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Misalighned Incentives In Markets: Envisioning Finance That Benefits All of Society

Dr. Ryan Clements
University of Calgary

Misaligned Incentives in Markets: Envisioning Finance That Benefits All of Society

Dr. Ryan Clements[1]

The modern financial system is plagued by misaligned incentives that allow some firms to extract distributive profits, and direct wealth transfers in their favor, without producing anything of value, or improving society with enhanced employment or socially useful innovation. Many modern financial products and activities serve no underlying economic or productive purpose. The system is creating market intermediaries of astounding size, power, profitability, and economic and regulatory policy influence. Some financial firms expressly profit from heightened interconnection and complexity, while others benefit directly from increased volatility. Yet we all bear the costs of this evolved financial system when it unravels due to its interconnectedness with the real economy, and our increased reliance on markets. This article advocates for a financial system that is definancialized, de-complexified, more transparent, and better orientated to productive ends in a way that benefits all of society, not just the firms who reap asymmetrical payoffs in a complex system, intermediate capital, create financial products, or run the plumbing in a system that ultimately serves them best.

This article gives support to Hyman Minsky's "money manager capitalism" hypothesis by showing how the financial system has evolved since the 2008 crisis because of misaligned incentives. In support of this contention the article profiles numerous post-crisis trends and events in financial markets where misaligned incentives emerge, including moral hazard in debt origination, how some financial firms benefit from volatility; the real winners of the GameStop "meme stock" saga; problems from price dislocations in credit exchange traded funds (ETFs) during the coronavirus pandemic crash; conflicts in the construction and composition of indices; market disruption from volatility-linked exchange traded products (ETPs); misaligned

1. Assistant Professor, Chair in Business Law and Regulation at the University of Calgary Faculty of Law. The author wishes to thank Professor Lawrence G. Baxter, Professor James D. Cox, Professor Elisabeth D. de Fontenay, Professor Arthur E. Wilmarth, Jr., Lee Reiners, the Duke Global Financial Markets Center, and Professor Bryce Tingle for helpful guidance and advice. Any inaccuracies are the sole responsibility of the author.

incentives in special purpose acquisition companies (SPACs) and evolved private equity (PE) business models; fragilities in pension administration; environmental, social, governance (ESG) opacity and greenwashing in investment funds; and governance conflicts from economic and proxy voting power of mega-asset managers.

Misaligned Incentives in Markets: Envisioning Finance That Benefits All of Society

I. INTRODUCTION

Many modern financial products and activities serve no useful underlying economic or productive function at all, other than profit for their originators and speculation for their users. This article uniquely advances Hyman Minsky's "money manager capitalism" (MMC) hypothesis,[2] and places it within the robust post-crisis literature on financialization,[3] by showing how the financial system has evolved since the 2008 crisis because of misaligned incentives. This evolved financial system is creating market intermediaries of astounding size, power, profitability, and economic and regulatory policy influence. Some financial firms expressly profit from greater complexity and interconnection, without producing anything, while others benefit directly from increased volatility. Yet we all bear the costs of this evolved financial system when it unravels due to its interconnectedness with the real economy, and main street's increased reliance on markets.

2. *See* Hyman P. Minsky, *Uncertainty and the Institutional Structure of Capitalist Economies,* 30(2) JOURNAL OF ECONOMIC ISSUES 357, 362-363 (1996), available at https://digitalcommons.bard.edu/cgi/viewcontent.cgi?article=1023&context=HM_archive; *see* Hyman Minsky, *Money Manager Capitalism*, HYMAN P. MINSKY ARCHIVE, PAPER 13 (1989), 26 http://digitalcommons.bard.edu/hm_archive/13.

3. *See infra* Sections II(b) & V(c).

This article advocates for a financial system that is de-financialized, de-complexified, more transparent, and better orientated to productive ends in a way that benefits all of society, not just the firms who reap asymmetrical payoffs in a complex system, intermediate capital, create financial products, or run the plumbing in a system that best serves them. In support of this contention the article profiles numerous post-crisis misaligned incentives in financial markets including financialization trends, moral hazard in debt origination, how some financial firms benefit from volatility; the real winners of the *GameStop* "meme stock" saga; problems from price dislocations in credit exchange traded funds (ETFs) during the coronavirus pandemic crash; conflicts in the construction and composition of indices; market disruption from volatility-linked exchange traded products (ETPs); misaligned incentives in special purpose acquisition companies (SPACs) and evolved private equity (PE) business models; fragilities in pension administration; environmental, social, governance (ESG) opacity and greenwashing in investment funds; and governance conflicts from economic and proxy voting power of mega-asset managers.

Minsky vigorously argued that economics was not a "subdivision of mathematics," and that theories regarding the economy relied on "observations" of what took place in the "actual economy."[4] He observed that "real world outcomes" were heavily dependent on the behavior of institutions and people, and that the "simplistic propositions of laissez-faire no longer hold."[5] The real world as Minsky saw it is even now more strikingly true – capitalism in the U.S. has evolved to a point where "money managers" (which this article will extend to include a variety of financial market intermediaries and service providers) now wield vast economic power, extract massive profits from the economy, and exert significant regulatory and government influence.[6] Even in the 1980's, Nobel laureate Professor James Tobin was skeptical about the efficiency of the financial system.[7] While positing

4. *See* Minsky, *Uncertainty, supra* note 1 at 358 ("relevant theory is not a compendium of propositions derived from axioms assumed to be universally true")

5. *Id.* at 367.

6. *Id.* at 358-359.

7. *See* James Tobin, *On the Efficiency of the Financial System,* LLOYDS BANK REVIEW 1 (1984). (Tobin organized his critique of financial markets around four concepts of efficiency (*see* at 2-3): "information arbitrage" efficiency with asset prices revealing all known public information; "fundamental valuation" efficiency with prices accurately reflecting underlying fundamental value of assets including the value of all future payments or dividends; "full-insurance" efficiency with risk being rationally apportioned, known contingencies capable of effective hedging, borrowing aligned effectively to consumption, and the market operating in a state of competitive equilibrium; finally "functional" efficiency with the profits of financial firms being justified, despite these firms not providing a productive or consumptive service, because of some

that financial markets might be "information-arbitrage" efficient,[8] he expressed reservations about the fundamental-valuation,[9] full-insurance,[10] and functional efficiency of financial markets – in other words the justification of financial firm's profits because of the valuable "social function" they perform.[11] He even went as far as to say "[w]hat is clear is that very little work done by the securities industry, as gauged by the volume of market activity, has to do with the financing of real investment in any very direct way."[12] Tobin's reservations, particularly regarding functional efficiency, ring especially true today, and as this article will show, it is even worse than he posited in 1984.[13] Market inefficiencies are exacerbated by a fundamentally flawed incentive structure where the externalities emanating from the profit-seeking activities of financial intermediaries can be passed on as shared costs borne by all of society (and the sovereign),[14] while the benefits are captured by only a few.[15]

The article proceeds as follows. First, Section II describes the post-2008 crisis intermediated financial market in the context of an MMC paradigm, including the continuing impact of financialization, consumer and media market orientation, the role of economic theory in fostering the passive investing and indexing revolution, the accelerating influence of fintech, and how the asset management landscape has materially evolved post-crisis.[16] Section III profiles numerous cases

valuable social function they otherwise perform such as risk pooling, resource allocation, insurance, payments facilitation, and allocating savings to productive enterprises.)

8. There is evidence, however, particularly in thinly traded markets and nascent asset classes such as crypto-assets, that markets aren't "informational-arbitrage" efficient, and that the "law of one price" is routinely violated. *See* Alexander Kroeger & Asani Sarkar, *Is Bitcoin Really Frictionless*, Federal Reserve Bank of New York, Liberty Street Economics Blog (March 23, 2016), https://libertystreeteconomics.newyorkfed.org/2016/03/is-bitcoin-really-frictionless.html; Lee Reiners, *Bitcoin Futures Are A Bad Idea,* DUKE GLOBAL FINANCIAL MARKETS FINREG BLOG (December 13, 2017), https://sites.law.duke.edu/thefinregblog/2017/12/13/bitcoin-futures-are-a-bad-idea/.

9. Tobin's critiques of fundamental valuation efficiency align with prior work done by Professor Robert J. Shiller, *see* Robert J. Shiller, *Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?* 71 AMERICAN ECONOMIC REVIEW 421 (1981); Robert J. Shiller, *The Volatility of Long-Term Interest Rates and Expectations Models of the Term Structure,* 87 JOURNAL OF POLITICAL ECONOMY 1190 (1979).

10. *See* Tobin, *supra* note 6 at 5-14. Full insurance efficiency is associated with the well-known work of Kenneth Arrow & Gerard Debreu, *see* Kenneth Arrow & Gerard Debreu, *Existence of an Equilibrium for a Competitive Economy,* 22 ECONOMETRICA 256 (1954); GERARD DEBREU, THEORY OF VALUE, AN AXIOMATIC ANALYSIS OF ECONOMIC EQUILIBRIUM (1959).

11. *See* Tobin, *supra* note 6 at 5-14.

12. *Id.* at 11.

13. *Id.*

14. *Infra* Section IV.

15. *Infra* Section III.

16. *Infra* Section II.

studies in misaligned incentives in the financial system leading to private, distributive gains in favor of market intermediaries and away from ordinary citizens.[17] Section IV presents evidence that externalities from this evolved system of misaligned incentives are shared by all.[18] Finally, Section V presents three "fundamental shifts," together with resulting policy considerations, that are needed to make markets more healthy, and beneficial to the interests of productive firms and society at large: first, decrease the power and influence of market intermediaries; second, increase the transparency and comparability of investment products; and third, re-assess the calculus of financialization to favor the growth of productive enterprise.[19]

II. THE POST-CRISIS INTERMEDIATED MARKET

A. *Why Minsky was Right (Again)*

Hyman Minsky famously posited that the financial system grew destabilized from within[20] – a consequence of the profit seeking enterprises of financial firms.[21] He attributed rapid credit growth to the profit seeking behaviors of financial intermediaries,[22] and posthumously increased his public profile after the 2008 crisis revealed that the profit seeking actions of banks, insurance, and investment companies operating as shadow banks, in pursuit of profits, endogenously

17. *Infra* Section III.

18. *Infra* Section IV.

19. *Infra* Section V.

20. *See* HYMAN P. MINSKY, STABILIZING AN UNSTABLE ECONOMY (2008), 4 ("the Wall Streets of the world are important; they generate destabilizing forces, and from time to time the financial processes of our economy lead to serious threats of financial and economic instability, that is, the behavior of the economy becomes incoherent.") *See further* at 11 194-196, 230-238; *see* L. RANDALL WRAY, WHY MINSKY MATTERS (2016), 3, 11, 14-15 ("Minsky argued that the internal dynamics of our modern economy are not equilibrium seeking. There's no invisible hand operating that way. Furthermore, if we ever did achieve the mainstream's beloved 'equilibrium,' those internal dynamics would push us away – the system is not stable. And if by some miracle we were to get twice lucky – achieving an equilibrium that was stable – stability is *destabilizing.*")

21. Minsky described his theory as a "financial instability hypothesis" which envisioned a cycle of endogenously-generated financial instability as banks, and other financial intermediaries, destabilize the financial system by introducing risky credit and financial products, in a search for operating profits, during periods of economic repose, *see* Hyman P. Minsky *The Financial Instability Hypothesis,* LEVY ECONOMICS INSTITUTE OF BARD COLLEGE WORKING PAPER NO. 74 (May 1992); Minsky, H.P. *Financial instability revisited: The economics of disaster.* 3 REAPPRAISAL OF THE FEDERAL RESERVE DISCOUNT MECHANISM 97 (1972); H.P Minsky, *Schumpeter and finance*, in Salvatore Biasco, Alessandro Roncaglia, and Michele Salvati (eds), MARKET AND INSTITUTIONS IN ECONOMIC DEVELOPMENT: ESSAYS IN HONOUR OF PAULO SYLOS LABINI (1993).

22. *See* Wray, *Why Minsky Matters supra* note 19 at 38.

destabilized the financial system.[23] Recent empirical studies support Minsky's theory of endogenous instability, showing that financial crises originate in a "substantially predictable" way – onset through a "combination of rapid credit and asset price growth" over a three year period.[24]

In addition to his theory of financial instability,[25] Minsky believed that capitalism had an "evolutionary character," – and that it had survived because "it is a system that is hospitable to institutional change."[26] Capitalistic institutions (and the larger financial system) thus evolves from the profit seeking activities of its participants.[27] Before he passed, he posited that our system had evolved into a modern "money manager capitalism" (MMC) system.[28] The MMC hypothesis posits a precarious system-wide evolution where "money managers" (which I expand in this article to include other market intermediaries and financial market service providers) increase their size, economic power, and social and political influence, by virtue of their profit seeking activities – not the capital needs of productive enterprises.[29] In an MMC system the "dominant financial players" are asset managers in search of returns.[30] The MMC complements Minsky's influential work on endogenous market instability, and scholars studying Minsky have noted the MMC's lesser visibility in the scholarship.[31]

In an MMC system, asset managers issue financial products, which act as "proximate owners" of productive enterprises, and perform an intermediating function between firms and investors.[32] MMC fosters

23. *See* L. Randall Wray, *Minsky's Money Manager Capitalism and the Global Financial Crisis*, LEVY ECONOMICS INSTITUTE OF BARD COLLEGE WORKING PAPER NO. 661 (March 2011), http://www.levyinstitute.org/pubs/wp_661.pdf.

24. *See* Robin Greenwood, Samuel G. Hanson, Andrei Shleifer & Jakob Ahm Sorensen, *Predictable Financial Crisis,* HARVARD BUSINESS SCHOOL WORKING PAPER 20-130 (2020), https://www.hbs.edu/faculty/Publication%20Files/20-130_6002ac58-19a9-469a-a0cc-506a5f836ae7.pdf.

25. *See* Wray, *Why Minsky Matters supra* note 19 at 31-34.

26. Minsky, Money Manager Capitalism, *supra* note 1 at 26.

27. *Id.* at 27; *see* Minsky, Stabilizing, *supra* note 19 at 7 ("Economic systems are not natural systems. An economy is a social organization created either through legislation or by an evolutionary process of invention and innovation. Policy can change both the details and the overall character of the economy, and the shaping of economic policy involves both a definition of goals and an awareness that actual economic processes depend on economic and social institutions.")

28. *See* ERIC TYMOIGNE & L. RANDALL WRAY, THE RISE AND FALL OF MONEY MANAGER CAPITALISM: MINSKY'S HALF-CENTURY FROM WORLD WAR TWO TO THE GREAT RECESSION, ROUTLEDGE CRITICAL STUDIES IN FINANCE AND STABILITY (2014), 72-105.

29. *See* Minsky, *Schumpeter*, *supra* note 20; Tymoigne & Wray, *supra* note 27 at 72-105.

30. *See* Wray *supra* note 19 at 38.

31. *See Id.*; C.J. Whalen, (2002), *Money manager capitalism: Still here, but not quite as expected*, 36(2) J. OF ECON. ISSUES (2002).

32. Hyman P. Minsky, *Uncertainty, supra* note 1 at 358.

the growth of debt,[33] and captures mutual and pension funds, and PE firms who traditionally, "provided the equity investment for highly leveraged buy outs of firms,"[34] but, as will be discussed in depth below,[35] have now evolved their operations to originate credit and perform other "shadow banking" activities.[36] MMC emerged through the evolution of American capitalism in five stages: commercial;[37] industrial (including "wild cat" financing); financial (including "state financing"); paternalistic (including "welfare state" and managerial financing); and finally MMC.[38]

Minsky noted that MMC had six characteristics: (1) businesses often organize in a corporate form; (2) financial institutions (including banks, insurance companies, and asset managers) hold the liabilities of these corporations as assets; (3) a "new layer of intermediation" is inserted between the corporation and the financial institutions (as well as other savers and investors) by asset (fund) managers; (4) certain contractual obligations form around these asset managers; (5) the "stated aim" of the asset managers is to maximize the value of these intermediated investment products; and (6) the performance of a given fund is measured by a "total return on assets" which includes dividends and interest received and share price appreciation.[39] Professors Eric Tymoigne and L. Randall Wray have suggested that MMC also includes the phenomena of "securitization, globalization, financialization, deregulation and desupervision."[40]

This article's central claim is that Minsky's MMC hypothesis remains critically relevant today, and it has evolved in complex ways not captured by the six characteristics above. It manifests beyond the conventional search for yield in investment returns by asset managers, and is now seen in misaligned incentives in the financial market which lead to a diverse range of private gains for financial firms[41] and shared

33. *See* Wray, *supra* note 19 at 148 ("[t]his was the ugly side of money manager capitalism: the growth of financial assets under management was equal to the growth of financial liabilities of somebody.")

34. Minsky, *Uncertainty, supra* note 1 at 358.

35. *See infra* Sections II(f), III(b) & IV(c).

36. The Federal Reserve has defined shadow banking as "financial intermediaries that conduct maturity, credit, and liquidity transformation without explicit access to central bank liquidity or public sector credit guarantees." *See* Zoltan Pozsar, Tobias Adrian, Adam Ashcraft & Haley Boesky, *Shadow Banking,* FEDERAL RESERVE BANK OF NEW YORK STAFF REPORT 458, 458 (2010); *see* Tymoigne & Wray, *supra* note 27 at 44-45

37. *See* Tymoigne & Wray, *supra* note 27 at 44-45.

38. *See* Minsky, *Uncertainty, supra* note 1 at 362 (1996).

39. *Id.* at 363.

40. Tymoigne & Wray, *supra* note 27 at 72.

41. *See infra* Section III.

costs for all of society.[42] It has proven resilient post-2008 crisis, and is now fostering unprecedented concentrations of economic power and public policy influence for the largest asset managers,[43] while creating new market externalities (shared costs) which emerge from the deepened complexity and interconnectedness of the financial system.[44] After the 2008 crisis, universal banks were subjected to heightened regulatory standards, paving the way for asset managers to increase their importance as shadow banks and financial intermediaries – a period Bank of England Chief Economist Andrew Haldane has described as "the age of asset management."[45] This article positions Minsky's vision of an evolved capitalistic structure dominated by financial intermediaries within the age characterized by Haldane, and supplemented by the theories of Karl Polanyi that financial markets evolve to render society as "an accessory to the economic system."[46]

B. *The Continuing Impact of Financialization*

Over the past four decades the relative size of the financial industry has grown as a function of the economy, and trillions of dollars of profits have been transferred to the financial sector away from other productive industries.[47] Concurrently, the pay disparities between financial and non-financial executives have widened.[48] During this time, markets have significantly deepened in complexity and interconnectedness, while the number of participants and intermediaries interfacing with each other through an ever increasing number of financial products, trading venues and applications have exponentially expanded.[49]

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42. *See infra* Section IV.

43. *See infra* Sections IV(h) & V(a).

44. *See infra* Section IV.

45. Andrew Haldane, *The age of asset management?* Bank of England (April 4, 2014), https://www.bankofengland.co.uk/speech/2014/the-age-of-asset-management.

46. KARL POLANYI, THE GREAT TRANSFORMATION, 75 (1st ed. 1957).

47. See D. Tomaskovic-Devey & K-H Lin*, Income dynamics, economic rents, and the financialization of the U.S. Economy*. 76 AMERICAN SOCIOLOGICAL REVIEW 538 (2011).

48. *See* S.N. Kaplan & J. Rauh, *Wall Street and main street: What contributes to the rise in the highest incomes?* 23 REVIEW OF FINANCIAL STUDIES 1004 (2010); John Bakija, Adam Cole & Badley Heim*, Jobs and Income Growth of Top Earners and the Causes of Changing Income Inequality: Evidence From U.S. Tax Return Data*, U.S. DEPARTMENT OF TREASURY (April 2012).

49. *See* Manuel A. Utset, *Complex Financial Institutions and Systemic Risk,* 45 GA. L. REV. 779 (2011); Ryan Clements, *Are ETFs Making Some Asset Managers Too Interconnected to Fail?* 22(4) U. PA. J. BUS. L. 772 (2020); *See* Ryan Clements, *Exchange Traded Confusion: How Industry Practices Undermine Product Comparisons in Exchange Traded Funds,* (forthcoming) VIRGINIA. LAW & BUS. REV. 63 (2021), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3680219

Markets today have given rise to "meta-markets," and as a result, system-wide complexity (and risk) has been extended by lengthened chains of financial intermediation and increased informational opacity.[50] As information "signal" become harder to ascertain,[51] and the costs of obtaining valuable information increases,[52] actors are disincentivized to engage in price discovery and "informational deficits" can easily lead to investor herds and irrational market behavior.[53] This article will identify many such incidents,[54] all of which are generated by a misaligned incentive structure.

C. *Increased Consumer and Media Financial Market Orientation*

Today, finance is woven tightly into the daily fabric of society – some argue too much so.[55] Households are orientated to the markets due to self-directed investments and greater levels of consumer and real-estate debt.[56] This orientation at the household level is, in large part, due to employers moving away from offering "defined benefit plans" (which guarantee a specific retirement income) towards "defined contribution" plans, owned and managed by employees, which increased consumer orientation towards the market and crystalized the importance of financial products.[57]

Markets have largely been "democratized" with the emergence of online discount brokers and fintech innovations like "robo-advisors" offering low-fee access to intra-day securities trading, ETFs and other

50. *See* Manuel Utset, *Rational Financial Meltdowns,* 10 HASTINGS BUS. L. J. 407, 407-408, (2014).

