id.*

³⁸ Scott Patterson and Andrew Ackerman, *SEC May Ticket Speeding Traders: High-Frequency Firms Face Fees on Canceled Transactions*, THE WALL STREET JOURNAL, February 23, 2012, <http://on.wsj.com/weD9YC>.

what are deemed excessive are so high that they are meaningless. According to the fee schedule, “if the order to trade ratio is greater than 100 to 1, but less than 1,000 to 1, a charge of half a penny per order is incurred. If the ratio is greater than 1,000 orders to a single trade, each excessive order incurs a charge of a penny.”³⁹

The idea of levying taxes on financial speculation is not new. In fact, economist John Maynard Keynes proposed a transaction tax in his book, *The General Theory* (1936) as a way to disincentivize short-term speculation and redirect financial activity to more socially productive purposes.⁴⁰ But even before Keynes wrote about curbing speculation, the United States had implemented a tax on the sale or transfer of stock. The tax was in place from 1914 until 1966.⁴¹

Currently, at least 29 countries have some form of financial transactions tax.⁴² The United Kingdom has a 0.5 percent transfer tax on stocks, as do other vibrant market centers such as Hong Kong, Singapore, Taiwan, South Korea, Australia, and Switzerland.⁴³ These examples are strong evidence that an FST in the United States would not harm our markets. Moreover, several countries in Europe, led by Germany, France, Spain, and Italy are making progress toward enacting an FST, and expect to implement one by the end of the year.⁴⁴

Prominent economic and financial experts, including Vanguard founder John Bogle, former Federal Reserve Chairman Volcker, and Nobel Laureate Paul Krugman, support the policy of taxing financial transactions.⁴⁵ And recently, more than 50 financial industry experts echoed support for the idea. Among others were: Marshall Auerback, Global Portfolio Strategist for Madison Street Partners LLC, a Denver-based hedge fund; John Fullerton, Founder and President, Capital Institute, and former Managing Director, JP Morgan; Leo Hindery, Jr., Managing Partner, InterMedia Partners LP, a media industry private equity

³⁹ Tom Steinert-Threlkeld, *Nasdaq Steps Up Penalty for Excessive Orders, Delays Start*, SECURITIES TECHNOLOGY MONITOR, June 1, 2012, <http://bit.ly/KezqKp>; Peter Chapman, *Nasdaq to Charge Heavy Quoters*, TRADERS MAGAZINE, March 8, 2012, <http://bit.ly/zydIEx>.

⁴⁰ Roni Mann, *The regulatory road not taken: The proposed financial transaction tax in a historical context*, WZB MITTEILUNGEN, September 2012, <http://bit.ly/PQNuz5>.

⁴¹ *Facts and Myths About a Financial Speculation Tax*, CENTER FOR ECONOMIC AND POLICY RESEARCH, Updated December 2011, <http://bit.ly/nxQmiZ>.

⁴² *Id.*

⁴³ Hong Kong, Singapore, Australia, and Switzerland are four of the top five ranked countries in the conservative Heritage Foundation's 2012 Index of Economic Freedom. <http://heritag.org/x42vIr>. Hong Kong imposes a “stamp tax” of 0.3 percent on stock trades, and received the top ranking in the index. Micah Hauptman, *A Lesson From The Heritage Foundation's Economic Freedom Index*, HUFFINGTON POST, <http://huff.to/O1CVVp>.

⁴⁴ *Eurozone's big four agree on financial transactions tax*, AFP, June 22, 2012, <http://bit.ly/PIXsQA>.

⁴⁵ *Statements of Support for a Financial Transaction Tax (FTT)*, CENTER FOR ECONOMIC AND POLICY RESEARCH, Updated June 2012, <http://bit.ly/b1LlYY>.

fund; and Dr. Paul Wilmott, proprietor, Wilmott magazine and the quantitative finance portal wilmott.com, and former partner, Caissa Capital (located in the United Kingdom).⁴⁶

Conclusion

Computer-driven high-frequency trading is not investment. Rather, it is betting, which harms traditional investors and the financial system. We must change incentives so that harmful and often predatory speculative activities decrease, and traditional long-term investment expands. Doing so will restore trust and confidence in our financial markets and our economy at large. We urge you to consider financial speculation taxes to achieve these goals.

⁴⁶ *Financial Professional Call for Speculation Taxes on Financial Transactions*, AMERICANS FOR FINANCIAL REFORM, June 21, 2012, <http://bit.ly/MsjuXz>.