51. Signal, which is pertinent information relating to the value of an asset can be contrasted with "noise" which is generated from "uninformed" trading, but which can still have a material impact on the price of an asset, *see* Bing Han, Ya Tang, & Liyan Yang, *Public Information and Uninformed Trading: Implications for Market Liquidity and Price Efficiency,* 163 J. OF ECON. THEORY 604, 605 (2016).

52. *See* Utset, *Rational, supra* note 49 at 424.

53. *Id.* at 428.

54. *See infra* Section IV.

55. *See* Steve Denning, *Why Financialization Has Run Amok,* FORBES (June 3, 2014), https://www.forbes.com/sites/stevedenning/2014/06/03/why-financialization-has-run-amok/?sh=71b394f33d7d; Christine Emba, *Has our economy become too 'financialized'?* THE WASHINGTON POST (April 18, 2016), https://www.washingtonpost.com/news/in-theory/wp/2016/04/18/has-our-economy-become-too-financialized/.

56. Gerald F. Davis & Suntae Kim, *Financialization of the Economy*, 41 ANNUAL REVIEW OF SOCIOLOGY 203, 203-204, 216 (2015).

57. *See* J.S. Hacker, *Privatizing Risk Without Privatizing The Welfare State: The Hidden Politics of Social Policy Retrenchment in the United States,* 98 AMERICAN POLITICAL SCIENCE REVIEW 243, 243-260 (2004); *see* Gerald F. Davis, *A New Finance Capitalism? Mutual funds and Ownership Re-Concentration in the United States,* 5 EUROPEAN MANAGEMENT REVIEW 11, 11-21 (2008).

ETPs.[58] Dreams of riches through "day trading" have captured the imaginations of many (as witnessed recently in a spike in day trading during the coronavirus pandemic), often to the detriment of novice investors.[59] The more individuals interface with, and are oriented daily towards, the financial market, the more economically powerful and profitable the intermediated asset management industry grows.[60] Further, the more deeply cemented the evolved system of MMC becomes.

D. *Economic Theory and the Passive Investment Revolution*

With the outsourcing of pensions and retirement savings to Wall Street, and the increased orientation of main street and consumers to the financial markets, a counter-intuitive phenomenon has also emerged - what is rational for the individual may, in fact, end up being sub-optimal for society at large. Since the 2008 crisis there has been an incredible transition towards index and passive investing.[61] Modern portfolio theory suggests that a low-cost, diversified, investment portfolio is an efficient individual strategy for a wide segment of society since it mitigates the "idiosyncratic risk" of individual company

58. *See* Ryan Clements, *Regulating Fintech in Canada and the United States: Comparison, Challenges and Opportunities*, 12(23) UNIVERSITY OF CALGARY, SCHOOL OF PUBLIC POLICY SPP RESEARCH PAPERS (August 2019), 21-22, https://www.policyschool.ca/wp-content/uploads/2019/08/Fintech-Clements-final.pdf.

59. *See* Annie Nova, *Many are chasing the stock market by day trading in the pandemic. It could end badly,* CNBC (September 21, 2020), https://www.cnbc.com/2020/09/21/many-people-turn-to-day-trading-in-pandemic-few-will-be-a-winners.html; *see* Jessica Camille Aguirre, "*It's A Whole Other Level of Insanity:" How Pandemic Day Traders Are Turning Wall Street Upside Down,* VANITY FAIR (September 14, 2020), https://www.vanityfair.com/news/2020/09/how-pandemic-day-traders-are-turning-wall-street-upside-down.

60. There is evidence that this economic power is disproportionally converging around three firms, *see* Lucian Bebchuk & Scott Hirst, *The Specter of the Giant Three*, 99 B.U. L. REV. 721, 723 (2019) ("Over the last decade, more than 80% of all assets flowing into investment funds has gone to the Big Three, and the proportion of total funds flowing to the Big Three has been rising through the second half of the decade."). Bebchuk and Hirst cite a variety of reasons for this phenomenon including operational economies of scale and the ability to provide preferential treatment to institutional clients (*see* at 729). However the impact of the media on a finance-oriented culture may also be a major contributing factor. Because of a behavioral economics phenomenon known as "overreliance on salience" there may be a quality perception bias for certain firms based on their higher profile, and more frequent media mention. *See* Clements, *Exchange Traded Confusion, supra* note 48 at 41; see ONTARIO SECURITIES COMMISSION, *Behavioral Insights Key Concepts, Applications and Regulatory Considerations*, OSC STAFF NOTICE 11-778 (March 29, 2017), 33 https://www.osc.gov.on.ca/documents/en/Securities-Category1/sn_20170329_11-778_behavioural-insights.pdf.

61. *See* Rachel Evans & Carolina Wilson, *How ETFs Became The Market,* BLOOMBERG (September 13, 2018), https://www.bloomberg.com/graphics/2018-growing-etf-market/?srnd=etfs; *see* FINANCIAL TIMES, Opinion Lex, *BlackRock / Vanguard: ETF Leviathans* (January 18, 2021), https://www.ft.com/content/983542f1-151d-4fae-947a-6509967183aa.

stocks.[62] Empirical evidence suggests that investors are better off buying the entire market than attempting to beat it by picking individual stocks.[63] This explains the massive migration between 2006 and 2018 of more than $3 billion in investment assets away from actively managed funds to passive index funds in the U.S.[64]

Just prior to his passing, *Vanguard's* late founder John Bogle suggested that a "tragedy of the commons" had emerged in the markets due to the nascent dominance of passive investments and indexing, and the rise of "momentum" and other trend strategies, in the form of impaired price discovery, herding and heighted market volatility.[65] This article seeks to deepen the tragedy of the commons analogy by arguing that our evolved system of MMC is not solely a byproduct of the individually rational investment decisions of investors,[66] but also the individually rational profit seeking motivations of financial firms driven by misaligned incentives.[67] Thus the externalities of MMC are also a by-product of rational individual choices (by both retail and institutional investors). The MMC, however, in its post-crisis variety has much larger implications. It is fundamentally changing the organizational structure of capitalism, the role of sovereign, and the social

62. *See* Harry Markowitz, *Portfolio Selection,* 7 JOURNAL OF FINANCE 77 (1952)

63. See Eugene F. Fama & Kenneth R. French, Luck versus Skill in the Cross-Section of Mutual Fund Returns, 65(5) J. OF FINANCE 1915 (2010); Vladyslav Sushko & Grant Turner, The implications of passive investing for securities markets, BIS QUARTERLY REVIEW, at 116-17 (Mar. 2018), https://www.bis.org/publ/qtrpdf/r_qt1803j.pdf; J. Busse, A. Goyal & S. Wahal, Investing in a global world, 18(2) REVIEW OF FINANCE 561 (2014).

64. *See* Sushko, & Turner, *supra* note 62 at 113–131; R. Henderson, *JPMorgan edges closer to zero fees in a push for passive.* FINANCIAL TIMES (March 11, 2019), https://www.ft.com/content/4e971cba-4414-11e9-a965-23d669740bfb; J. Gittelsohn, *End of Era: Passive Equity Funds Surpass Active in Epic Shift,* BLOOMBERG (September 11, 2019) https://www.bloomberg.com/news/articles/2019-09-11/passiveu-s-equity-funds-eclipse-active-in-epic-industry-shift; Paul Samuelson, *Challenge to Judgement,* 1 JOURNAL OF PORTFOLIO MANAGEMENT 17 (1974); Judith Evans & Jonathan Eley, *Democratizing Finance: How Passive Funds Changed Investing*, Financial Times (Jan. 30, 2015), https://www.ft.com/content/b3c0c960-a56c-11e4-bf11-00144feab7de; Ben Johnson, *Active vs. Passively Managed Funds: Takeaways From Our Midyear Report,* MORNINGSTAR BIG PICTURE (Aug. 23, 2018), https://www.morningstar.com/blog/2018/08/23/actively-managed.html.

65. John C. Bogle, *Bogle Sounds A Warning on Index Funds,* THE WALL STREET JOURNAL (November 29, 2018), https://www.wsj.com/articles/bogle-sounds-a-warning-on-index-funds-1543504551?mod=trending_now_4.

66. *See* Conrad de Aenlle, *Opinion: John Bogle has a Warning for Index Fund Investors,* MARKETWATCH (June 1, 2017), https://www.marketwatch.com/story/john-bogle-has-a-warning-for-index-fund-investors-2017-06-01 ("As with any tragedy of the commons, indexing is the sensible thing for each individual to do, but each individual should remember that many sensible ideas, especially in investing, make less sense as more people put them into practice. When the stock market turns down again, index fund owners will have to become their own active manager and make sure they're well diversified, with limited exposure to risk, chaos, and catastrophe.")

67. *See infra* Section III.

function of market intermediaries, and in so doing generating shared externalities.[68]

E. *Fintech Acceleration and Global Interconnection*

The process of market intermediation has been dramatically altered by fintech, which has both "democratized" access to financial markets by lowing the cost of, and barriers to, participation for average low-account size investors, and allowed for a wide range of diversified financial products such as index funds and ETFs at extremely low costs.[69] Fintech intermediation innovations, like the California-based *Acorns*, are providing financial inclusionary benefits by allowing investors to "round-up" their consumer purchases and "invest their spare change" through micro-buys of ETFs, thereby facilitating an automated savings mechanism for low dollar accounts.[70] These fintech-enabled investment mechanisms have grown alongside increased popularity in algorithmic wealth management programs ("robo-advisors"), which build low-cost model portfolios often using ETFs.[71]

At the forefront of this digital intermediation revolution are online discount brokerages like *Robinhood,*[72] which describes itself as one of the first technology platforms to offer a "commission-free trading environment."[73] Robinhood has had a tremendous impact on the investment industry;[74] yet, as this article will profile in detail, in light of the

68. *See infra* Section IV.

69. *See* Evans & Eley, *supra* note 63.

70. *See* Kate Rooney, *Fintech start-up Acorns valued at $860 million after latest funding round,* CNBC (28 January 2019), https://www.cnbc.com/2019/01/28/fintech-start-up-acorns-valued-at-860-million-after-latest-funding-round.html

71. *See* Saule T. Omarova, *New Tech v. New Deal: Fintech as a Systemic Phenomenon,* 36 YALE J. ON REG. 735, 788 (2019); Bret E. Strzelczyk, *Rise of the Machines: The Legal Implications For Investor Protection With The Rise of Robo-Advisors,* 16 DEPAUL BUS. & COM. L.J. 55 (2017). Some fear that Robo-advisors increase the potential for correlated investment portfolios and "herding risk", *see* William Magnuson, *Regulating Fintech,* 71 VANDERBILT LAW. REV. 1167, 1199, 1209 (2018); Francesco D'Acunto, Prabhala Nagpurnan & Alberto Rossi, *The Promises and Pitfalls of Robo-Advising,* CESIFO WORKING PAPER SERIES NO. 6907 (2018), available from https://ssrn.com/abstract=3165339. Also, there are concerns in the literature on liability and the fiduciary implications of algorithmic wealth management, *see* John Lightborne, *Algorithms and Fiduciaries: Existing and Proposed Regulatory Approach to Artificially Intelligent Financial Planners,* 67 DUKE L. J. 651 (2017). These fintech platforms also give rise to new regulatory challenges and risks like ensuring product suitability, managing cyber-security, data privacy, and the systemic implications of scalability, *see* Tom Baker & Benedict Dellaert, *Regulating Robo Advice Across The Finance Service Industry,* 103 IOWA LAW REV. 713 (2018).

72. *See* ROBINHOOD, https://robinhood.com/ (last accessed February 3, 2021)

73. Id.

74. John Divine, How Robinhood Changed an Industry, U.S. NEWS & WORLD REPORT (Oct. 17, 2019), https://money.usnews.com/investing/investing-101/articles/how-robinhood-changed-an-industry

recent *GameStop* short squeeze and meme stock saga, it is not certain that the firm's contribution to market efficiency, or stability, is net positive.[75] Rather, firms like Robinhood, and their resultant impact on the integrity of markets, may strengthen Professor Saule Omarova's warnings of fintech-driven systemic risks through an increased "synthesizing" of economic interests, and the "scaling-up" of trading transaction volume and speed.[76] As a contribution to this line of scholarship, this article will focus on the question of misaligned incentives, and how Robinhood, and other market intermediaries benefit from increased volatility,[77] while society shares the costs.[78]

F. *The Evolved Post-Crisis Asset Management Landscape*

The asset management landscape has evolved to include a diverse and complex array of intermediation including conventional asset managers with retail accessible investment products, like mutual funds and ETFs which product class is dominated by the "giant three" U.S. firms *BlackRock*, *Vanguard* and *State Street Capital*.[79] Exchange traded funds are likely the most successful post-2008 crisis financial product,[80] with sector growth aided by regulatory accommodations.[81] The largest investment fund managers control a breathtaking, and unprecedented amount of capital, with recent reports noting the aforementioned "giant three" respectively controlling, through intermediated holdings, over $19 trillion in assets – or nearly 10% of the global financial market.[82]

75. See infra Sections III(i) & Section IV(e).

76. See Omarova, supra note 70 at 741, 762-765.

77. See infra Sections III(i).

78. See infra Section IV.

79. See. Bebchuck & Hirst, supra note 59 at 723; J. Fichtner, E.M. Heemskerk, & J. Garcia-Bernardo (2017). Hidden power of the big three? Passive index funds, re-concentration of corporate ownership, and new financial risk, 19(2) BUSINESS AND POLITICS 298 (2017).

80. Consulting firm ETFGI Global has recently reported that from 2008 to 2019 the number of ETFs worldwide grew from 1617 to 6940, and during this time period the the value of assets held in ETF products also increased from $716 billion to over $6 trillion. See ETGFI, ETFGI report assets in the global ETFs and ETPs industry which will turn 30 years old in March started the new decade with a record 6.35 trillion US dollars (January 16, 2020), https://etfgi.com/news/press-releases/2020/01/etfgi-reports-assets-global-etfs-and-etps-industry-which-will-turn-30; see Clements, Are ETFs, supra note 48; Ryan Clements, New Funds, Familiar Fears: Do Exchange Traded Funds Make Markets Less Stable? Part I, Liquidity Illusions, 20 HOU. BUS. & TAX L. J. 15 (2020); Ryan Clements, New Funds, Familiar Fears: Are Exchange Traded Funds Making Markets Less Stable? Part II Interaction Risks, 21(1) HOU. BUS. & TAX L.J. 1 (2020).

81. U.S. SEC. & EXCH. COMM'N, *Exchange Traded Funds,* Investment Company Act Release No. 33,646 (September 25, 2019), 84 Fed. Reg. 57,162, 57,166 (Oct. 24, 2019) (to be codified at 17 C.F.R. pts. 210, 232, 239, 270, 274), available at https://www.sec.gov/rules/final/2019/33-10695.pdf.

82. *See* FINANCIAL TIMES, *supra* note 60.

Precise estimates of the total size of the global asset management industry are difficult because of the diversity of firms and complexity of their operations, including traditional equity and fixed income asset and investment product managers, PE, venture capital (VC), alternative investment management (including a diverse range of hedge or other fund structures). In 2020, researchers from the *Boston Consulting Group* estimated that in 2019 there were $89 trillion global assets under management (AUM).[83] AUM is not the sole indicator of the size, or influence, of market intermediaries whose diverse operations include private and public advisory work, and increasingly financial infrastructure services, highlighted by *BlackRock's* powerful *Aladdin* risk analysis and end-to-end investment management platform, which influences the management of around $20 trillion of assets worldwide.[84]

There is also a complex network of for-profit market intermediaries who run the plumbing, and continual functioning, of the financial system, including high frequency trading (HFT) market makers like *Citadel,* who dominates a material share of the market making and trade execution business in U.S. equity and options markets,[85] and *Jane Street,* one of the key participants in the arbitrage ecosystem powering the effective operation of an ETF.[86] One would think that market making firms like Citadel and Jane Street sidestep incentive misalignment problems given their market efficiency utility; however, this proposition isn't certain. In fact, given the nascent popularity of commission free trading applications like *Robinhood,* which Citadel pays for order flow,[87] their profit making incentives may be contributing to increased market volatility and distributive gains for Wall Street

83. *See* Lubasha Heredia, Simon Bartletta, Joe Carrubba, Dean Frankle, Katsuyoshi Kurihara, Benoît Macé, Edoardo Palmisani, Neil Pardasani, Thomas Schulte, Ben Sheridan & Qin Xu, *Global Asset Management 2020: Protect, Adapt and Innovate,* BOSTON CONSULTING GROUP (May 19, 2020), https://www.bcg.com/en-ca/publications/2020/global-asset-management-protect-adapt-innovate.

84. BlackRock's *Aladdin* risk management system – also called a "digital financial platform" has recently been described as "one of the most consequential and unexamined developments in global finance," *see* Dirk Andreas Zetzsche, William A Birdthistle, Douglas W Arner, & Ross P. Buckley, *Digital Finance Platforms: Toward a New Regulatory Paradigm,* 23:1 U. PA. J. BUS. L. 1, 2 (2020), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3532975.

85. *See* Tom Maloney & Sally Bakewall, *Citadel Securities Doubled Profit as Dominance Grew in 2020,* BLOOMBERG (September 25, 2020), https://www.bloomberg.com/news/articles/2020-09-25/citadel-doubled-profit-increased-dominance-in-wild-2020-trading.

86. *See* Robin Wigglesworth, *Jane Street: the top Wall Street firm 'no one's heard of,'* FINANCIAL TIMES (January 27, 2021), https://www.ft.com/content/81811f27-4a8f-4941-99b3-2762cae76542?shareType=nongift.

87. *Id.*

at the expense of main street investors.[88] Further, for-profit liquidity provision is historically fragile in a crisis due to risk that key participants in the financial ecosystem will disappear when their services are most needed (and when costs are most likely to be shared by all of society).[89]

In addition to ETF and mutual fund managers like BlackRock and Vanguard, PE firms have ballooned in size, profitability and economic influence since the 2008 crisis, while conventional investment banks, operating under the gambit of enhanced post-crisis regulation, have declined in market dominance.[90] Leveraged buyouts (LBOs) – a strategy where heavy debt is used to acquire private companies, which are then restructured and sold - were historically the "heart" of a PE firms' business.[91] There is significant variance in the form that an LBO can take, some driven by management, others by outsiders.[92] LBOs were heralded in the 1980's, based on the highly influential work of Professor Michael C. Jensen, as the remedy for conflicts and agency costs between corporate managers and shareholders in public corporations on issues such as firm size and use of cash flow.[93] The use of leverage to take a company private was also regarded as increasing shareholder value by unifying shareholder and managerial interests.[94]

Professor Tuch's work suggests a "transformation of the financial services industry" with PE deeply integrated in (and benefiting from) the evolution of Wall Street.[95] PE firm's fingerprints can now be found on nearly every segment of the economy, and these firms have thrived post-crisis under lower regulatory parameters than large banks, while investors seek yield in a low interest rate environment.[96] The operations of PE firms have widely expanded beyond LBOs to

88. *See infra* Section III(i)

89. *See infra* Sections III(a), IV(a), IV(b) & (IV)(g).

90. *See* Andrew F. Tuch, *The Remaking of Wall Street,* 7 HARV. BUS. L. REV. 315 (2018).

91. *See Everything is Private Equity Now,* BLOOMBERG BUSINESSWEEK (October 3, 2019), https://www.bloomberg.com/news/features/2020-12-29/shows-and-movies-to-binge-this-pandemic-winter.

92. *See* S. Kaplan & P. Stromberg, *Leveraged Buyouts and Private Equity,* 23(1) JOURNAL OF ECONOMIC PERSPECTIVES 121 (2009); S. Thompson & M. Wright, *Corporate Governance: The Role of Restructuring Transactions,* 105(430) ECONOMIC JOURNAL 690 (1995).

93. See Michael Jensen, *Agency costs of free cash flow, corporate finance and takeovers*, 76(2) AMERICAN ECONOMIC REVIEW 323 (1986);

94. Michael Jensen & William Meckling, *Theory of the firm: managerial behavior, agency costs, and ownership structure*, 3(4) JOURNAL OF FINANCIAL ECONOMICS 305 (1976); Michael C. Jensen, *Eclipse of the Public Corporation,* HARVARD BUSINESS REVIEW MAGAZINE (September -October 1989), https://hbr.org/1989/09/eclipse-of-the-public-corporation.

95. Tuch, *supra* note 89 at 338-350.

96. *Everything is Private Equity Now, supra* note 90.

activities conventionally performed by investment banks including M&A advice, securities underwriting, brokerage activities, proprietary trading, and the formation of diverse families of funds including hedge, traditional PE, VC, property, credit and infrastructure.[97] Even the educational sector is now at play in the PE handbook, where private college takeovers have been shown to increase tuition and per student debt levels, while lowing graduation rates, loan repayment rates and earning per graduates.[98] PE's post-crisis imprint is also notable in the residential real estate sector, where the needs of institutional investors and tenants are widely disparate, highlighted by a 2016 study in Georgia which revealed a 66 percent increased likelihood of eviction notices for institutionally controlled properties.[99]

PE firms have seized the coronavirus pandemic as an opportunity to grow their loan origination business.[100] *Apollo Global Management, Inc*. (Apollo), alongside PE mega firms *KKR* and *BlackStone*, have steadily maneuvered away from traditional leveraged buy-outs to loan underwriting since the 2008 financial crisis, while growing their primary credit divisions – once an exclusive function of "traditional financial institutions."[101] Since PE firms are not banks (and thus operate under lower regulatory parameters) they use investor funds, and other innovate measures like life insurance or annuity premiums, to fund the loans they offer.[102] Relatedly, Apollo and Blackstone., two of the largest PE firms, both recently entered the student loan business by purchasing the loan portfolio of Wells Fargo.[103] Even BlackRock has increased its PE footprint since the crisis, although

97. Tuch, *supra* note 89 at 342-350.

98. *See* Charlie Eaton, Sabrina Howell & Constantine Yannelis, *When Investor Incentives and Consumer Interests Diverge: Private Equity in Higher Education,* NATIONAL BUREAU OF ECONOMIC RESEARCH WORKING PAPER 24976 (April 2019), https://www.nber.org/papers/w24976.

99. *See* Prashant Gopal, *Wall Street, America's New Landlord, Kicks Tenants to the Curb,* BLOOMBERG (January 3, 2017), https://www.bloomberg.com/news/articles/2017-01-03/wall-street-america-s-new-landlord-kicks-tenants-to-the-curb.

100. *See* Mark Vandevelde & Sujeet Indap, *Apollo: how a private equity giant is navigating the crisis,* FINANCIAL TIMES (April 28, 2020), https://www.ft.com/content/6fce9808-84ab-11ea-b555-37a289098206

101. *Id.* ("Emulated by peers including Blackstone and KKR, Apollo's $200bn credit portfolio is among the slickest operators in America's "shadow banking" industry, churning out everything from residential mortgages to aircraft leases and commercial real estate loans.")

102. Id.

103. See Hannah Levitt, Wells Fargo to Sell Student Loan Book to Apollo, BlackStone, BLOOMBERG (December 18, 2020), https://www.bloomberg.com/news/articles/2020-12-19/wells-fargo-to-sell-student-loan-book-to-apollo-blackstone.

wresting market share may prove to be an uphill battle against sector incumbents.[104]

III. HOW MISALIGNED INCENTIVES CREATE PRIVATE GAINS

A. *Moral Hazard and Discretionary Liquidity*

Market intermediaries, like fixed income asset managers, can secure private gains while increasing the potential for moral hazard in corporate debt origination, since significant demand for fund-level liquidity transformation (turning thinly traded loans and over-the-counter bonds into instantly liquid exchange traded credit funds) can lower incentives to perform underwriting due diligence.[105] This moral hazard potential, reminiscent of the "originate to distribute" drivers which exacerbated "poor quality" mortgage loans in the 2008 crisis,[106] becomes even more significant considering the government's recent aggressive intervention in credit markets during the coronavirus initial selloff in March 2020.[107] Credit ETFs have intrinsic, product-level, fragilities since they rely on profit seeking market intermediaries to provide discretionary liquidity for price and operational stability.[108] The reliance on independent financial firms, who are motivated purely by market incentives, makes credit ETFs similar to prior financial products like auction rate securities (ARS),[109] and portfolio insurance,[110]

104. See Dawn Lim, BlackRock Scales Back Private-Equity Fund Ambitions, THE WALL STREET JOURNAL (January 1, 2021), https://www.wsj.com/articles/blackrock-scales-back-private-equity-fund-ambitions-11609497001?st=irm5h5zh6q4kwyp&reflink=article_email_share (identifying BlackRock's challenges raising money using an unconventional PE fund structure, without a proven track-record, that indefinitely locked-up investor money).

105. See Marco Pagano, Antonio Sanchez Serrano & Josef Zechner, Can ETFs Contribute To Systemic Risk? REPORTS OF THE ADVISORY SCIENTIFIC COMMITTEE NO.9, EUROPEAN SYSTEMIC RISK BOARD (June 2019), 3-4, 28-29, https://www.esrb.europa.eu/pub/pdf/asc/esrb.asc190617_9_canetfscontributesystemicrisk~983ea11870.en.pdf.

106. See Amiyatosh Purnanandam, Originate-to-distribute Model and the Subprime Mortgage Crisis, FDIC CENTER FOR FINANCIAL RESEARCH WORKING PAPER NO. 2010-08 (August 2010), https://www.fdic.gov/analysis/cfr/2010/wp2010/2010-08.pdf.

107. *See*, SECONDARY MARKET CORPORATE CREDIT FACILITY, FEDERAL RESERVE, POLICY TOOLS, https://www.federalreserve.gov/monetarypolicy/smccf.htm (last visited June 28, 2020); Andrea Riquier, *The Fed is Going to Buy ETFs. What Does It Mean?* MARKETWATCH (May 12, 2020), https://www.marketwatch.com/story/the-fed-is-going-to-buy-etfs-what-does-it-mean-2020-03-23.

108. *See* Clements, *New Funds I, supra* note 79 at 24-28.

109. *See id.* at 55 ("The ETF market echoes some of the follies of the ARS failure. First, there was a perception that ARS would be liquid, which later proved illusory when the intermediaries who were relied on to support the auction withdrew from the process. [*]. . .[*]. . .[*] This is similar to some of the expressed fears with ETFs—that the APs and other market makers, particularly those run by computer algorithms, will stop providing liquidity support to retail investors in the secondary market, thus backing out of the ETF market and redemption process when it is in their best economic interest to do so.")

which were also reliant on the discretionary actions of profit-seeking intermediaries for stability, which proved to be a fundamental element in their respective failure.[111]

Fragilities in the operational ecosystem of credit ETFs were revealed during the initial coronavirus market sell-off in March 2020.[112] Authorized participants (APs) - key intermediaries in the ETF operational ecosystem - stepped back from performing a vital stabilizing function in the operation of a credit ETF.[113] Bond dealers in the underlying markets stepped back from taking on balance sheet risk.[114] This resembled the way that intermediaries stepped back from supporting the ARS market in the 2008 crisis.[115] As a result, there was historic unprecedented dislocation in the trading price of credit ETFs relative to their net asset values (NAV).[116] Credit ETF price dislocations create the potential for interconnection and contagion risk if these products are used as near cash substitutes, or low duration secure investments (like money market mutual funds (MMMFs)) in the

110. See *Id.*at 51-52 ("Those fearing ETF liquidity death spirals see an analogous application; a financial instrument that is designed to provide liquidity could in fact amplify a run on liquidity and create a pro-cyclical sell-off for both the ETF and the underlying assets, which could cascade to other asset classes as well. Another parallel between ETFs and portfolio insurance that has proven to be a fallacy is the generally accepted belief that if futures selling drives too steep, discount arbitrageurs would step in and purchase the clearly undervalued stocks. [*]. . .[*]. . .[*] in 1987, there was an uncertainty about what the true value was and market participants were not active when they are were needed.")

111. *See id.* at 48-51.

112. *See* Clements, *Exchange Traded Confusion, supra* note 48 at 10.

113. *See* Ryan Clements, *What Have We Learned So Far About ETFs In The COVID-19 Crisis,* DUKE UNIVERSITY SCHOOL OF LAW GLOBAL FINANCIAL MARKETS CENTER FINREG BLOG (April 3, 2020), https://sites.law.duke.edu/thefinregblog/2020/04/03/what-have-we-learned-so-far-about-etfs-in-the-covid-19-crisis/#comment-668.

114. *See* Sirio Aramonte & Fernando Avalos, *The recent distress in corporate bond markets: cues from ETFs,* BANK FOR INTERNATIONAL SETTLEMENTS BULLETIN NO. 6 (April 14, 2020), 1-4, available at https://www.bis.org/publ/bisbull06.pdf;

115. *See* Clements, *New Funds I, supra* note 79 at 51.

116. *See* Gillian Tett, *ETFs are the canary in the bond coal mine,* FINANCIAL TIMES (July 29, 2020), https://www.ft.com/content/6bdc7747-3ab9-4410-a4b2-ba9acbe204e8; Lewis Braham, *Emerging Market ETF Pricing Another Victim of the Coronavirus Outbreak*, BARRON'S (March 26, 2020), https://www.barrons.com/articles/emerging-market-etf-pricing-another-victim-of-the-coronavirus-outbreak-51585217700; Andrea Riquier*, ETFs behaving badly: 'exactly what they are supposed to do' or 'just what we feared'?* MARKETWATCH (March 28, 2020), https://www.marketwatch.com/story/heres-how-to-think-about-the-turbulence-in-etf-pricing-and-heres-what-to-do-about-it-2020-03-27; *See* Dawn Lim*, Bond ETFs Flash Warning Signs of Growing Mismatch*, THE WALL STREET JOURNAL (March 23, 2020), https://www.wsj.com/articles/bond-etfs-flash-warning-signs-of-growing-mismatch-11584964801; *See* Brian Chappatta, *Bond ETFs Will Never Be The Same After Coronavirus,* BLOOMBERG OPINION (March 23, 2020), https://www.bloomberg.com/opinion/articles/2020-03-23/coronavirus-bond-etfs-will-never-be-the-same-after-this-crisis.

liquidity operation of other institutional investors.[117] For example, mutual funds may hold credit ETFs as cash or near cash substitutes, and if they receive redemption requests on their funds they may have to liquidate other assets if the near cash substitutes have fallen in value.[118] This contagion risk resembles the contagion risk experienced in the 2008 crisis when the *Reserve Primary Fund* (the oldest MMMF in the U.S.) "broke the buck" due to exposure to toxic Lehman Brothers commercial paper - facilitating a run on the MMMF market by investors who feared they held a cash substitute that wasn't redeemable at its par value.[119] Prior to March 2020, there was emerging evidence that low duration credit ETFs were also being used as MMMF "substitutes."[120]

Were it not for the Fed's intervention into the credit markets in March 2020,[121] including the unprecedented act of buying bonds and credit ETFs through its *Secondary Market Corporate Credit Facility* (SMCCF),[122] some of these contagion fears could have materialized.[123] Nevertheless, the Federal Reserve's intervention created a direct financial benefit for several ETF issuers since large capital inflows into bond ETFs took place after the SMCCF was announced – in fact, much larger than the actual amount of Fed-purchased ETFs.[124] By September 2020, new bond ETF purchases totaled over $150.1 billion ($133 billion of U.S. funds) despite total Federal Reserve ETF

117. *See* Pagano, Serrano & Zechner, *supra* note 104 at 3-4, 28-29; Katherine Greifeld, *Cash-Like ETFs See $3 Billion Exit After Fed Steps Into Market,* BLOOMBERG (March 30, 2020), https://www.bloomberg.com/news/articles/2020-03-30/fading-funding-squeeze-spurs-3-billion-exit-from-cash-like-etfs; Stephen Gandel, *The Market Time Bomb That's Bigger Than The Vix,* BLOOMBERG BUSINESSWEEK (February 7, 2018), https://www.bloomberg.com/news/articles/2018-02-07/there-s-a-time-bomb-bigger-than-the-vix-in-the-market.

118. Katherine Greifeld, *Fed Lifeline Saves Bond Funds Teetering on Brink of ETF Hell,* BLOOMBERG (March 28, 2020), https://www.bloomberg.com/news/articles/2020-03-28/fed-lifeline-shields-bond-funds-teetering-on-brink-of-etf-hell.

119. Phillip Swagel, *Legal, Political, and Institutional Constraints on the Financial Crisis Policy Response*, 29(2) J. OF ECON. PERSPECTIVES 107, 112-13 (2015); *See also* Phillip Swagel, *The Financial Crisis: An Inside View*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY (Spring 2009), 40-41; HENRY M. PAULSON, JR., ON THE BRINK: INSIDE THE RACE TO STOP THE COLLAPSE OF THE GLOBAL FINANCIAL SYSTEM, 233-34 (New York: Business Plus, 2010).

120. *See* Clements, *Exchange Traded Confusion, supra* note 48 at 63 ("After the Fed announced support for money market mutual funds (MMMFs) and commercial paper, investor flows from cash-like ETFs (being held as MMMF equivalents) were also reported.")

121. *See* Katherine Greifeld & Luke Kawa, *Fed's Historic Step Into Credit Market May Cure ETF Dislocations,* BLOOMBERG (March 23, 2020), https://www.bloomberg.com/news/articles/2020-03-23/fed-credit-backstop-fuels-surge-in-investment-grade-bond-etfs; *see* Aramonte & Avalos, *supra* note 113 at 4.

122. *See* FEDERAL RESERVE, *supra* note 106.

123. *See* Greifeld, *supra* note 117.

124. The Federal Reserve's intervention into credit secondary markets has led to its characterization of being a "buyer of first and last resort", *see* Riquier, *supra* note 106.

purchases of $8.7 billion, including a wide number of "high yield" (also colloquially known as "junk") bond funds.[125] BlackRock experienced a particular windfall from the Fed's first ever intervention in corporate credit markets (including ETFs), in addition to the fact that the Fed handed over the reins of managing the crisis directly to the world's largest asset manager.[126] The Fed's aggressive intervention undoubtedly calmed markets and eased investor concerns, yet heightened investor confidence manifested in massive funding inflows to BlackRock ETFs which were already some of the largest of their kind in the market.[127] Thus BlackRock emerged as a financial, and literal profit, benefactor of government intervention due to a product with inherent fragilities that it put into the marketplace.

B. *Incentive Misalignment in the Private Equity Playbook*

PE firms have wide operational freedom in perhaps the most opaque, profitable (and under-regulated) segment of the asset management industry - an observation that has led to recent criticism and calls for reform.[128] The PE industry has also come under fire recently for its use of "continuation funds" (also known as "sidecar deals") as liquidity vehicles in the coronavirus pandemic, when merger and going public transactions have waned.[129] These innovations use new in-

125. *See* Riquier, *supra* note 106. The Federal Reserve bond ETF purchases during the coronavirus pandemic has been in a variety of fund types including investment grade corporate credit (*BlackRock iShares iBoxx $ Investment Grade Corporate Bond ETF* (LQD)); short and intermediate term corporate credit (*BlackRock iShares Intermediate-Term Corporate Bond ETF* (IGIB), *BlackRock iShares Short-Term Corporate Bond ETF* (IGSB), *State Street SPDR Portfolio Intermediate Term Corporate Bond ETF* (SPIB), *State Street SPDR Portfolio Short Term Corporate Bond ETF* (SPSB), *State Street SPDR Portfolio Short Term Corporate Bond ETF* (USIG), *Vanguard Intermediate-Term Corporate Bond ETF* (VCIT), *Vanguard Short-Term Corporate Bond ETF* (VCSH); and high yield (junk) bond ETF varieties (*VanEck Vectors Fallen Angel High Yield Bond ETF* (ANGL), *BlackRock iShares iBoxx $ High Yield Corporate Bond ETF* (HYG), *Xtrackers USD High Yield Corporate Bond ETF* (HYLB), *State Street SPDR Bloomberg Barclays High Yield Bond ETF* (JNK), *BlackRock iShares 0-5 Year High Yield Corporate Bond ETF* (SHYG), State *Street SPDR Bloomberg Barclays Short Term High Yield Bond ETF* (SJNK), and *BlackRock iShares Broad USD High Yield Corporate Bond ETF* (USHY)).

126. *See* Cezary Podul & Dawn Lim, *Fed Hires BlackRock to Help Calm Markets. It's ETF Business Wins Big,* THE WALL STREET JOURNAL (September 18, 2020), https://www.wsj.com/articles/fed-hires-blackrock-to-help-calm-markets-its-etf-business-wins-big-11600450267.

127. *Id.* ("The funds the Fed ultimately did buy became even more popular with investors, who put $48 billion into them in the first half of 2020, nearly twice the amount that went in the year before. BlackRock funds were especially popular: They took in $34 billion, about 160% more than in the first half of 2019.")

128. *See* Jonathan Ford, *Investors need to lift the lid on private equity,* FINANCIAL TIMES (September 20, 2020), https://www.ft.com/content/d4f55b78-2119-44de-912e-a96d3639a31f.

129. *See* Kaye Wiggins, *How Selling to yourself became private equity's go-to deal,* FINANCIAL TIMES (December 27th, 2020), https://www.ft.com/content/ee914ea4-4ad9-4eec-97c3-95af841122bf.

vestor money to purchase a company already owned by a different fund within the PE firm's portfolio, triggering concerns about fair market price valuations and investor transparency in the price determination process.[130] At the "heart" of this transaction is a conflict of interest, since both the buyer and the seller in the transaction is controlled by the same PE firm.[131] Continuation funds highlight a fundamental incentive misalignment problem – firms who operate as asset managers or financial intermediaries are untethered from the need to create something productive, that benefits society in some way, in order to exact a profit. These firms can profit from financial engineering or restructuring - often shrouded in opacity – reaping "distributive" gains, or profits that "would otherwise be available to others and therefore comes at their expense."[132]

Another striking recent example of incentive misalignment in the PE world is the nascently popular practice of dividend recapitalizations – an increasingly prominent part of a modern day PE company's "playbook."[133] In a dividend recapitalization, a PE controlled company will borrow large sums to pay out significant dividends.[134] Investor and creditor demand for yield in a near-zero interest rate environment, with corresponding aggressive government intervention in credit markets, have fueled this strategy.[135] Dividend recapitalizations have dramatically increased since the coronavirus pandemic.[136] The maneuver creates an asymmetrical benefit for the PE firm at the expense of the company, who is now saddled with more debt, while the PE firm has locked in gains as a hedge against future setbacks.[137] Massachusetts Democratic Senator, and former Presidential Candidate Elizabeth Warren has called for legislation banning PE firms from engaging in this practice within two years of company acquisition; which proposed legislation was included in the *Stop Wall Street*

130. *Id.*

131. *Id.*

132. *See* Roger Bootle, THE TROUBLE WITH MARKETS, SAVING CAPITALISM FROM ITSELF, 84 (2009).

133. *See* Brian Spegele & Laura Cooper, *Risky Loans Secure Private-Equity Payouts Despite Downturn,* THE WALL STREET JOURNAL (December 17, 2020), https://www.wsj.com/articles/risky-loans-secure-private-equity-payouts-despite-downturn-11608216781?st=q2q36i87v7savx9&reflink=article_email_share.

134. *Id.*

135. *See* Joe Rennison, *Private equity owners pile on leverage to pay themselves dividends,* FINANCIAL TIMES (September 16, 2020), https://www.ft.com/content/a9ff463b-01d7-4892-82dc-2dbb74941a16.

136. Spegele & Cooper, *supra* note 132.

137. *Id.*

Looting Act, which has received two readings and has now been referred to the Senate Committee on Finance.[138]

C. *Rent Seeking and Regulatory Influence*

Another misaligned incentive problem for market intermediaries is their motivation to engage in lobbying or other measures to influence regulators and obtain favorable regulatory treatment. The success of banks and other financial intermediaries to obtain regulatory accommodations in the U.S. over the past fifty years, has been well documented.[139] The use of regulatory policy to maintain and increase profit, without a productive output is also known as "rent seeking."[140] It represents a "market distortion" which creates a net social welfare loss and wealth transfer in favor of the financial industry.[141] Rent seeking has a pernicious impact on innovation and economic growth, and high levels of rent seeking have shown to be "self-sustaining" because of its "natural increasing returns."[142]

One of the more subtle, but effective, forms of rent seeking occurs in the forum of technical rule and regulatory consultations where financial firms are hired by regulatory agencies for advisory work – essentially directing how their own interests should be regulated.[143] A European Union (EU) ombudsman recently reported a potential conflict of interest when the EU's executive branch awarded BlackRock

138. *Id.; see* s.2155 – Stop Wall Street Looting Act, 116th Congress (2019-2020).

139. *See* Thomas I. Palley, *Financialization: What It Is and Why It Matters,* WORKING PAPERS WP153, POLITICAL ECONOMY RESEARCH INSTITUTE, UNIVERSITY OF MASSACHUSETTS AT AMHERST, 16-18 (2007) (Describing a variety of regulatory accommodations for banks including deregulatory measures, favorable competition restrictions, tax breaks favoring market incumbents, labor market protection erosions, and international capital mobility expansions); *see* Jihad Dagher, *Regulatory Cycles: Revisiting The Political Economy of Financial Crisis,* INTERNATIONAL MONETARY FUND WORKING PAPER (January 15, 2018), 16-17, https://www.imf.org/en/Publications/WP/Issues/2018/01/15/Regulatory-Cycles-Revisiting-the-Political-Economy-of-Financial-Crises-45562; Donald Tomaskovic-Devey & Ken-Hou Lin, *Income Dynamics, Economic Rents, and the Financialization of the U.S. Economy*, 76 AMERICAN SOCIOLOGICAL REVIEW 538, 544 (2011).

140. See Gordon Tullock, The Welfare Costs Of Tariffs, Monopolies, and Theft, 5 W. ECON. J. 224 (1967); Anne O. Kreuger, The Political Economy of the Rent Seeking Society, 64 AM. ECON. REV. 291 (1974); Thomas Philippon, Brief: Finance, Productivity, and Distribution, BROOKINGS INSTITUTE GLOBAL ECONOMY AND DEVELOPMENT (October 2016), https://www.brookings.edu/wp-content/uploads/2018/01/philippon-october-2016.pdf;

141. Jeremy Kidd, Fintech: Antidote To Rent-Seeking? 93 CHI. KENT L. REV. 165, 167-170 (2018).

142. See Kevin M. Murphy, Andrei Shleifer &Robert W Vishny, Why Is Rent-Seeking So Costly to Growth? 83(2) AMERICAN ECONOMIC REVIEW PAPERS AND PROCEEDINGS 409 (1993).

143. See Dieter Holger & Dawn Lim, EU Official Raises Vetting Concerns Over BlackRock Contract, THE WALL STREET JOURNAL (November 25, 2020), https://www.wsj.com/articles/eu-official-raises-vetting-concerns-over-blackrock-contract-11606295834?st=7ozs9nem79qsuxf&reflink=article_email_share.

an advisory contract on future banking regulations.[144] Without rigorous and consistent monitoring of consulting contracts, large asset managers increase their influence through regulatory capture in the form of small favorable rule changes.[145] BlackRock has a clear financial incentive in obtaining such favorable treatment, and given their size and scope, can potentially underbid other advisors (like academics, and industry practitioners) for these consulting contracts.[146]

BlackRock has become extremely influential with the government – and was described recently by one reporter as "the latest chapter in a decadelong shift in the financial power structure, with the largest asset managers gaining ground on Wall Street banks."[147] The world's largest asset manager was recently tapped to manage the Federal Reserve's corporate bond buying program during the coronavirus pandemic, alongside Pacific Investment Management Co (PIMCO) who also assisted with commercial paper purchasing,[148] BlackRock's job came in the form of a no-bid contract with the Fed to handle its secondary market corporate credit purchasing facility, including primary market corporate bonds (newly issued debt), secondary market corporate credit products (publicly traded bonds and ETFs, including junk bonds) and agency issued commercial mortgage backed securities through *Fannie Mae*, *Freddie Mac* and *Ginnie Mae*.[149] BlackRock has directly benefited from the Fed's invention in the credit ETF market, using its influence to steer the purchases of numerous BlackRock issued ETFs, and reaping significant residual fee-benefits from resulting investor surges into twenty-seven of the firm's funds (all of which were deemed eligible for the Fed's buying program).[150]

144. Id.

145. Id.

146. Id.

147. *See* Dawn Lim & Gregory Zuckerman, *Big Money Managers Take Lead Role in Managing Coronavirus Stimulus,* THE WALL STREET JOURNAL (May 10, 2020), https://www.wsj.com/articles/big-money-managers-take-lead-role-in-managing-coronavirus-stimulus-11589130185?mod=article_inline.

148. *Id.*

149. *see* Annie Massa, *Why BlackRock Has a Role in the Fed Bond-Buying Spree,* BLOOMBERG QUICKTAKE (March 25, 2020), https://www.bloomberg.com/news/articles/2020-03-25/why-blackrock-has-a-role-in-the-fed-bond-buying-spree-quicktake. BlackRock was issued a "no-bid" contract to assist the Federal Reserve during the 2008 financial crisis ("in the aftermath of the 2008 financial crisis, the Federal Reserve turned to BlackRock to oversee $130 billion in distressed debt formerly on the books of Bear Stearns Cos. and American International Group.")

150. *See* Podul & Lim, *supra* note 125 ("BlackRock's share of assets increased in 27 funds Morningstar Inc. analysts deemed potentially eligible for the Fed program. BlackRock's share grew from 51% on March 20 to about 56% on July 23, when the Fed last bought ETFs, according to Morningstar."); *see* Andera Riquier, *The Fed has bought $8.7 billion worth of ETFs. Here are the details.* MARKETWATCH (September 21, 2020), https://www.marketwatch.com/story/the-fed-has-been-buying-etfs-what-does-it-mean-11600704182

D. *The Politics, Influence and Conflicts of Index Construction*

The passive investing revolution has also made markets more susceptible to misaligned incentives, political manipulation, and conflicts of interest. A recent study described the process of index construction[151] by commercial providers (prominently *Morgan Stanley Capital International (MSCI), Standard & Poor's (S&P), FTSE Russell, and Dow Jones Indices (DCI)*) as an "inherently political" one, where "private authority" is conferred, not through democratic processes, but rather as form of "de facto regulatory power" through the exercise of index inclusion discretion.[152] The decision to include or exclude a company can result in billions of dollars of capital flows either towards or away from domestic economies.[153] Inclusionary decisions are influenced by index providers' normative assessments of a company's governance.[154] Further, many countries, particularly emerging economies, lack the power to challenge exclusionary decisions, with little to no recourse for being passed over as "investment worthy," added to a negatively associated "watchlist," or being labelled as a "frontier" market.[155]

The political element of index inclusionary decisions was prominently manifest in MSCI's decision to include Chinese companies in its major indices, resulting in significant capital flows to China.[156] Studies on index construction also reveal certain "network externalities" preserving the market authority (and political power) of the largest index providers including a first-mover "capture" of national and regional markets, the fact that equity investors "benchmark" their

151. An "index" is a representative measure of the performance of an underlying "basket" of assets, *see* U.S. SEC. & EXCH. COMM'N, *Fast Answers Market Indices,* https://www.sec.gov/fast-answers/answersindiceshtm.html (last accessed June 27, 2020) (hereinafter "SEC Indices").

152. *See* Johannes Petry, Jan Fichtner & Eelke Heemskerk, *Steering capital: the growing private authority of index providers in the age of passive asset management*, REVIEW OF INTERNATIONAL POLITICAL ECONOMY 1 (2019), ("Arguably, in this new age of passive asset management index providers are to equity markets what credit rating agencies are to bond markets – critical gatekeepers that exert de facto regulatory power.")

153. *Id.* at 155 ("Their new authority was not delegated from the public sphere, but gradually emerged as part of a transformation of the index provider industry – from primarily supplying information about markets to becoming private authorities that are able to set standards on corporate governance and steer international capital flows.")

154. *Id.* at 154 ("Index providers therefore play a role as standard-setters: their notions on what constitutes good corporate governance at the level of the firm and a favorable investment environment at the level of (national) markets helps or hinders firms and countries in attracting capital, essentially deciding what is investment-worthy in global financial markets.")

155. *Id.* at 167-68.

156. *See* Mike Bird, *How China Pressured MSCI to Add Its Market To Major Benchmark,* THE WALL STREET JOURNAL (Feb. 3, 2019), https://www.wsj.com/articles/how-china-pressured-msci-to-add-its-market-to-major-benchmark-11549195201.

performance to the longest standing indices, and their use as an underlying reference for a variety of derivatives contracts.[157] These index providers are also currently subject to very light regulation, despite being susceptible to manipulation, conflicts, and bias.[158]

A unique set of conflicts, and market inefficiencies, emerge when asset managers construct a bespoke index for a single ETF or Mutual Fund (which unique index is often licensed through an affiliate entity) - a phenomenon cited by Professor Adrianna Robertson as existing in an "overwhelming majority" of fund structures.[159] Given the ubiquity of bespoke indices constructed for single funds, Robertson called nomenclature in passive investing misleading, and suggested they should be more appropriately described as a form of "delegated management."[160] There are numerous market externalities that emanate from bespoke index creation or affiliate index licensing. First, unexperienced investors might be harmed (even subject to predation) if asset managers obscure, or bury, their fee disclosures for affiliated index licensing costs.[161] Second, performance assessments of similar funds are nearly impossible to perform when benchmarks are heterogeneously constructed.[162] Further obscuring investor comparisons are the fact that funds with similar names often have very different underlying holdings,[163] methodologies of calculating their underlying NAV,[164] and variable cash management and securities lending practices.[165] The harder it is for investors to compare funds, the less likely it is that risk and capital will be efficiently allocated.[166]

E. *Fund Portfolio Composition and Proxy Voting Conflicts*

Asset managers who make active portfolio composition choices (like in non-index mutual funds and actively managed exchange traded funds) also have conflicts of interest, and misaligned incentives,

157. *See* Petry, Fichtner & Heemskerk, *supra* note 151 at 158.

158. *See* Robert J. Jackson & Steven Davidoff Solomon, *What's Really In Your Index Fund*? New York Times (Feb. 18, 2019), https://www.nytimes.com/2019/02/18/opinion/index-fund.html

159. *See* Adriana Robertson, *Passive in Name Only: Delegated Management and 'Index Investing',* 36 YALE J. ON REG. 795, 833, 836 (2019).

160. *See id.* at 796-798.

161. *See id.* at 834-835, 841.

162. *See id.* at 797-798, 805-806; *see* Clements, *Exchange Traded Confusion, supra* note 48.

163. *See* Clements, *Exchange Traded Confusion, supra* note 48 at 7, 26-32.

164. *Id.* at 15-17.

165. *Id.* at 23-26.

166. *See* Megan Greene, *Passive Investing Is Storing Up Trouble,* FINANCIAL TIMES (August 2, 2018), https://www.ft.com/content/cdbdd01a-95b4-11e8-95f8-8640db9060a7; Sushko & Turner, *supra* note 62 at 114, 199; *See* Robin Greenwood & David Scharfstein, *The Growth of Finance,* 27(2) JOURNAL OF ECONOMIC PERSPECTIVES 3, 6 (2013).

which can lead them to make investment inclusion decisions that are entirely unrelated to economic fundamentals of companies.[167] In fact, enlightening new research from Professor John Coffee reveals that asset managers may intentionally neglect idiosyncratic risk factors of underlying portfolio companies in favor of systemic governance measures, since doing so is economically rational.[168] Coffee observes that "fundamental transitions" characterize modern financial markets – driven by institutional investor's dominating both trading and ownership concentration (largely through fund intermediation), while increasing the demand for *environmental, social and governance* (ESG) disclosures.[169]

Coffee notes that in this transition "sharp conflicts" have emerged in the disclosure preferences of asset managers (as institutional common owners) and individual (often retail) investors: asset managers, as common owners, are the ultimate diversified investor, and are primarily concerned with the systematic risk factor (undiversifiable risk),[170] and thus seek out greater ESG disclosures.[171] As fully diversified common owners, asset managers vote "portfolio wide," and seek to maximize the value of the portfolio as a whole, not the value of individual stocks,[172] and in so doing they have incentives to encourage risky behavior in individual companies, while mitigating non-diversifiable systematic risk.[173] Undiversified retail investors tend to have the opposite perspective and preferences.[174] This presents a double-edged sword since systematic risk will decrease over time, but idiosyncratic risk will increase for individual companies (leading to more individual company failure).[175]

167. See Nitish Kumar, Yuehua Tang & Kelsey D. Wei, Quid Pro Quo: Evidence from Mutual Funds as Friendly Shareholders of Investment Banks, UNPUBLISHED WORKING PAPER (December 14, 2020), at 30, available at https://ssrn.com/abstract=3711791.

168. *See* John C. Coffee, *The Future of Disclosure: ESG, Common Ownership, and Systematic Risk,* EUROPEAN CORPORATE GOVERNANCE INSTITUTE - LAW WORKING PAPER 541/2020 ((September 21, 2020), available at https://ssrn.com/abstract=3678197.

169. *Id.*

170. Modern portfolio theory posits that the riskiness of an asset is comprised of two factors, an "idiosyncratic" risk factor (also called "unsystematic risk") that is unique to the asset (or company), and a "systemic" risk factor that is common to the market. *See* Markowitz, *supra* note 61; W.F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk,* 19(3) JOURNAL OF FINANCE 425 (1964); J. Lintner, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets*, 47(1) REVIEW OF ECONOMICS AND STATISTICS 13 (1965)

171. Coffee, *supra* note 167 at 1, 4, 37.

172. *Id.* at 4.

173. *Id.* at 1, 5-6, 37.

174. *Id.* at 21.

175. *Id.* at 35-37.

Research has shown that mutual fund investment and voting decisions are influenced by business relationships with underlying portfolio companies.[176] Recent empirical studies by researchers at the University of Florida and the University of Texas at Dallas revealed that mutual funds, as a form of "quid pro quo" to investment banks, were nearly twice as likely to invest in the stocks of an investment bank if the fund company (or family of funds) had a brokerage business relationship.[177] Mutual fund proxy voting decisions were also shown in this study to be biased towards management of "connected" brokerages on contentious shareholder matters,[178] and IPO allocation decisions.[179] In return, these investment banks provide a steady stream of "exclusive" benefits to the asset managers including, among others, "tipping" on analyst research,[180] execution services,[181] preferences on underpriced initial public offerings,[182] access to information about "proprietary order flow,"[183] and non-public information about investment banking clients.[184]

F. *SPAC Sponsor Incentive Misalignments*

An increasingly popular financial intermediation structure is a "special purpose acquisition company" - commonly known by its acronym SPAC – which uses investor cash, raised through a short-term public

176. *See* L. Cohen & B. Schmidt, *Attracting flows by attracting big clients,* 64 JOURNAL OF FINANCE 2125 (2009); D. Cvijanoviæ, A. Dasgupta & K.E. Zachariadis, *Ties that bind: How business connections affect mutual fund activism* 71 JOURNAL OF FINANCE 2933 (2016).

177. *See* Kumar, Tang & Wei *supra* note 166 at 1, 2 ("Institutional investors manage trillions of dollars of assets and are prized clients of investment banks because they often pay billions of dollars in brokerage commissions per year and pay an important role in the underwriting business.")

178. *See id.* at 3. The "friendly" voting dynamic noted in the study was also noted in circumstances where *Institutional Shareholder Service* (ISS) was recommending voting against management. This is a significant finding (and evidence of bias) in light of other research documenting the propensity of asset managers to follow ISS recommendations. *see* P. Iliev & M. Lowry, *Are mutual funds active voters?* 28 REVIEW OF FINANCIAL STUDIES 446 (2015).

179. *See* Kumar, Tang & Wei *supra* note 166 at 22, 30.

180. *See* P. Irvine, M. Lipson & A. Puckett, *Tipping*. 20 REVIEW OF FINANCIAL STUDIES 20, 741 (2007); J. L. Juergens & L. Lindsey, *Getting out early: An analysis of market making activity at the recommending analyst's firm* 64 JOURNAL OF FINANCE 64, 2327 (2009).

181. *See* Kumar, Yang & Wei, *supra* note 166.

182. *See* J. Reuter, *Are IPO allocations for sale? Evidence from mutual funds,* 61 JOURNAL OF FINANCE 2289 (2006); M. Nimalendran, J.R. Ritter & D. Zhang, *Do today's trades affect tomorrow's IPO allocations?* 84 JOURNAL OF FINANCIAL ECONOMICS 87 (2007).

183. *See* A. Barbon, M. Di Maggio, F. Franzoni, & A. Landier, *Brokers and order flow leakage: Evidence from fire sales,* 74 JOURNAL OF FINANCE 2707 (2019); M. Di Maggio, F. Franzoni, A. Kermani & C. Sommavilla, C., *The relevance of broker networks for information diffusion in the stock market*, 134 JOURNAL OF FINANCIAL ECONOMICS 419 (2019).

184. *See* N. Kumar, K. Mullally, S. Ray & Y. Tang*, Prime (information) brokerage,* 137 JOURNAL OF FINANCIAL ECONOMICS 371 (2020)

offering of a corporate shell, to merge with an operational private company.[185] SPAC sponsors (often hedge or PE firms or well-connected executives) receive a "promote" - a material equity stake in the SPAC for a nominal purchase price - and options to purchase warrants in the SPAC, and these benefits often materialize significant profits for the sponsor, even on companies that struggle post-SPAC, because of the promotes exceptionally low acquisition cost.[186]

Hedge fund billionaire Bill Ackman has specifically criticized the "misaligned incentives" in the compensation structure of SPACs between sponsor interests and ordinary investors (including long-term shareholders) since the discounted shares, and other standard fees, create a "drag" on the latter's returns.[187] Recent research from Professors Michael Klausner and Michael Ohlrogge shows that costs built into SPAC structures are "subtle, opaque and far higher than previously recognized."[188] Klausner and Ohlrogge posit that investors "bear the cost of dilution built into the SPAC structure" and effectively "subsidize" the company since for every $10 per share that an SPAC raises, by the time it merges with its target this amount has been effectively reduced to $6.67 due to embedded costs.[189] The authors also identify an additional "incentive misalignment" between sponsors and ordinary investors in the common practice of the sponsors infusing the SPAC initial public offering with several hundred million dollars because the investment will be lost if a merger doesn't take place; therefore the sponsor may pressure the SPAC to merge on terms unattractive to long-term shareholders.[190]

185. *See* Ortenca Aliaj, Sujeet Indap & Miles Kruppa, *The Spac sponsor bonanza,* FINANCIAL TIMES (November 12, 2020), https://www.ft.com/content/9b481c63-f9b4-4226-a639-238f9fae4dfc; This critique is becoming increasingly common lately and the problem of SPAC incentive misalignment been noted in a variety of other recent media, or advocacy group reports. *See* Margot Patrick and Amrith Ramkumar, *"Led by 'Mr. SPAC,' Credit Suisse Cashes In on Blank-Check Spree,"* WALL STREET JOURNAL (February 5, 2021) https://www.wsj.com/articles/led-by-mr-spac-credit-suisse-cashes-in-on-blank-check-spree11612527389?mod=article_inline; *see* AMERICANS FOR FINANCIAL REFORM, LETTER TO MEMBERS OF HOUSE FINANCIAL SERVICES COMMITTEE (February 16, 2021), available at https://ourfinancialsecurity.org/wp-content/uploads/2021/02/AFR-Letter-on-SPACs-to-HFSC-FINAL.pdf.

186. *See* Ortenca, Indap & Kruppa, *supra* note 184.

187. *Id.*

188. See Michael D. Klausner & Michael A. Ohlrogge, *Sober Look at SPACs*, STANFORD LAW AND ECONOMICS OLIN WORKING PAPER NO. 559, NYU LAW AND ECONOMICS RESEARCH PAPER NO. 20-48 (October 28, 2020), 1, https://ssrn.com/abstract=3720919

189. *Id* at 3-4.

190. *Id.* at 20.

G. *Indirect Payments, Revenue Sharing and Pension Intermediaries*

Pension administrators are susceptible to conflicted enticements through indirect payments in the form of "revenue-sharing" arrangements offered by third-party fund companies.[191] These opaque benefits "allow recordkeepers to extract additional rents from plan participants" and have been shown in a study of the 1000 largest 401(k) pension plans in the U.S. from 2009 to 2013 to affect the "menu design" of available funds – and not "offset" by lower direct fund fees, or better performance of the offered funds.[192] The compensation enticements noted in the study took the form of "rebates" received by recordkeepers from mutual fund companies.[193] In other words, the fund company charged investors recordkeeping expenses in their expense ratio but passed the recordkeeping fee back to the plan recordkeeper.[194] Fund companies that offered these rebates were highly favored by plans, and more likely to be retained, despite often having higher expense ratios, while the revenue sharing benefits weren't passed down to investors in the form of lower expense ratios.[195]

H. *Perception Deception: Fund Names and "Greenwashing"*

A significant multi-pronged challenge in investment funds (particularly ETFs) is that there aren't established fund naming or index consistency conventions.[196] This creates several potential problems for investors and creates misaligned incentives for market intermediaries. For example, investors may have difficulty distinguishing conventional ETFs from other products like levered or inverse ETPs, or unsecured debt instruments called *exchange traded notes* (ETNs).[197] Further,

191. See Veronika Krepely Pool, Clemens Sialm & Irina Stefanescu, *Mutual Fund Revenue Sharing in 401(k) Plans*, WORKING PAPER (December 20, 2020), available at https://ssrn.com/abstract=3752296

192. *Id.* at 35.

193. *Id* at 1.

194. *Id.* at 26.

195. *Id.* at 35. This study supports prior research showing conflicts of interest and rent extraction in compensation incentives for pension intermediaries and service providers, *see* R. Inderst & M. Ottaviani, *How (not) to pay for advice: A framework for consumer protection,* 105 JOURNAL OF FINANCIAL ECONOMICS 393 (2012); N.M. Stoughton, Y. Wu, & J. Zechner, *Intermediated investment management*, 66 JOURNAL OF FINANCE 947(2011); and general conflicts of interest existing between plan sponsors and mutual fund companies, *see* V.K. Pool, C. Sialm & I. Stefanescu (2016). *It pays to set the menu: Mutual fund investment options in 401(k) plans,* 71 JOURNAL OF FINANCE 71, 1779 (2016)

196. *See* Clements, *Exchange Traded Confusion, supra* note 48 at 26-30.

197. In March 2020 it was reported that unaware investors who were "burned" when issuing banks evoked redemption rights in complex debt-based exchange traded notes had engaged litigation, *see* Akane Otani & Sebastian Pellejero, *Bankrupt in Just Two Weeks' – Individual Inves-*

two funds can have similar names despite entirely different underlying portfolios,[198] leading one commentator to call ETFs a "vaudeville act."[199] The potential for ETF issuers to capitalize on idiosyncratic trends,[200] or "factor" focused funds (like value investing) is tremendous in ETFs, and investors may not perform comprehensive due diligence on whether a fund's underlying portfolio holdings align with its name.[201]

Another misaligned incentive in market intermediation is that of "greenwashing," – proactive public signals, not backed by operational evidence, that a firm is engaging in sustainability practices.[202] Whether the pursuit of sustainability goals is worthwhile or justifiable is the subject of live academic debate.[203] Professors Lucian Bebchuk and Roberto Tallarita argue that stakeholder governance, the primary mechanism for ESG initiatives, is both "inadequate" and "counterproductive," and also imposes "major costs" and could stand in the

tors Get Burned by Collapse of Complex Securities, THE WALL STREET JOURNAL (June 1, 2020), https://www.wsj.com/articles/bankrupt-in-just-two-weeksindividual-investorsget-burned-by-collapse-of-complex-securities-11591020059.

198. *See* Clements, *Exchange Traded Confusion, supra* note 48 at 26, 27.

199. See GRANT'S INTEREST RATE OBSERVER, *On the ETF Divide*, Volume 34, No. 19b (October 14, 2016).

200. Sloane Ortel, Paul Kovarsky & Antonella Puca, *How to see the hidden risks of ETFs*, CFA INSTITUTE (January 1, 2018), https://blogs.cfainstitute.org/investor/2018/01/18/howto-see-the-hidden-risks-of-etfs/

201. *See* George Athanassakos, *Why investors aren't getting true value stocks with value ETFs*, THE GLOBE AND MAIL (October 2, 2019), https://www.theglobeandmail.com/investing/markets/etfs/article-why-investors-arentgetting-true-value-stocks-with-value-etfs/.

202. *See* Hao Liang, Lin Sun & Melvyn Teo, *Greenwashing,* WORKING PAPER, 1 (May 26, 2020), available at https://ssrn.com/abstract=3610627; Other conflicts between intermediaries and investors have been noted in an emerging literature around this subject including conflicts in relation to pension trustees fulfilling their fiduciary duty of loyalty, see Max Matthew Schanzenbach & Robert H. Sitkoff, *Reconciling Fiduciary Duty and Social Conscience: The Law and Economics of ESG Investing by a Trustee* 72 STAN LAW REV. 381 (2020).

203. Compare Cynthia A. Williams, Corporate Social Responsibility and Corporate Governance, in THE OXFORD HANDBOOK OF CORPORATE LAW AND GOVERNANCE, 52 (Jeffrey N. Gordon & Wolf-Georg Ringe eds. 2018); Martin Lipton, Steven A. Rosenblum & Karessa L. Cain, Thoughts for Boards of Directors in 2020, HARV. L. SCH. F. ON CORP. GOVERNANCE (Dec. 10, 2019), https://corpgov.law.harvard.edu/2019/12/10/thoughts-for-boards-of-directors-in-2020/; Colin Mayer, Shareholderism versus Stakeholderism – A Misconceived Contradiction. A Comment on "The Illusory Promise of Stakeholder Governance" by Lucian Bebchuk and Roberto Tallarita 10 (EUROPEAN CORP. GOVERNANCE INST., LAW WORKING PAPER NO. 522/2020, 2020), https://ecgi.global/sites/default/files/working_papers/documents/mayerfinal.pdf [all in support of stakeholder governance]; against Lucian A. Bebchuk, The Myth of the Shareholder Franchise, 93 VA. L. REV. 675, 729–32 (2007); Lucian Arye Bebchuk, The Case for Increasing Shareholder Power, 118 HARV. L. REV. 833, 908–13 (2005); Robert C. Clark, Harmony or Dissonance - The Good Governance Ideas of Academics and Worldly Players, 70 BUS. LAW. 321, 338 (2015); Leo E. Strine, Jr., The Dangers of Denial: The Need for a Clear-Eyed Understanding of the Power and Accountability Structure Established by the Delaware General Corporation Law, 50 WAKE FOREST L. REV. 761, 768 (2015) [all expressing skepticism of stakeholder governance].

way of meaningful protection for stakeholders.[204] Investor demand for ESG considerations in portfolio decision-making creates a potential conflict of interest (and misaligned incentive) for asset managers to "deceptively endorse" sustainability principles (like the *United National Principles for Responsible Investment*[205]) to attract capital flows, without ensuring ESG principles are reflected in investment decisions.[206] There is an inherent agency conflict here, since investor capital flows are influenced by both investor preferences (like ESG) and fund performance (alpha).[207] Therefore, if actual ESG measures are a drag on performance, fund managers may jettison sustainable businesses, despite prior ESG signaling.[208] Thus ESG becomes an *ex ante* marketing strategy, not an *ex post* guiding investment ethos. Relatedly, ESG investing imposes subjectivity, and "substantial information acquisition costs" on an asset manager, which increases incentives to abandon it after investment capital is captured.[209]

I. *Who Benefits from Volatility and Destabilized Markets?*

Between January 25th and January 29th, 2021 the U.S. stock market witnessed an ostensible "revolution" as retail stock traders in a matter of days, powered by the fintech stock trading app Robinhood, bid up the prices of several stocks like the video game retailer *GameStop* (GME) to over 500 percent of their value.[210] The driving force behind this remarkable surge was a coordinated attack, organized through the Reddit forum *WallStreetBets* (WSB), and other social media channels and online forums, against several hedge funds who had outstanding short positions in GME and other companies negatively affected by the coronavirus pandemic.[211] WSB publicly conceived a plan to "short squeeze" these funds by buying and holding GME stock and

204. Lucian A. Bebchuk & Roberto Tallarita, The Illusory Promise of Stakeholder Governance, forthcoming, CORNELL L. REV (December 2020), HARVARD LAW SCHOOL JOHN M. OLIN CENTER DISCUSSION PAPER NO.1052, available at https://ssrn.com/abstract=3544978 (the authors strongly advocate that "Stakeholderism" should be rejected and that "external interventions" should take place to protect stakeholder interests "via legislation, regulation and policy design.")

205. See PRINCIPLES FOR RESPONSIBLE INVESTMENT, https://www.unpri.org/ (last accessed January 11, 2021).

206. See Hao Liang, Lin Sun & Melvyn Teo, Greenwashing, HARVARD LAW SCHOOL FORUM ON CORPORATE GOVERNANCE (November 17, 2020), https://corpgov.law.harvard.edu/2020/11/17/greenwashing/.

207. Id.

208. See Liang, Sun & Teo, supra note 201.

209. Id.

210. *See* Jason Zweig, *The Real Force Driving the GameStop Revolution,* THE WALL STREET JOURNAL (January 30, 2021), https://www.wsj.com/articles/the-real-force-driving-the-gamestop-amc-blackberry-revolution-11611965586.

211. *Id.*

call options to drive the price so high that the hedge funds would be forced to buy back the stock or close their positions at dramatic losses.[212] Incredibly the plan worked, resulting in the hedge fund *Melvin Capital* losing 53% of its value.[213] Days into the squeeze, Robinhood, the fintech discount brokerage at the heart of the retail buying frenzy, placed buying restrictions on GameStop and similarly surging stocks of companies like AMC, Bed Bath & Beyond, and Nokia, which quickly prompted a class action lawsuit from aggrieved retail investors.[214]

In the aftermath of the GameStop saga the Wall Street Journal revealed that many of the early purchasers of the stock were not "Reddit day traders or Discord users" but hedge funds, including *Senvest Management LLC* who reaped a whopping $700 million profit from their position in the beleaguered video game retailer.[215] While the episode was widely framed as a "triumph of amateurs over professionals" the truth is much different – with hedge funds reaping a tremendous share of the distributive gains.[216] Ironically, the most likely "victim" in a hedge fund short squeeze is actually a pension benefactor - often a union worker or employee who relies on the fund's stability for retirement planning.[217] Market intermediaries are the only true winners from a destabilized, highly volatile market, untethered from fundamentals, with enhanced retail participation. Fintech firms like Robinhood encourage investors to trade frequently (the more the better) since they sell the execution of their stock and options trades (known as "payment for order flow") to HFT market makers like *Citadel Securities* or *Virtue*,[218] and also facilitate the use of leverage, and

212. *See* Alexis Goldstein, *What happened with Gamestop?* MARKETS WEEKLY (January 28, 2021), https://marketsweekly.ghost.io/what-happened-with-gamestop/.

213. *See* Jazmin Goodwin, *Melvin Capital hedge fund lost 53% in the GameStop frenzy,* CNN BUSINESS (February 1, 2021), https://www.cnn.com/2021/01/31/investing/melvin-capital-reddit-gamestop/index.html.

214. *See* Fernando Alfonso III, *Class-action lawsuit filed against Robinhood following outrage over GameStop stock restriction,* CNN BUSINESS (January 29, 2021), https://www.cnn.com/2021/01/28/investing/lawsuit-robinhood-gamestop-wallstreetbets/index.html.

215. *See* Juliet Chung, *This Hedge Fund Made $700 Million on GameStop,* THE WALL STREET JOURNAL (February 3, 2021), https://www.wsj.com/articles/this-hedge-fund-made-700-million-on-gamestop-11612390687.

216. *Id.*

217. See Eric Reguly, The real victims in the GameStop madness are the pension funds, not the hedge fund bosses, THE GLOBE AND MAIL (January 29, 2021), https://www.theglobeandmail.com/business/commentary/article-the-real-victims-in-the-gamestop-madness-are-the-pension-funds-not-the/.

218. *See* Kate Rooney & Maggie Fitzgerald, *Here's How Robinhood is raking in record cash on customer trades – despite making it free,* CNBC (August 13, 2020), https://www.cnbc.com/2020/08/13/how-robinhood-makes-money-on-customer-trades-despite-making-it-free.html.

the purchase of option contracts by unexperienced investors "as easily as they purchase a latte."[219] The huge profitability potential for options trading creates a significant conflict of interest for Robinhood and other fintech online brokerages.[220] HFT firms thrive, and profit, in volatility markets while also potentially "undermining efficient capital allocation."[221]

Trading activity and volume has also surged with the nascent popularity of ETFs.[222] They also revealed themselves as the "tool of choice" for many traders in the March 2020 coronavirus crisis.[223] Higher ETF turnover benefits online brokerages like Robinhood and other fintechs interfacing with retail investors drawn into purchasing thematic ETFs.[224] Yet higher retail participation in the markets likely represents a net wealth transfer away from Main Street in favor of Wall Street, resulting in even deeper wealth inequality,[225] since the vast majority of retail investors will underperform market averages.[226] The firms truly better off by heightened volatility and accelerated trading are firms who provide no productive by-products at all, but rather perform some utility within an increasingly complex financial market infrastructure, like HFT, market making firms,[227] or ETF arbitrageurs, some of which may also becoming systemically important in the process.[228]

219. Deborah B. Soloman, *Gensler Faces Big Challenge in Tackling GameStop's Wild Ride,* THE NEW YORK TIMES (February 1, 2021), https://www.nytimes.com/2021/02/01/business/economy/gamestop-sec.html

220. Rooney & Fitzgerald, *supra* note 217.

221. *See* Yesha Yadav, *How Algorithmic Trading Undermines Efficiency in Capital Markets,* 68 VANDERBILT LAW REV. 1607 (2015)

222. *See* Steve Johnson, *ETF trading surges on European stock Exchanges,* FINANCIAL TIMES (January 24, 2021), https://www.ft.com/content/1c527341-e99a-4312-8ba2-a23abc63f045?shareType=nongift.

223. Dawn Lim & Mischa Frankl-Duval, In Market Rout, ETFs Are Where The Action Is, THE WALL STREET JOURNAL (March 15, 2020), https://www.wsj.com/articles/in-market-rout-etfs-are-where-the-action-is-11584270000.

224. *See* Ksenia Galouchko, *Robinhood effect is starting to shake up a stuffy ETF market* BNN BLOOMBERG (July 20, 2020), https://www.bnnbloomberg.ca/robinhood-effect-is-starting-to-shake-up-a-stuffy-etf-market-1.1467788.

225. There is evidence of a relationship between heavily financialized economies and increased income and wealth inequality. N.van der Zwan, *Making sense of financialization*. 12 SOCIO-ECONOMIC REVIEW 99 (2014); Basak Kus, *Financialization and Income Inequality in OECD Nations: 1995-2007*, 43(4) THE ECONOMIC AND SOCIAL REVIEW 477, 492 (2012).

226. *See* Wayne Duggan, *Why Investing As An Individual Is So Difficult,* MARKETWATCH (December 11, 2019), https://www.marketwatch.com/story/why-investing-as-an-individual-is-so-difficult-2019-12-11.

227. *See* Scott Patterson & Alexander Osipovich, *High-Frequency Traders Feast on Volatile Market,* THE WALL STREET JOURNAL (March 27, 2020), https://www.wsj.com/articles/high-frequency-traders-feast-on-volatile-market-11585310401

228. *See* Wigglesworth, *supra* note 85.

IV. HOW MISALIGNED INCENTIVES LEAD TO SHARED COSTS

A. *Perpetual Debt Generation & the "Global Doom Loop"*

Debt has played a pervasive role in the evolution of post-war American culture.[229] Highly influential contemporary French economist Thomas Piketty has extensively documented the prominence of debt in modern society, and how it influences social factors like income and wealth inequality.[230] Minsky also noted that a "fundamental characteristic of the modern international economic structure is that strong financial linkages exist among the various national entities."[231] These linkages include financial asset ownership, as well as payment commitments on debt.[232] Minsky suggested, however, that since debt principle could be perpetually "rolled over," commitments to repay were only enforced on a default of periodic interest payments.[233] Studies on Minsky's MMC have also noted how this evolved capitalistic system prioritizes capital gains (asset inflation), while promoting debt and "collateral based lending over income based lending," as such, it's prone to volatile asset price movements.[234]

Professors Robert Hockett and Saule Omarova have identified how private market intermediaries now play an integral role in both the modulation and allocation of new credit.[235] One of the many misaligned incentives in our modern financialized system is the misallocation of credit, away from productive enterprise, and back into the financial system.[236] Professor Katharina Pistor has persuasively illustrated how market intermediaries sit at the control panel of a financial machine that perpetually "mints" debt-based instruments that are cash convertible, widely traded, durable, and confer powerful priority rights on their holders.[237] Pistor posits that the result of this debt proliferation incentive (which also uses a variety of legal mechanisms such as trusts, collateral, contract law and the corporation[238]) is a

229. *See* L. Hyman, *Debtor Nation: How Consumer Credit Built Postwar America*, 9 ENTERPRISE AND SOCIETY 614, 614-18 (2008).

230. *See* THOMAS PIKETTY, CAPITAL IN THE TWENTY-FIRST Century (Boston: Harvard University Press, 2017); THOMAS PIKETTY, CAPITAL AND IDEOLOGY (Boston: Harvard University Press, 2020)

231. *See* Minsky, *Money Manager Capitalism, supra* note 1 at 23.

232. *Id.*

233. *Id.* at 24.

234. *See* Tymoigne & Wray, *surpa* note 27 at 51.

235. *See* Robert C. Hockett & Saule Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143, 1149, 1153-1155 (2017).

236. *Id.* at 1214.

237. KATHARINA PISTOR, THE CODE OF CAPITAL (Princeton: Princeton University Press, 2019) at 77-108.

238. *Id.* at 86.

highly volatile, complex and hierarchal financial system.[239] The 2008 crisis evidenced how financialized, and layered debt, could destructively wreak havoc through the financial system.[240]

Professor Arthur Wilmarth has convincingly illustrated how governments persistently intervene in markets to rescue universal banks who arrive at precarious junctures due to their own profit seeking behaviors.[241] The linked interdependence between the sovereign, the large universal banks (UB), the global "shadow banks" (SB) (who are often the same market intermediaries profiled in this article), investors, and creditors has generated what Wilmarth calls a "global doom loop."[242] He describes this destructive (and perpetuating) cycle as follows: first, central banks provide "too-big-to-fail" guarantees to UBs and large SBs and frequently use stabilizing intervention in the economy (like quantitative easing (QE)); second, with the "support of easy money" central bank policies, these UBs and SBs increasingly finance public and private sector debt; third, buoyed by the easy credit generation, investors and creditors take larger risks because they know the government will intervene in a crisis.[243]

The "global doom loop" was perpetuated during March 2020 coronavirus pandemic financial crash, and further illustrates the government's willingness to use aggressive liquidity measures to intervene in financialized products that generate system-wide instability. In addition to propping up unravelling bond and credit ETF markets,[244] the Fed acted as "the world's backup lender,"[245] with several reports also remarking on the Fed's embrace of "QE infinity."[246] Professor L. Randall Wray noted how Minsky foresaw that in MMC, financial market participants would "adjust their expectations to include government bailouts should anything go wrong."[247] Wray suggests

239. *Id.* at 79.

240. *See id.* at 48, 87, 99;

241. ARTHUR E. WILMARTH JR., TAMING THE MEGABANKS, WHY WE NEED A NEW GLASS-STEAGALL ACT (Oxford: Oxford University Press, 2020), 265-298.

242. *Id.* at 12-13, 320, 325-27, 353-55.

243. *Id.* at 12.

244. *See* Riquier, *supra* note 106.

245. Serena Ng & Nick Timiraos, *Covid Supercharges Federal Reserve as Backup Lender to the World,* THE WALL STREET JOURNAL (August 3, 2020), https://www.wsj.com/articles/fed-federal-reserve-jerome-powell-covid-coronavirus-dollar-lending-economy-foreign-currency-11596228151.

246. *See* Robert Guy, *Why the Fed went nuclear with QE Infinity,* FINANCIAL REVIEW (March 24, 2020), https://www.afr.com/markets/equity-markets/why-the-fed-went-nuclear-with-qe-infinity-20200324-p54d8x; Michael Mackenzie, *The Federal Reserve has gone well past the point of 'QE Infinity',* FINANCIAL TIMES (March 23, 2020), https://www.ft.com/content/11b338a2-6d0c-11ea-89df-41bea055720b.

247. Wray, *supra* note 19 at 40.

"ironically, the success of the interventions encourages more risk taking."[248] This perfectly describes the 2020 Fed bailouts of bad corporate debt and credit ETFs,[249] and the perpetual drivers powering the "global doom loop."[250]

B. *The Shared Social Costs of Liquidity Transformation*

Credit ETFs lead to shared costs when they perform a "liquidity transformation" and turn thinly traded and often opaque bonds and loans into highly liquid ETFs.[251] The integrity of these products is contingent on other financial firms, under market incentives, to perform a stabilizing "arbitrage" function.[252] Discretionary arbitrage as a stabilizing mechanism has proven to be historically fragile in a crisis.[253] Here "animal spirits" reign,[254] market discipline deteriorates,[255]

248. *Id.*

249. *See* Jeff Cox, *The Fed bought more blue-chip and junk bonds, and has started making Main Street loans,* CNBC (August 10, 2020), https://www.cnbc.com/2020/08/10/the-fed-bought-more-blue-chip-and-junk-bonds-and-has-started-making-main-street-loans.html#:~:text=in%20addition%2C%20the%20Fed%20stepped,pandemic%20and%20then%20were%20downgraded.

250. *See* Wilmarth, *supra* note 240.

251. *See* Clements, *New Funds I, supra* note 79 at 32-34 (2020); Randall W. Forsyth, *Corporate Credit Could Be the Next Bubble to Burst*, BARRON'S (Feb. 15, 2019, 11:42 AM), https://www.barrons.com/articles/debt-be-not-proud-danger-in-the-complacency-about-corporate-credit-51550248974 (quoting Stephanie Pomboy, "In 2007, the lie was that you could take a cornucopia of crap, package it together, and somehow make it AAA," she says. "This time, the lie is that you can take a bunch of bonds that trade by appointment, lump them together in an ETF, and magically make them liquid."); *see* Stephen Foley, *The Alchemy of ETF Liquidity is an Illusory Promise,* FINANCIAL TIMES (April 4, 2015), https://www.ft.com/content/cc44cd76-d918-11e4-b907-00144feab7de

252. The necessity of discretionary intermediation to perform a stabilizing arbitrage function to maintain ETF integrity has been cited frequently, *see* Clements, *New Funds I, supra* note 79 at 30-32; Clements, *Are ETFs, supra* note 48 at 812-814; Henry T.C. Hu & John Morley, *A Regulatory Framework For Exchange Traded Funds,* 91 S. CAL. L. REV. 839, 853 (2018); Henry T.C. Hu & John Morley*, The SEC and Regulation of Exchange-Traded Funds: A Commendable Start and a Welcome Invitation*., 92 S. CAL. L. REV. 1155, 1196 (2019); CENTRAL BANK OF IRELAND, *Exchange Traded Fund Discussion Paper* (2017), 41-51, available at https://www.centralbank.ie/docs/default-source/publications/discussion-papers/discussion-paper-6/discussion-paper-6—-exchange-traded-funds.pdf; DEPOSITORY TRUST & CLEARING CORPORATION, *The Next Crisis Will Be Different: Opportunities To Continue Enhancing Financial Stability 10 Years After Lehman's Insolvency*, INDUSTRY WHITE PAPER (September 2018) at 13-14; Srichander Ramaswamy, *Market Structures and Systemic Risks of Exchange Traded Funds,* BANK FOR INTERNATIONAL SETTLEMENTS WORKING PAPER NO. 343 (April 2011), available at https://www.bis.org/publ/work343.pdf.

253. *See* Clements, *New Funds I, supra* note at 45-51. A clear example from recent history is the failure of index arbitrageurs to stabilize price differentials between equity and futures markets during the Black Monday crash of October 19, 1987, *see* Mark Carlson, *A Brief History of the 1987 Stock Market Crash With A Discussion of The Federal Reserve Response,* FINANCE AND ECONOMICS DISCUSSION SERIES, DIVISIONS OF RESEARCH AND STATISTICS AND MONETARY AF-

investor herds form around information cascades and noise,[256] and prices become an unreliable signal of fundamental information.[257] The costs of liquidity transformation manifested in the early March 2020 coronavirus selloff, when credit ETFs traded at historic price discounts from NAV.[258] Assumptions failed, arbitrage (again) proved to be fragile in a crisis as intermediaries managed their own internal risks and backed away from performing their discretionary stabilizing function.[259] It was only after an unprecedented intervention into credit markets (including the purchasing of bond ETFs) by the Federal Reserve that prices and NAVs stabilized and re-aligned.[260] In the imme-

FAIRS, FEDERAL RESERVE BOARD, (publishing abbreviations), Nov. 2006, at 11 available at https://www.federalreserve.gov/pubs/feds/2007/200713/200713pap.pdf.

254. *See* GEORGE A. AKERLOF & ROBERT J. SHILLER, ANIMAL SPIRITS: HOW HUMAN PSYCHOLOGY DRIVES THE ECONOMY, AND WHY IT MATTERS FOR GLOBAL CAPITALISM, 116-130 (Princeton Univ. Press, 2nd ed. 2010).

255. The concept of "market discipline" implies that firms will continually make rational decisions, including buying under-valued assets as a stabilizing arbitrage function. However, history proves that market discipline is illusive, and fragile, in a crisis. *See* David Min, *Understanding The Failures of Market Discipline,* 92 WASH. U. L. REV. 1421 (2015). For example, market discipline proved fragile during the Auction Rate Securities failure in the lead up to the 2008 global financial crisis. *See* Joe Prendergast, Craig McCann & Eddie O'Neal, *Auction Rate Securities,* 16 No. 4 PIABA B.J. 383 (2009). Market discipline also proved fragile in the wholesale funding market runs during the 2008 crisis. *See* Michal Kowalik, *Opacity and Disclosure in Short-Term Wholesale Funding Markets,* FEDERAL RESERVE BANK OF BOSTON WORKING PAPER RPA 16-02, 1 (Sep. 15, 2016); William O. Fisher, *Predicting a Heart Attack: The Fundamental Opacity of Extreme Liquidity Risk*, 86 TEMP. L. REV. 465, 485 (2014).

256. An information cascade emerges "when people form beliefs based upon the belief or opinion of others" *see* Bryan Druzin & Jessica Li, *Censorship's Fragile Grip on The Internet: Can Online Speech Be Controlled,* 49 CORNELL INT'L L.J. 369, 387-88 (2016); Cass R. Sunstein, *Wall Street's Lemmings,* THE NEW REPUBLIC (Oct. 10, 2018), https://newrepublic.com/article/63023/wall-streets-lemmings; Brett McDonnell, *Don't Panic! Defending Cowardly Interventions During and After A Financial Crisis,* 116 PENN. ST. L. REV. 1 (2011); M. Humayun Kabir, *Did Investors Herd During The Financial Crisis? Evidence From The US Financial Industry,* 18(1) INT'L REV. FINE. 59 (2018); Robert C. Hockett, *Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Monetary Markets, Macroeconomies and Formally Similar Contexts,* 3 J. FINIAL. PERSPS. (2015); Steven L. Schwarcz, *Regulating Complacency: Human Limitations and Legal Efficacy,* 93 NOTRE DAME L. REV. 1073, 1077-78 (2018).

257. *See* Andrei Shleifer & Robert W. Vishny, *The Limits of Arbitrage,* 52(1) J. FINE. 35, 38 (1997) ("performance-based arbitrage is particularly ineffective in extreme circumstances, where prices are significantly out of line and arbitrageurs are fully invested. In these circumstances, arbitrageurs might bail out of the market when their participation is most needed.")

258. Trading price discounts were ubiquitous in the credit market during this period and affected a variety of ETF types including high-yield and "junk" varieties, investment grade corporate credit funds, and even normally "ultra-stable" short-maturity (near cash) bond ETFs. *See* Chappatta, *supra* note 115; Gillian Tett, *supra* note 115; Riquier, *supra* note 115; Clements, *supra* note 112; Marc Gerstein, *Why Your Supposedly Stable Fixed-Income ETF Fell Off A Cliff*, FORBES (Mar. 23, 2020), https://www.forbes.com/sites/marcgerstein/2020/03/23/why-your-supposedly-stable-fixed-income-etf-fell-off-a-cliff/#7a1c08bf7ba5.

259. *See* Aramonte & Avalos, *supra* note 113 at 1-4; Lim, *supra* note 115.

260. *See* Greifeld, *supra* note 117; Greifeld & Kawa, *supra* note 120; Aramonte & Avalos, *supra* note 113 at 4.

diate wake of the ETF price dislocation a frequent industry explanation was that ETFs were performing "price discovery" for underlying bonds.[261] There are many good reasons to be skeptical of this narrative, including the fact that mutual funds with identical portfolios (and which calculated their NAVs in the same way) were not similarly dislocated, which if the price discovery argument is correct implies that the mutual funds were mispriced.[262] One researcher called the price discovery argument a form of "heads I win, tails you lose" by the industry because when ETFs are aligned with NAV they operate as intended (and are an improvement on closed-end funds), yet when they dislocate they are performing price discovery![263]

Before the coronavirus crash in March 2020 there was growing evidence that firms, and other institutional investors were using ultra-short duration credit ETFs as cash and near cash substitutes, in their liquidity management operations.[264] The price dislocations in credit ETFs during the coronavirus selloff are fundamentally derived from the fact that these investment credit products perform a liquidity transformation by packaging over-the-counter, and often thinly traded bonds and loans into instantly liquid secondary market product.[265] These products work, until they don't, and history shows us that liquidity transformation often leads to governmental intervention and support in a crisis.[266] The more opaque, and mismatched the asset

261. *See* Lewis Braham, *The Coronavirus Crash Reveals a Big Problem in Bond Fund Pricing,* BARRON'S (Apr. 3, 2020), https://www.barrons.com/articles/coronavirus-crash-bond-fund-pricing-problem-51585848504.

262. *Id.*

263. *See* David Tuckwell, *Bond ETF discounts are not 'price discovery'* ETF STREAM (Mar. 19, 2020), https://www.etfstream.com/features/bond-etf-discounts-are-not-price-discovery/.

264. *See* Pagano, Serrano & Zechner, *supra* note 104 at 3-4, 28-29; Greifeld, *supra* note 116; Stephen Gandel, *supra* note 116; Max Chen, *Wary Investors Can Turn To Cash Alternative, Ultra-Short-Duration Bond ETFs,* ETF TRENDS (Feb. 12, 2019), https://www.etftrends.com/fixed-income-channel/wary-investors-can-turn-to-cash-alternative-ultra-short-duration-bond-etfs/?utm_source=yahoo&utm_medium=referral&utm_campaign=readMore

265. *See* Stephen Gandel, *supra* note 116.

266. There have been numerous instances where government intervention was necessary to remedy systemic problems associated with liquidity transformation. In 2008 the government had to bail out the money market mutual fund (MMMF) sector, which had performed a liquidity transformation by turning short term instruments like commercial paper originated in the "shadow banking" sector into cash substitutes. The Federal Reserve intervened in the MMMF market when the *Reserve Primary Fund* reduced its net asset value below $1 ("breaking the buck") due to investments in toxic asset backed commercial paper, precipitating in a run on the MMMF industry *see* Paulson, *supra* note 118 at 234; Swagel, *supra* note 118 at 112–13; Swagel, *supra* note 118 at 40–41; MORGAN RICKS, THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION (Univ. Chi. Press, 2016), 96–101; government intervention was also needed in liquidity transformation in credit ETFs during the aforementioned Federal Reserve intervention in credit markets, Greifeld & Kawa, *supra* note 120; Riquier, *supra* note 106.

class, the more likely a future problem can emerge,[267] especially if the resulting financial product is considered highly liquid (even cash substitutable).[268] Additionally, liquidity mismatch creates misaligned incentives and conflicts for ETF authorized participants who also profit from dealer activity in the underlying bond market.[269]

C. *Private Equity's Opaque (and Moving) Value Proposition*

The net societal long-term value proposition of LBOs is unclear. There is contested and varied evidence that these takeover structures lead to lower worker wages and job loss,[270] decreased corporate investment,[271] and higher risk of bankruptcy for firms who must now operate under the stranglehold of an unforgivingly leveraged balance sheet.[272] Perhaps the strongest accusation against PE, aligned with the thesis of this article, is that it creates an incentive for wealth extraction rather than creation if wages can be reduced (with cost savings transferred to PE investors) under economic efficiency arguments that the marginal product of the employee labor is less than its cost.[273]

An unsettling and recurrent concern is transparency in PE firm's "apparently seductive" returns, which aren't subject to the same disclosure standards as mutual funds or ETFs, despite being frequently

267. *See* Martin Kacperczyk & Philipp Schnabl, *When Safe Pro.ved Risky: Commercial Paper during the Financial Crisis of 2007-2009*, 24(1) J. OF ECON. PERSPECTIVES 29, 34–37 (2010).

268. See TIMOTHY F. GEITHNER, STRESS TEST: REFLECTIONS ON FINANCIAL CRISES 195-96 (N.Y.C.: Broadway Books, 2014), (stating that "[m]oney market funds were widely viewed as virtually indistinguishable from bank deposits as similarly safe vehicles for storing cash with slightly better interest rates").

269. *See* Kevin Pan & Yao Zeng, *ETF Arbitrage Under Liquidity Mismatch 2*, EUROPEAN SYSTEMIC RISK BOARD WORKING PAPER NO. 59 (2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3723406

270. *See* Steven J. Davis, John Haltiwanger, Kyle Handley, Ben Lipsius, Josher Lerner & Javier Miranda, *The Economic Effects of Private Equity Buyouts,* BECKER FRIEDMAN INSTITUTE WORKING PAPER NO. 2019-122 (Oct. 2019), available at https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_2019122.pdf; Also, compare E. APPLEBAUM & R. BATT, PRIVATE EQUITY AT WORK (2014); Mayra Rodriguez Valladares, *Private Equity Firms Have Caused Painful Job Losses and More Are Coming,* FORBES (October 30, 2019), https://www.forbes.com/sites/mayrarodriguezvalladares/2019/10/30/private-equity-firms-have-caused-painful-job-losses-and-more-are-coming/?sh=77e8a7e67bff [all contending that PE firms fragilize wage stability and lead to net job loss while enriching the profits and payouts of PE firms] with EY, *Economic Contribution of the US Private Equity Sector in 2018,* REP. PREPARED AMN INVMENT Council (Oct. 2019); Kevin Amess, Souragel Girma & Mike Write, *The Wage and Employment Consequences of Ownership Change,* 35(2) MANAGERIAL AND DECISION ECONOMICS 161 (2014) [citing the positive impact of private equity on wages and job growth]

271. *Everything is Private Equity Now, supra* note 90.

272. *See* Brian Ayash & Mahdi Rastad, *Leveraged Buyouts and Financial Distress,* UNPUBLISHED WORKING PAPER (July 20, 2019), available at https://ssrn.com/abstract=3423290

273. *See* A. Shleifer & L.H. Summers, *Breach of Trust in Hostile Takeovers,* in CORPORATE TAKEOVERS: CAUSES AND CONSEQUENCES, A. Auerbach (eds.) (Aug. 1987).

purchased by large pension funds.[274] There is also empirical evidence that, over the last twenty years, PE firms haven't outperformed comparatively "cheap" passive index funds, and that private equity returns are comparable to public company equities.[275] Accusations have also been levied that PE returns are not only "hard to measure" but that they can be overstated (using a variety of discretionary valuation measures), hide true volatility (since portfolio companies aren't publicly traded), and that returns can be "gamed" by timing when investor capital is deployed.[276]

D. *The Shared Costs of Securities Price Distortions*

Market euphoria, like that exhibited in the recent *meme stock* saga for walking dead companies like BlackBerry, AMC and the aforementioned brick and mortar GameStop video game distributor, wasn't motivated by a "belief in that firm's growth potential" but was rather powered by an incentive to drive losses for hedge funds, or ride a wave to a short term speculative payoff.[277] The reality of fintech and democratized market access is that this type of fundamentally dislocated market behavior is likely here to stay, and with that most of society - other than firms who benefit from increased market volatility like those described above,[278] and a few one off Reddit legends like "Roaring Kitty"[279] - are actually much worse off in a market where prices don't reflect economic realities of companies, or the true underlying value of assets.

Professor Jay Cullen has argued that a "qualitative" technological shift has taken place in market infrastructure, led by the nascent dominance of ETFs as trading vehicles and algorithmic, automated trading mechanisms; and while trading is now faster and occurs at higher

274. *See* Ford, *supra* note 127 (noting the potential for investor confusion when private equity (PE) firms cite internal rate of return (IRR) in their marketing efforts, which could be misleading as it failed to disclose the cash return schedule, assumes that cash returned to investors can then reinvested at the stated IRR, and it fails to deduct from the IRR the PE firm's large fees which can often be as high as 7 percent).

275. See Alexander Beath & Christopher Flynn, Benchmarking the Performance of Private Equity Portfolios of the World's Largest Institutional Investors: A View from CEM Benchmarking, 30(1) THE JOURNAL OF INVESTING 67 (2020); Chris Flood, Cheap tracker funds trounce private equity, FINANCIAL TIMES (December 12, 2020), https://www.ft.com/content/0640d664-083e-4439-8fe4-faa06eee6e17;

276. See Everything is Private Equity Now, supra note 90.

277. See Soloman, supra note 218.

278. See supra Section III(i).

279. See Nathaniel Popper and Kellen Browning, The 'Roaring Kitty' rally: How a Reddit user and his friends roiled the markets, CHICAGO TRIBUTE (January 29, 2021), https://www.chicagotribune.com/nation-world/ct-nw-nyt-reddit-user-roiled-markets-20210129-onigx-uxctnhw7adjsbmhn2udnq-story.html.

volumes, the "role of information" has also changed where investors now look to the actions of a small group of influential actors rather than making investment decisions in accordance with their own research.[280] This increases the potential for investor herding, disincentivizes active price discovery, allows for both "free-riding" and "front-running" by algo-traders, and "crowds" out the real information signals of informed investors.[281]

Early in March 2020, as the market moved to price in the full impact of the coronavirus pandemic, Robin Wigglesworth of the *Financial Times* argued that the contextual events were actually indicative of a larger evolution – where markets were now "shock led" and characterized by "stronger, longer booms and grim but rapid busts."[282] The drivers of this evolution as suggested by Wigglesworth,[283] are very much related to Minsky's MMC and the thesis of this paper – that the behaviors of profit seeking intermediaries create externalities detached from the capital needs of productive enterprises or the "process of creative destruction" inherent in entrepreneurial pursuits.[284] Specifically, Wigglesworth cited the increased use of option writing by traders and financial firms to increase returns,[285] the increasingly common use of "value-at-risk"[286] in portfolio composition decisions made by institutional money managers (which can facilitate pro-cyclical selling momentum), the nascent growth of "volatility targeting" funds, and liquidity pull-back from high frequency trading algorithms.[287] Others support a similar assertion that the current volatile state of the market is a "byproduct" of its modern architecture –

280. Jay Cullen, Exchange-Traded Funds (ETFS) and FINTECH: Market Efficiency and Systemic Risk, ROUTLEDGE HANDBOOK OF FINANCIAL TECHNOLOGY AND LAW, UNIVERSITY OF OSLO FACULTY OF LAW RESEARCH PAPER NO. 2020-33 (October 13, 2020), at 2, available at https://ssrn.com/abstract=3710610.

281. Id.

282. See Robin Wigglesworth, Coronavirus mayhem reflects phenomenon of 'shock-led' markets, FINANCIAL TIMES (March 6, 2020), https://www.ft.com/content/f25dbda0-5ecf-11ea-b0ab-339c2307bcd4 (support for this assertion was the increasing occurrence of the "ratio of five-day volatility to three-month volatility.")

283. Id.

284. See JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY (1950), 81-87.

285. See Wigglesworth, supra note 281. ("option "writing" means that a trader sells an option - the right to buy or sell an underlying asset. By selling the option the trader obtains an immediate premium payment, and thus has increased their portfolio returns; however, in volatile times the writer of the option may resort to asset fire sales, or additional derivatives selling, to cover their loss exposure.").

286. Id.; see Will Kenton, Value at Risk (VaR), INVESTOPEDIA (April 18, 2019), https://www.investopedia.com/terms/v/var.asp ("Value at risk (VaR) is a statistic that measures and quantifies the level of financial risk within a firm, portfolio or position over a specific time frame.")

287. See Wigglesworth, supra note 281.

and that asset price distortion is occurring from the gigantic success of passive investing, and "synthetic attempts to generate yield by systemically selling volatility."[288]

Programmatic trading and volatility targeting are incentivized in our modern financial system, and there is very little evidence that either of these activities contribute to creative or productive enterprise (or lead to job creation, other than for those working at a few financial firms). Trading today is dominated by "trend" strategies, where buying or selling decisions are "driven by algorithmic or programmatic trading systems", which increase market volatility.[289] Even index funds, which have grown tremendously in popularly, are a "momentum" strategy because underlying securities are bought or sold programmatically based on the decision to buy or sell the index.[290] Our modern financial system allows intermediaries to extract profits, while sharing the externalities of price inefficiency, and increased system volatility with all. Each time an index fund is purchased, a corresponding underlying basket of individual securities must be acquired.[291] Yet the desire to own a fund is unrelated to the idiosyncratic attributes of individual securities within that fund, or a desire to purchase one of the underlying securities because of its perceived fundamental value.[292]

As a result, the entire fund industry adds a layer of activity to the financial market ecosystem entirely detached from a desire to buy (or sell) the individual underlying security based on an assessment of that company's merit.[293] In other words, passive investing is undermining active price discovery, and given the unprecedented success and scale of passive investing we can't be certain that prices accurately reflect true information about a company.[294] Passive investing has also been associated with a spectrum of phenomena suggesting an inefficient

288. *See* LOGICA CAPITAL ADVISERS, LLC, *Policy in a World of Pandemics, Social Media and Passive Investing* (March 26, 2020), https://www.logicafunds.com/policy-in-a-world-of-pandemics.

289. David Thomas, *A Warning From The Late John Bogle,* FORBES (February 12, 2019). https://www.forbes.com/sites/greatspeculations/2019/02/12/a-warning-from-the-late-john-bogle/?sh=1ec58d962b99

290. *Id.*

291. *Id.*

292. See Lawrence R. Glosten et al., *ETF Activity and Informational Efficiency of Underlying Securities*, COLUMBIA BUS. SCH., RESEARCH PAPER NO. 16-71, (2019), 15–16 available at https://ssrn.com/abstract=2846157; Reed Stevenson, *The Big Short's Michael Burry Explains Why Index Funds Are Like Subprime CDO*s, BLOOMBERG (Sept. 4, 2019, 5:41 AM), https://www.bloomberg.com/news/articles/2019-09-04/michael-burry-explains-why-indexfunds-are-like-subprime-.

293. *See* Yun Li, *80 % of the Stock Market is Now on Autopilot,* CNBC (June 29, 2019, 8:30 AM), https://www.cnbc.com/2019/06/28/80percent-of-the-stock-market-is-now-onautopilot.html

294. See Sushko & Turner, *supra* note 62 at 113-114, 129.

market - including trading price correlations in securities,[295] and momentum outperforming value stocks.[296] Volatility and price uncertainty will always exist, even in a healthy capitalistic system, because as noted by Minsky, "[u]ncertainty (or unsureness) is a deep property of decentralized systems in which a myriad of independent agents made decisions whose impacts are aggregated into outcomes that emerge over a range of tomorrows."[297] Yet, our evolved MMC financial system creates uncertainty in a destructive way, unrelated to – even undermining - capitalism's price discovery and information aggregation function.

There is a strong argument to be made that modern MMC is homogenizing the financial market – as more and more investors hold passive investments and increasingly correlated portfolios.[298] Institutional investors, and other money managers, also are converging on correlated risk management models given the nascent market dominance of BlackRock's *Aladdin* software[299] As Andrew Haldane has pointed out homogenized financial systems are unpredictable in a crisis, and as with all complex systems, diversity helps to strengthen sys-

295. See Logica Capital Advisers, *supra* note 287; *see* Pagano, Serrano & Zechner, *supra* note 104 at 3, 8 Thomas Stratmann & John W. Welborn, *Exchange-Traded Funds, Fails-To Deliver, and Market Volatility,* GEORGE MASON UNIV. DEP'T OF ECON., WORKING PAPER NO. 12-59 (2012), at 43, available at http://ssrn.com/abstract=2183251; See Zhi Da & Sophie Shive, *Exchange Traded Funds and Asset Return Correlations*, 24 EUR. FIN. MGMT. 136, 152 (2018); *see* Markus Leippold et al., *How Index Futures and ETFs Affect Stock Return Correlations*, Unpublished manuscript (Apr. 24, 2016) at 28, available at https://ssrn.com/abstract=2620955.

296. See Logica Capital Advisers, *supra* note 287.

297. *See* Minsky, *supra* note 1 at 360.

298. The factors driving "correlated portfolios" and common exposures amongst investors are varied and include correlation in the trading strategies of high frequency and algorithmic traders, *see* A.P. Chaboud, B. Chiquoine, E. Hjalmarsson & C. Vega, *Rise of the Machines: Algorithmic Trading In The Foreign Exchange Market,* 69 J. FINANCE 2045 (2014); correlated holdings given the dominance of passive index structures and common intermediated shareholding asset managers , *see* Clements, *Are ETFs, supra* note 48 at 794-809, *see* Yesha Yadav, *Too-Big-To-Fail Shareholders,* 103 MINN. L. REV. 587, 592-593, 633-636 (2018); Pagano, Serrano & Zechner, *supra* note 104 at 3, 18. Correlation is also occurring from common strategies utilized and followed by "robo-advisors" and other forms of automated wealth management platforms that use ETFs in model portfolios, *see* James Rickards, *Robot Trading Will End in Disaster,* DAILY RECKONING (July 19, 2019), https://dailyreckoning.com/robot-trading-will-end-in-disaster/; correlated strategies exhibited in the market-making functions of liquidity providers that trade in ETFs, *see* Thomas Stratmann & John W. Welborn, *Exchange-Traded Funds, Fails To Deliver, and Market Volatility,* GEORGE MASON UNIVERSITY DEPARTMENT OF ECONOMICS, WORKING PAPER NO. 12-59 (2012), at 6, available at http://ssrn.com/abstract=2183251.

299. *See* Will Dunn, *Meet Aladdin, The Computer "More Powerful Than Traditional Politics"* NEWSTATESMAN AMERICA (Apr. 6, 2018), https://www.newstatesman.com/spotlight/2018/04/meet-aladdin-computer-more-powerful-traditional-politics; Lawrence White, *HSBC signs deal to use BlackRock's 'Aladdin' software worldwide,* REUTERS (Mar. 21, 2019), https://www.reuters.com/article/us-hsbc-blackrock/hsbc-signs-deal-to-use-blackrocks-aladdin-software-worldwide-idUSKCN1R21NO

tem "durability."[300] Homogenization, heightened volatility, and a decrease in the informational value of securities, highlights the emerging "tragedy of the commons" problem in our evolved MMC financial structure with individual benefits and shared costs.[301]

E. *Increasing System Complexity but Not Productivity*

Economist Roger Bootle argues that all profits in a capitalistic system emanate from either a "creative" or a "distributive" activity of a firm.[302] He posits that the operations of all profit seeking enterprises exist on a spectrum between creative and distributive,[303] and that firms (and individuals) often engage in both types of activities, but that the most successful societies are those that "maximize" their capacity for creative enterprise (with profits derived from creative endeavors), while seeking to minimize distributive profits.[304] Much of the intermediation that takes place in financial markets today yields "distributive" profits to intermediating firms.[305] Bootle refers to distributive profit seeking as a "zero-sum game" since it produces a winner at the expense of a loser, and suggests that such behavior is endemic in financial markets.[306] In addition to these tremendous distributive gains, financial intermediaries have arguably overtaken the sovereign in determining the size of the credit supply.[307] As a result, Professors Robert Hockett and Saule Omarova note that private credit generation is "misallocated" away from productive uses and "continuously re-absorbed" through financial firms.[308]

High-frequency, and algorithmic trading, is making markets more prone to model risk, extreme movements and heightened volatility.[309] Today's markets are increasingly "shock-led," characterized by more intense booms, and "more violent" shocks.[310] The factors that contribute to this new reality – such as the increased use of option writing

300. *See* Andrew G. Haldane, *Rethinking the Financial Network,* Speech at Financial Student Association, Amsterdam (April 28, 2009), 3-4, 9-10, available at https://www.bis.org/review/r090505e.pdf.

301. *See* de Aenlle, *supra* note 65.

302. *See* Bootle, *supra* note 131 at 84.

303. *Id.* at 116.

304. *Id.* at 84.

305. *Id.* at 98, 102.

306. *Id.* at 102, 104-107.

307. *See* Hockett & Omarova, *supra* note 234 at 1214.

308. *Id.* at 1213-1214.

309. Doug Kass, *Financial Weapons of Mass Destruction Are Increasing,* REAL MONEY (February 23, 2019), https://realmoney.thestreet.com/investing/stocks/kass-financial-weapons-of-mass-destruction-are-increasing-14875209.

310. *See* Wigglesworth, *supra* note 281.

strategies, value-at-risk market exposure adjustments, and volatility "targeting"[311] – originate entirely from the profit seeking enterprises of market intermediaries, untethered from the actual capital needs of productive enterprises. Extreme price volatility like that exhibited in the *GameStop* saga (potentially manufactured by manipulating market actors) creates many enforcement challenges for financial markets regulators, especially when allegations of market manipulation are generated on anonymous forums like *Reddit*.[312] Such an undertaking exhausts regulatory capital in a challenging cat and mouse chase,[313] yet it is all entirely detached from production. One wonders if this is the inevitable path of regulatory resources – chasing bad actors in an increasingly complex and opaque game significantly detached from economic utility or new productive enterprise.

Modern evolved MMC allows intermediaries to profit by increasing financial system complexity detached from productivity. Minsky argued that in his time "institutional complexity" was being increased by "several layers of intermediation."[314] Now the intermediation layers are even further obscured by information tracing nightmares and tremendous interpretive difficulties in sorting forum chatter from legally defined market manipulation and fraud.[315] Yet as the market complexifies, numerous empirical studies cite no observable correlation (or even worse, a possible inverse relationship) between financial industry growth and economic productivity.[316]

Also, an increasing number of post-2008 crisis financial product innovations, including those linked to the *CBOE Volatility Index*

311. *Id.*

312. *See* Aaron Keller, *SEC Will Struggle To Build Market Manipulation Case After Massive GameStop Stock Rally: Securities Law Prof.,* LAW & CRIME (January 30, 2020), https://lawandcrime.com/high-profile/sec-will-struggle-to-build-market-manipulation-case-after-massive-gamestop-stock-rally-securities-law-prof/.

313. *See* Soloman, *supra* note 218.

314. *See* Minsky, *Financial Instability, supra* note 20 at 4.

315. *See* Keller, *supra* note 311.

316. See Thomas Philippon & Ariell Reshef. *An International Look at the Growth of Modern Finance*, 27(2) JOURNAL OF ECONOMIC PERSPECTIVES 73 (2013); Ratna Sahay et al. *Rethinking Financial Deepening: Stability and Growth in Emerging Markets*, IMF Staff Discussion Note, 6 (May 2015); Stephen G. Cecchetti & Enisse Kharroubi, *Reassessing The Impact of Finance on Growth*, BANK OF INTERNATIONAL SETTLEMENTS WORKING PAPERS NO. 381 (July 17, 2012), https://www.bis.org/publ/work381.htm; Stephen G Cecchetti, & Enisse Kharroubi. *Why Does Financial Sector Growth Crowd Out Real Economic Growth?* BANK OF INTERNATIONAL SETTLEMENTS WORKING PAPERS NO. 490 (February 2015); *See* Owen Woolcock*, Is Finance An Unproductive Industry*, FINANCIAL TIMES (February 6, 2015), https://www.ft.com/content/c8c98627-4992-361b-916f-6a2b4fd4e776; Eckhard Hein, *Finance-Dominated Capitalism and Redistribution of Income: A Kaleckian Perspective*, LEVY ECONOMICS INSTITUTE, WORKING PAPER NO. 746 (January 10, 2013), available at https://ssrn.com/abstract=2198919.

(VIX),[317] have no productive underlying economic value at all.[318] Others use leverage or derivatives to create inverse or multiple returns.[319] Financial innovation facilitates a constant "synthesis" of economic interests and "scaling up" in transaction speed and volume.[320] These instruments do not create jobs, or increase societal economic welfare, but destabilize the system by increasing volatility through directional bets, asymmetrical payoffs and enhanced speculative trading.[321] In early February 2018, major U.S. equity indices dropped more than 5 percent, as the market reeled with tremendous volatility.[322] In a single day the CBOE Volatility Index (VIX) (an algorithmic indicator of market volatility also known as the "fear" gauge) jumped over 116 percent,[323] matching volatility levels from the 1998 Russian Ruble crisis, the GFC and in 2011 when US credit was downgraded by *Standard and Poor's* from AAA to AA+.[324] It was later discovered that traders had been "shorting volatility" (by selling futures contracts on the VIX), a trade that was profitable when the VIX was below VIX futures price; however, when the VIX spiked, traders had to quickly cover their positions at a loss.[325] The spike in the VIX crushed several structured "inverse VIX" exchange-traded products, some of which had to be terminated.[326]

317. *See* Ryan Clements, *If We Can, Does It Mean That We Should? Volatility Linked ETPs and The Recent Crash,* DUKE UNIVERSITY SCHOOL OF LAW, GLOBAL FINANCIAL MARKETS CENTER, FINANCIAL REGULATION BLOG (February 10, 2018), https://sites.law.duke.edu/thefinregblog/2018/02/10/if-we-can-does-it-mean-that-we-should-volatility-linked-etps-and-the-recent-crash/.

318. Costas Lapavitsas, *The Government Isn't To Blame For The Rise of Wall Street*, THE WASHINGTON POST (April 19, 2016), https://www.washingtonpost.com/news/in-theory/wp/2016/04/19/the-government-isnt-to-blame-for-the-rise-of-wall-street/?utm_term=.1ef98b15ff76.

319. See Kate Stalter, *Why That Leveraged ETF Is A Bad Idea*, FORBES (January 23, 2017), https://www.forbes.com/sites/katestalter/2017/01/23/why-that-leveraged-etf-is-a-bad-idea/#22b6619f6ed2.

320. *See* Omarova, *supra* note 70 at 762-766 (Omarova suggests this occurs through a constant process of pooling, layering, acceleration, and compression of economic interests into digitally represented financial products).

321. See Rachel Evans, & Carolina Wilson, *Is This The Markets Latest Problem Child?* BLOOMBERG (February 8, 2018), https://www.bloomberg.com/news/articles/2018-02-08/spotlight-turns-to-etf-problem-children-after-volatility-blow-up.

322. Jeff Cox, *Why The Market Is So Volatile Right Now,* CNBC February 6, 2018), https://www.cnbc.com/2018/02/06/why-the-market-sell-off-just-keeps-going.html.

323. See Nathan Bomey, *Fears of Market Volatility Swell as Stocks Plunge,* USA TODAY (February 6, 2018), https://www.usatoday.com/story/money/2018/02/06/fears-market-volatility-swell-stocks-plunge/310264002/.

324. See Jim Edwards, *VIX: The 'fear index' has only been this high on 3 prior occasions,* BUSINESS INSIDER (February 6, 2018), http://www.businessinsider.com/vix-fear-index-volatility-2018-2.

325. *Id.*

326. See Joanna Ossinger, *VIX-Related ETPs Go Wild In After-Hours Trading Route,* BLOOMBERG MARKETS (February 5, 2018), https://www.bloomberg.com/news/articles/2018-02-

In the wake of the shuttering of several inverse VIX products, with hundreds of millions of dollars wiped out in days, many questioned the productive utility of these products[327] – including the creator of the VIX Devash Shah.[328] The issue here isn't disclosure – the products were compliant with securities disclosure rules.[329] However, embedding opaquely worded risks in a mountain of disclosures and qualifications doesn't magically create economic utility or productive value. Products like inverse VIX funds motivate pure zero-sum speculation – gambling at best.[330] Yet in modern MMC, market intermediaries have misaligned incentives to proliferate complex financial products if a speculative buyer can be found. The fact that gamblers exist is unremarkable. But when gambling undermines economic stability because of the increased interconnectedness and complexity of the financial system,[331] when market gyrations give rise to unpredictable

05/vix-related-etps-go-wild-in-after-hours-trading-in-wake-of-rout; Thomas Franck, *Credit Suisse says it will end trading in the volatility security that's become the focus of this sell off,* CNBC (February 6, 2018), https://www.cnbc.com/2018/02/06/the-obscure-volatility-security-thats-become-the-focus-of-this-sell-off-is-halted-after-an-80-percent-plunge.html; Michael Shields & Trevor Hunnicutt, *Credit Suisse 'volatility' fund liquidated after market selloff,* REUTERS (February 6, 2017), https://www.reuters.com/article/us-credit-suisse-gp-notes/credit-suisse-volatility-fund-liquidated-after-market-selloff-idUSKBN1FQ256.

327. Berkeley Lovelace Jr., *Cramer: A little-known security tied to a calm market became a 'toxic cigarette' for this sell off,* CNBC (February 6, 2018), https://www.cnbc.com/2018/02/06/cramer-xiv-note-proved-to-be-a-toxic-cigarette-for-the-market.html; Elizabeth Gurdus, *Cramer rails against VIX trading products: They are 'practically designed to fail',* CNBC (February 7, 2018), https://www.cnbc.com/2018/02/06/cramer-vix-trading-products-are-practically-designed-to-fail.html;

328. Max Abelson & Joe Weisenthal, *An Inventor of the VIX: 'I Don't Know Why These Products Exist',* BLOOMBERG (February 6, 2018), https://www.bloomberg.com/news/articles/2018-02-06/an-inventor-of-the-vix-i-don-t-know-why-these-products-exist

329. Natasha Turak, *Credit Suisse Defends Controversial Financial Product At The Center Of The Market Turmoil,* CNBC (February 7, 2018), https://www.cnbc.com/2018/02/07/credit-suisse-defends-controversial-xiv-etn-amid-market-turmoil.html.

330. Doug Kass, *Kill The Quants (and Levered ETFs and ETNs) Before They Kill Our Market,* REAL MONEY (February 6, 2018), https://realmoney.thestreet.com/articles/02/06/2018/kill-quants-and-levered-etfs-and-etns-they-kill-our-market.

331. Several academic studies have noted the relationship between financial system complexity and increased systemic risk. *See* Stefano Battiston, Guido Caldarelli, Robert M. May, Tarik Roukny, & Joseph Stiglitz, *The Price Of Complexity In Financial Markets*, 113(36) PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, PNAS 10031, 10031-10036 (September 2016), available at https://doi.org/10.1073/pnas.1521573113; *see* Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk,* 64 STAN. L. REV. 657 (2012); Steven L. Schwarcz, *Regulating Complexity in Financial Markets,* 87 WASH. UNIV. L. REV. 211 (2009); Alex J. Pollock, *Financial Markets and "System Effects": Complexity, Recursiveness, Uncertainty and Mistakes in Finance,* AMERICAN ENTERPRISE INSTITUTE WORKING PAPER (July 24, 2012), http://www.aei.org/publication/financial-markets-and-system-effects-complexity-recursiveness-uncertainty-and-mistakes-in-finance/; Christian Koehler, *The Relationship between the Complexity of Financial Derivatives and Systemic Risk,* SSRN (May 31, 2011), available at https://ssrn.com/abstract=2511541.

events and non-linear consequences, and crises exacerbated by automated and programmatic trading,[332] perhaps we should give pause and assess why the system has evolved to be this way, what misaligned incentives drive this evolved system,[333] and how it might be improved.

F. *Why More Isn't Necessarily Better in Financial Products*

Curbing the misaligned incentives evident in market intermediation implies a simplified financial system – some may consider this unimaginable given the current system's trajectory for increased complexity. Nassim Nicholas Taleb suggested that the "problem of the commercial world is that it only works by addition (*via positiva*), not subtraction (*via negative*)"[334] – and this is particularly true for the financial system. Yet continual additions in the form of increased product supply, and layered intermediation, do not make the system better, safer, or more productive – it represents an asymmetrical value extraction for market intermediaries who can profit "from" the complexity of the system.[335]

Researchers at the University of Arizona have shown that "substantial" investment allocations in U.S. equity ETFs (from both retail and institutional investors) flow to new funds with higher fees and lower liquidity, leading to significant excess aggregate costs for investors.[336] One notable post-2008 crisis trend is the proliferation of "thematic" ETFs which cater to a wide range of "specialist investment interests" with increasing allocations to ESG (environmental, social and governance) themed funds like renewable energy, as well as social justice

332. *See* Steven Pearlstein, *The robots vs. robots trading that has hijacked the stock market,* THE WASHINGTON POST (February 7, 2018), https://www.washingtonpost.com/news/wonk/wp/2018/02/07/the-robots-v-robots-trading-that-has-hijacked-the-stock-market/?utm_term=.9a0b677ad4ee.

333. *See* Matthew J. Belvedere, *Icahn: The Market Will One Day 'Implode" Because Of These Wacky Funds Using So Much Leverage,* CNBC (February 6, 2018), https://www.cnbc.com/2018/02/06/billionaire-investor-carl-icahn-there-are-too-many-derivatives-and-the-current-market-is-a-rumbling-warning.html.

334. Nassim Nicholas Taleb, Antifragile: Things That Gain From Disorder, 400 (1st ed. 2014)

335. Scholars have gone as far as to label the profit seeking activities of market intermediaries as creating "multiple methods for extraction of value by the financial sector that must be paid for by the productive economy" *see* Wallace Turbeville, *A New Perspective On The Costs and Benefits of Financial Regulation: Inefficiency Of Capital Intermediation In A Deregulated System,* 72 Md. L. Rev. 1173, 1203 (2013).

336. See David C. Brown, Scott Cederburg & Mitch Towner, *(Sub)Optimal Asset Allocation to ETFs*, Working Paper (September 17, 2020), available at https://ssrn.com/abstract=3694592 (the authors suggest that the "aggregate costs" from allocations to high cost, low liquidity ETFs are between $1.1 billion and $17.5 billion since 2000).

themes like "gender equality."[337] Yet empirical research has shown that these funds consistently underperform market returns.[338] In a recent study, this author has shown that the proliferation of ETF forms has led to endemic investor confusion due to, among other factors, discretion in index replication, custom and bespoke index creation, tracking errors, variable financial, operational and management practices of ETF issuers including variability in the calculation methods of key performance variables, diverse securities lending practices, a lack of naming conventions, and an ineffective securities disclosure regime given advancements in our understanding of behavioral finance principles.[339]

G. *The Unique Shard Costs of Exchange Traded Funds*

The uber-popular ETF presents unique shared costs in an intermediated financial market, not otherwise present in other managed funds including fragilities derived from instability in the arbitrage function,[340] and the attraction of noise traders attracted to ETF liquidity.[341] There are other unique potential risks, and fragilities, in ETFs that are shared by the entire market. Recent research has revealed that ETFs "amplify market movements during periods of stress and uncertainty" due to "feedback" effects between ETF market and underlying asset market trading activity.[342] The existence of "feedback trading" effects potentially impair conventional trading halt mechanisms (the so-called system "circuit breakers" in the financial system) and may increase "end of day volatility" due to the rebalancing activities of ETF funds.[343]

ETFs also create unique "concentration risks" since they are highly reliant on APs and other market makers arbitraging price differences between the ETF secondary market price and the value of the fund's

337. *See* Emma Boyde, *Thematic ETFs can delivery significant losses, academics find,* Financial Times (January 25, 2021), https://www.ft.com/content/7e16172e-ce51-4c41-a139-3a796790bbbe?shareType=nongift.

338. *See* Itzhak Ben-David, Francesco A. Franzoni, Byungwook Kim, & Rabih Moussawi, *Competition for Attention in the ETF Space,* NBER Working Paper No. w28369 (January 27, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3772608.

339. See Clements, Exchange Traded Confusion, supra note 48.

340. *See* Clements, *Are ETFs, supra* note 48 at 812-814; *supra* Sections III(a) & IV(b).

341. See Pagano, Serrano & Zechner, *supra* note 104 at 2–3, 8 ("[T]here is evidence that ETFs are associated with increased price volatility of the constituent securities: the high liquidity and continuous trading of ETFs enable investors, including noise traders, to take large short-term directional positions on entire asset baskets.").

342. See Ayan Bhattachaya & Maureen O'Hara, *ETFs and Systemic Risks*, CFA INSTITUTE RESEARCH FOUNDATION BRIEF (January 2020) at 13, available at https://www.cfainstitute.org/-/media/documents/article/rf-brief/etfs-and-systemic-risks.ashx

343. *Id.* at 13-14.

underlying assets, and there is increasing consolidation in the market for these vital intermediaries.[344] ETFs also increase the potential for investor herds since the "systemic factor signal" (the non-idiosyncratic component of risk that is present in all portfolios) serves as a "coordinating" device in index products.[345] The fact that ETFs were trader's "tool of choice" in the coronavirus sell-off in March 2020 strengthens the contention that they are herd coordination mechanisms.[346]

H. *Are Asset Managers Becoming Too "Influential" To Fail?*

An unintended byproduct of the passive investment revolution is a tremendous concentration of economic power in the hands of mega-asset managers.[347] The proxy voting influence of the world's largest asset managers, combined with their increasingly large creditor positions through direct loan portfolios, also give these financial firms "powerful levers" over the economy, and significant influence on government stability measures.[348] The larger, more influential, and more interconnected that asset managers grow, the more that global governments will rely on them for expertise in a crisis. The Federal Reserve had to rely on BlackRock who, aided by its behemoth risk management program, *Aladdin*, has a much greater expertise in evaluating, pricing and managing debt than the central bank itself.[349] The Fed's reliance on BlackRock, along with the firm's recently procured contract to advise the European Commission (EC) on sustainability rules has "helped cement" the policymaking role of the world's largest asset manager with global regulators.[350] This influence was intentionally sought out by BlackRock. The *Financial Times* recently reported that between 2014 and 2020 BlackRock met with 31 different EC officials in private meetings and roundtables, and increased their Euro-

344. Matteo Aquilina, Karen Croxson, Gian Giacomo Valentini & Lachlan Vass, *Fixed Income ETFs: Primary Market Participation and Resilience of Liquidity During Periods of Stress,* FINANCIAL CONDUCT AUTHORITY, RESEARCH NOTE (Aug. 2019), at 4, available at https://www.fca.org.uk/publication/research/fixed-income-etfs-primary-market-participation-resilience-liquidity-during-periods-stress.pdf ("There is a high level of concentration among APs. The 5 most active APs are responsible for about 75% of overall reported primary market volumes (across all asset classes). Concentration is particularly pronounced in the fixed income market, with the top 5 APs there accounting for around 91% of overall volumes and the top AP itself accounting for 51%").

345. *See* Bhattachaya & O'Hara, *supra* note 341 at 6.

346. *See* Dawn Lim & Mischa Frankl-Duval, *supra* note 222; *see* Clements *supra* note 112.

347. *See* Bebchuk & Hirst, *supra* note 59.

348. *See* Lim and Zuckerman, *supra* note 146.

349. *See* Massa, *supra* note 148.

350. *See* Siobhan Riding, *EU lobbying by fund groups fuel fears over vested interest,* FINANCIAL TIMES (January 3, 2021), https://www.ft.com/content/298e8544-5b53-44fd-925c-89b64ce0da37.

pean Union lobbying spending over 300 percent between 2012 and 2019.[351] Lobbying directly benefits asset managers through advisory contracts, but more importantly it provides indirect benefits through the implementation of favorable rules (often via small adjustments that add up over time), where the asset manager's technical expertise "is not always neutral."[352]

One of the most consequential, yet lightly discussed developments in market intermediation is the emergence of platform technologies that act as infrastructure services, and create dependencies and interconnections amongst market participants as a financial utility.[353] BlackRock, the world's largest asset manager, also owns *Aladdin,* the largest risk management and end to end portfolio management platform in the world,[354] which drives investment decisions for over $20 trillion of assets (an amount equivalent to "four times the value of all cash in the world, the annual GDP of the U.S., or the total U.S. stock market capitalization.")[355] The widespread use of *Aladdin* by market participants, including some of the largest sovereign wealth funds on the planet, gives rise to unprecedented correlation and investor herding risks, in addition to the tremendous influence, and importance as an infrastructure provider of BlackRock.[356] The influence of Aladdin cannot be overstated as it is a key element in the government's reliance on BlackRock in response to its corporate bond and credit ETF buying program in the coronavirus pandemic.[357]

I. *The Misaligned Incentives in Asset Manager Governance*

Professors Ronald Gilson and Curtis Milhaupt, in a recent study, argue that – similar to Minsky's assertion involving financial markets –corporate governance structures are being constantly reshaped, driven by two dynamic factors, "capital market completeness" and "policy channeling" that continually vary in their relative influence on the governance system.[358] Importantly, for the purposes of this arti-

351. *Id.* (It was also reported that during the same period, the world's second largest asset manager, *Vanguard* correspondingly increased their lobbying spending by 400 percent).

352. *Id.*

353. *See* Zetzsche, Birdthistle, Arner, & Buckley, *supra* note 83.

354. *See* BLACKROCK, *An end-to-end portfolio management platform,* https://www.blackrock.com/aladdin/offerings/aladdin-overview.

355. *Id.* at 14-16.

356. *See* Dunn, *supra* note 298.

357. Dawn Lim, *Federal Reserve Taps BlackRock to Purchase Bonds for the Government,* THE WALL STREET JOURNAL (Mar. 24, 2020), https://www.wsj.com/articles/federal-reserve-taps-blackrock-to-purchase-bonds-for-the-government-11585085843.

358. Ronald J. Gilson & Curtis J. Milhaupt, *Shifting Influences on Corporate Governance: Capital Market Completeness and Policy Channeling*, EUROPEAN CORPORATE GOVERNANCE IN-

cle, Gilson and Milhaupt posit that there is currently a shift away from the discretion of corporate managers towards greater "policy channeling" as a result of the nascent dominance of institutional investors who are steadily increasing their voting influence over portfolio companies as intermediated common owners, and that these influences are leading to less complete markets.[359] Even more concerning (and in alignment with Minsky's MMC), Professor Leo Strine recently suggested that our corporate governance system has evolved in a way that is "fundamentally different" from how it was originally conceived given today's dominance of institutional shareholders.[360] He posits this regulatory dislocation is generating "suboptimal results" including increased power for asset managers over portfolio companies (and by implication the entire market) and less protections for stakeholders (and society).[361]

One potential suboptimal result is in the "lending-voting" tradeoff encountered by asset managers given their large, intermediated share ownership concentration.[362] Asset managers have financial incentives to not vote shares at all, but rather lend them out at a profit.[363] Securities lending has increased substantially in the U.S. since the 2008 global financial crisis,[364] particularly by large ETF issuers like BlackRock.[365] Securities lending was also a principle factor in the downfall of AIG during the 2008 crisis.[366] Recent research has revealed a "sub-

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STITUTE - LAW WORKING PAPER 546/2020, COLUMBIA LAW AND ECONOMICS WORKING PAPER NO. 634, STANFORD LAW AND ECONOMICS OLIN WORKING PAPER NO. 557 (January 11, 2021). available at https://ssrn.com/abstract=3695309 (in establishing their thesis the authors reject the "single factor" model of corporate governance driven by overriding themes like "stakeholderism" or "shareholder value maximization" and rather adopt a binary model focusing on "capital market completeness" and policy channeling.")

359. *Id.*

360. *See* Leo Strine*, Stewardship 2021: The Centrality of Institutional Investor Regulation to Restoring a Fair and Sustainable American Economy,* U OF PENN, INST FOR LAW & ECON RESEARCH PAPER NO. 20-55, COLUMBIA LAW AND ECONOMICS WORKING PAPER NO. 633 (October 23, 2020). available at https://ssrn.com/abstract=3719145.

361. *Id.*

362. Edwin Hu, Joshua Mitts & Haley Sylvester, *The Index-Fund Dilemma: An Empirical Study of the Lending-Voting Tradeoff*, NYU LAW AND ECONOMICS RESEARCH PAPER NO. 20-52 December 22, 2020), available at https://ssrn.com/abstract=3673531.

363. Id.

364. See Tim McLaughlin & Ross Kerber, Securities Lending Boom Sparks Concerns on Returns and Voting, REUTERS (November 7, 2018), https://www.reuters.com/article/us-funds-lending-analysis/securities-lending-boom-sparks-concerns-on-returns-and-voting-idUSKCN1ND0JA; Jessica Tasman-Jones, SJP Securities Lending More Than Doubles at Blackrock, PORTFOLIO ADVISER (August 14, 2019), https://portfolio-adviser.com/sjp-securities-lending-more-than-doubles-at-blackrock/.

365. See Clements, Exchange Traded Confusion, supra note 48 at 23-25.

366. Robert McDonald & Anna Paulson, AIG in Hindsight, 29(2) J. OF ECON. PERSPECTIVES 81, 81-95 (2015).

stantial increase" in the extent that institutional shareholders lend their shares rather than vote them, and that shares with "high index ownership" see a "marked increase" in shares that are lent right before shareholder meetings.[367]

V. THREE FUNDAMENTAL SHIFTS

A. *The Power and Influence of Market Intermediaries*

Market intermediaries, as a collective group, sit as complex interconnectors between productive firms, retail and institutional investors, and universal banks.[368] The three largest asset managers (*BlackRock, Vanguard* and *State Street*) respectively control through intermediated holdings over $19 trillion in assets – roughly equivalent to 10% of the value of the entire world's quoted securities market.[369] As noted, PE firms also continue to expand into nearly all segments of the economic system.[370] The growing influence of market intermediaries is astounding, especially concerning the fact that many stockholders don't vote their shares.[371] Also these firms operate with huge economies of scale,[372] and given their fee structure they have very little incentive to encourage competition amongst their portfolio companies.[373] Unfortunately, the challenge in responding to the concerns generated by these investment leviathans may have been best described recently by the *Financial Times,* "[c]ompared with Big Tech, the issues raised by Big Passive are so far too technical and low profile to spur regulatory action."[374]

The linked interdependencies persuasively highlighted by Professor Wilmarth's "global doom loop,"[375] are made even more unstable by market intermediary's perpetual foray into cash markets as shadow banks.[376] The problem with the creation and distribution of cash-substitutable or other near-cash financial products, outside of regulated banks, is that they create a "dangerous" illusion of being a "safe" or

367. Hu, Mitts & Sylvester, supra note 361.

368. See Clements, Are ETFs, supra note 48 at 786-809.

369. See FINANCIAL TIMES, Opinion Lex, BlackRock / Vanguard: ETF Leviathans (January 18, 2021), https://www.ft.com/content/983542f1-151d-4fae-947a-6509967183aa.

370. See supra Sections II(f), III(b) & IV(c)

371. See FINANCIAL TIMES, supra note 60.

372. *See* Bebchuk & Hirst, *supra* note 59.

373. *See* FINANCIAL TIMES, *supra* note 60.

374. *Id.*

375. *See supra* Section IV(a).

376. *Id.*

"risk-free" asset.[377] As Professors Anna Gelpern and Erik Gerding persuasively contend, supposedly "safe assets" including government bonds, deposits and short term asset backed securities facilitate a "distortion" given the "legal architecture" and "political commitments" that are entrenched in these products.[378] Pooling short-term securities and government loans, and issuing them under the operating mechanics of an ETF, doesn't change Gelpern and Gerding's overarching insight – potential sovereign intervention is both implied, and necessary, for a cash-substitutable product's ongoing stability.[379] Allowing cash-substitutable, or near-cash analogous financial products, comprised of pooled credit instruments, to operate within the shadow banking perimeter creates a "social cost" of liquidity transformation, since government support is necessary to support this market in a crisis without the application on shadow banks of bank-like regulatory parameters, transparency measures, and prudential safeguards.[380] Money market mutual funds (MMMF) have long operated as a "shadow deposit,"[381] and required government intervention to stave a deeper panic sell-off in the GFC when the *Reserve Primary Fund* "broke the buck" and reduced its NAV below $1 per share.[382]

The continuing evolution of financial markets dominated by market intermediaries with increasing size, power, influence, and interconnectivity is neither inevitable nor desirable. As the recent GameStop saga has shown, an economic and financial system based on "asset inflation" and dependent on the capricious gyrations, and mania driven volatility of the stock market is not in the best interests of the wider polity.[383] The idea that fintech stock-trading apps are "democratizing" markets, or leading to a "more inclusive capitalism" is a fal-

377. *See* Anna Gelpern & Erik F. Gerding, *Inside Safe Assets,* 33 YALE J. ON REG. 363, 363. (2016). (Defining "safe assets" as a "catch-all term to describe financial contracts that market participants treat as if they were risk free. These may include government debt, bank deposits, and asset-backed securities, among others.")

378. *Id., see* discussion at 406-411. The authors argue there is "no such thing as a risk-free financial contract" and state intervention is a necessary pre-condition to these assets being supposedly "safe" (*see* at 365, 420).

379. *See* Clements, *Are ETFs, supra* note 48 at 839-840; *see* Section IV(b).

380. *See* Section IV(b); Clements, *supra*, *Are ETFs, supra* note 48 at 839; *See* Morgan Ricks, *Regulating Money Creation After the* Crisis, 1 HARV. BUS. REV. 75, 78, 119-120 (2011).

381. *See* Geithner, *supra* note 267 at 195-96, (stating that "[m]oney market funds were widely viewed as virtually indistinguishable from insured bank deposits, as similarly safe vehicles for storing cash with slightly better interest rates").

382. William A. Birdthistle, *Breaking Bucks in Money Market Funds,* 2010 WIS. L. REV. 1155, 1163, 1190; Paulson, *supra* note 118 at 233-34; McDonald & Paulson *supra* note 365 at 81-95.

383. *See* Rana Foroohar, *The biggest lesson of Gamestop,* FINANCIAL TIMES (February 7, 2021), https://www.ft.com/content/ca94c275-43aa-4d12-a0ff-868f2760c8b5.

lacy,[384] and the real benefactor (via distributive profits which exacerbate income and wealth inequality) of meme stock pumps is Wall Street.[385] Meme stock pumps are nascent illustrations of a recurring financialization problem – the money in the financial system is diverted away from productive uses to speculation.[386] Commodity price inflation from index speculation, the dot.com bubble, mortgage backed securities and collateralized debt obligations are simply prior iterations of financialization capital misallocation where subsequent crashes wipe out billions.[387]

Real economic output, productivity, and the creation of innovations that benefit society should be prioritized over trends that foster greater economic and regulatory influence for market intermediaries. This movement is gaining traction in the Biden administration as the "great rebalancing,"[388] and it aligns with Minsky's own policy recommendations to move towards full employment with the government even performing the role of an "employer of last resort."[389] There are numerous regulatory adjustments that could shift the momentum away from market intermediary growth, and each should be assessed in more detail including, a return to a *Glass-Steagall* separation of banking and investments;[390] the imposition of non-bank systemically important financial institution requirements on mega-asset managers,[391] financial market utility requirements for digital platform mechanisms like BlackRock's *Aladdin*,[392] imposing a financial transactions or "speculation" tax;[393] and adjustments to proxy voting rules for intermediated asset managers.[394]

384. *Id.*

385. *See* Chung, *supra* note 214.

386. *See* Section III(i).

387. *See* Tymoigne & Wray, *supra* note 17 at 252.

388. *See* Rana Foroohar, *Joe Biden and the 'great rebalancing' of the US economy,* FINANCIAL TIMES (January 24, 2021), https://www.ft.com/content/6d19d4f2-78ce-4a3f-96c2-bc722daf2d63?segmentID=B73b0b4c-e767-e669-4996-e25935a5759d.

389. *See* Wray, *supra* note 19 at 27, 34-36

390. *See* Wilmarth, *supra* note 240 at 335-356.

391. *See* Clements, *Art ETFs, supra* note 48 at 827-832.

392. *See* Chris Flood, *BlackRock should split off its Aladdin tech platform, says think-tank,* Financial Times (November 24, 2020), https://www.ft.com/content/524a1fef-7bcd-4c2a-8e91-a2e7124c13e3.

393. The idea of a financial transactions tax has been canvassed as far back as John Maynard Keynes as a means of curbing the "casino" type behaviors of Wall Street participants and focusing their behaviors on activities with "social purpose." *See* Greg Rosalsky, *After GameStop, A Better Way to Take on Wall Street,* PLANET MONEY (February 9, 2021), https://www.npr.org/sections/money/2021/02/09/965417988/after-gamestop-a-better-way-to-take-on-wall-street.

394. For a review of the various regulatory proposals in relation to intermediated common ownership of market intermediaries, *see* Eric A. Posner, *Policy Implications of the Common Ownership Debate,* University of Chicago Coase-Sandor Institute for Law & Economics Re-

B. *The Transparency and Comparability of Investment Products*

Given the pension exposure to PE funds, greater levels of transparency are necessary for investor protection.[395] This becomes particularly relevant as evidence of PE outperformance relative to listed equity becomes increasingly uncertain.[396] Further, recent research has shown that the "link between PE firms' fundraising and performance evaluation" is "susceptible to manipulation" since potential PE fund limited partners have to rely on internally generated valuations when evaluating fund performance.[397] Increased transparency is also needed for hedge funds, and reforms need to be made to allow for easier investor comparisons in the uber popular ETFs. Increased transparency in ETFs, through easier investor comparisons can curb the proliferation of poor-quality products – many of which are overpriced, specialized, and compete for uninformed investors.[398]

It is not certain that the trend towards more financial products is desirable.[399] It's possible that to improve investor transparency and product comparability it may be necessary to ebb the proliferation of new financial products. Ex-ante financial product licensing regimes of various forms, in some cases similar to the regulation of new drugs, have been advanced by diverse scholars including Professors Saule Omarova,[400] Eric Posner and Glenn Weyl,[401] Robert Litan,[402] and

search Paper No. 922 (October 31, 2020), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3722906.

395. *See* Ford, *supra* note 127.

396. *See* Flood, *supra* note 391.

397. *See* Ranko Jelic, Dan Zhou and Wasim Ahmad, *Do Stressed PE Firms Misbehave?* (November 19, 2020). JOURNAL OF CORPORATE FINANCE (forthcoming), available: https://ssrn.com/abstract=3744998.

398. *See* Ben-David, Franzoni, Kim, & Moussawi, *supra,* note 337.

399. James Lardner, *Are we repeating history by letting our financial sector get too big?* THE WASHINGTON POST (April 20, 2016), https://www.washingtonpost.com/news/in-theory/wp/2016/04/20/are-we-repeating-history-by-letting-our-financial-sector-grow-too-large/?utm_term=.cd3c9e534f25.

400. *See* Saule T. Omarova, *License to Deal: Mandatory Approval of Complex Financial Products,* 90 WASH. U. LAW. REV. 2, 76 (2012). (Suggesting a financial product-regulatory framework that would "place the burden of proving social and economic utility of complex financial instruments on the intermediaries that structure and market them.")

401. Eric A. Posner & Glen E. Weyl, *A Proposal for Limiting Speculation on Derivatives: An FDA for Financial Innovation*. UNIVERSITY OF CHICAGO INSTITUTE FOR LAW & ECONOMICS OLIN RESEARCH PAPER NO. 594 (January 29, 2012), at 13, available at https://ssrn.com/abstract=1995077 (advocating for an *ex ante* financial market product licensing regime (like the U.S. Food & Drug Administration) and also indicating that new products should be required to successfully navigate a "social utility" test which assesses whether a new financial product will be used for hedging or speculation. Such a regime would effectively establish a form of the "insurable interest rule.")

Heather Hughes.[403] An ex ante burden could be imposed to show that a new financial product doesn't increase systemic risk; alternatively a positive obligation could be placed on the issuer of a proposed financial product to show cash flow implications from an investment in an underlying productive venture, and include "regulatory follow-up" parameters since financial product innovations evolve in their use propositions.[404]

In a recent study this author has also proposed a number of direct, and immediate, "investor-focused" proposals for ETFs that would significantly increase transparency and aid in comparative efforts.[405] These proposals include ETF issuers using standardized website layouts, strategic ordering and digital enhancements in their disclosure;[406] uniform calculation methods for material ETF variables;[407] naming conventions and standard terms for sustainable investing;[408] and structured reporting to a centrally controlled but publicly accessible data repository.[409]

C. *The Calculus of Financialization*

It's not certain that the continuing growth of the financial industry relative to the real economy – commonly known as economic "financialization"[410] – marked by the rise of market intermediation, is a net positive proposition for society. There are extensive criticisms of "financialization" in the scholarly literature. It has been associated with income inequality,[411] economic "rent seeking,"[412] declining pro-

402. *See* Robert E. Litan, *In Defence of Much, But Not All, Financial Innovation,* BROOKINGS INSTITUTE WHITE PAPER (Wednesday February 17, 2010), https://www.brookings.edu/research/in-defense-of-much-but-not-all-financial-innovation/.

403. *See* Heather Hughes, *Financial Product Complexity, Moral Hazard, and the Private Law,* 20 STAN. J.L. BUS. & FIN. 179 (2015).

404. *See* Tymoigne & Wray, *supra* note 27 at 201.

405. *See* Clements, *Exchange Traded Confusion, supra* note 48.

406. *Id.* at 56-58.

407. *Id.* at 52-56.

408. *Id.* at 59-60.

409. *Id.* at 60-62.

410. The term "financialization" is frequently used in the scholarship to refer to the financial industry's growing size, complexity, interconnectedness, number of participants and products, profit accumulation away from real production, and the constant transformation of real economic variables to tradable financial instruments. *See* Greta R. Krippner, *The Financialization of the American Economy,* 3 SOCIO-ECONOMIC REVIEW 173, 174 (2005); Mike Konczal & Neil Abernathy, *Defining Financialization,* ROOSEVELT INSTITUTE (July 27, 2015), http://rooseveltinstitute.org/defining-financialization/; Hockett & Omarova, *supra* note 234 at 1148-1149.

411. *See* Rana Foroohar, *The Economy's Greatest Illness: The Rise of Unproductive Finance,* EVONOMICS (15 November 2016), http://evonomics.com/financialization-hidden-illness-rana-foorohar/.

ductivity growth,[413] manufacturing outsourcing,[414] unsustainable global debt levels,[415] class and political strife,[416] decreased entrepreneurship,[417] the "collapse" of the middle class,[418] "warped" societal values,[419] increased speculative trading and market volatility,[420] and "leeching growth from other sectors" while capturing promising graduates from other industries to pursue otherwise lucrative careers in finance.[421]

Financial markets evolve towards greater complexity as the number of participants, markets, intermediaries, and financial products continues to grow.[422] Orthodox economic theory posits that demand for new financial products emanates from investor demand, and an efficient distribution of risk.[423] In 2003, while serving as Federal Reserve Chairman, Alan Greenspan suggested financial innovation would "slow" as financial products were efficiently distributed to the most capable bearers.[424] Nearly the opposite has happened in the two de-

412. *See* Thomas Philippon, *Brief: Finance, Productivity, and Distribution,* BROOKINGS INSTITUTE GLOBAL ECONOMY AND DEVELOPMENT (October 2016), https://www.brookings.edu/wp-content/uploads/2018/01/philippon-october-2016.pdf; Jeremy Kidd, *Fintech: Antidote To Rent-Seeking?* 93 CHI. KENT L. REV. 165, 170 (2018)

413. *See* CEDRIC DURAND, FICTITIOUS CAPITAL, HOW FINANCE IS APPROPRIATING OUR FUTURE (2014), Owen Woolcock, *Is Finance An Unproductive Industry,* FINANCIAL TIMES (February 6, 2015), https://www.ft.com/content/c8c98627-4992-361b-916f-6a2b4fd4e776.

414. *See* Gerald F. Davis & Suntae Kim, *Financialization of the Economy,* 41 ANNUAL REVIEW OF SOCIOLOGY 203, 216 (2015).

415. *See* Peter Isackson, *The Daily Devil's Dictionary: Economy Will "Crash",* FAIR OBSERVER (July 5, 2018), https://www.fairobserver.com/region/north_america/jim-rogers-economic-collapse-crash-world-news-this-week/.

416. *See* Aaron Bobrow-Strain, *The Rise and Fall of White Bread,* SALON (March 3, 2012), https://www.salon.com/2012/03/03/the_rise_and_fall_of_white_bread/.

417. *See* Stacey Higginbotham, *Are Crappy Start-ups Wall Street's Fault?* GIGAOM (March 24, 2011), https://gigaom.com/2011/03/24/are-crappy-startups-wall-streets-fault/

418. *See* Les Leopold, *Big Lie: America Doesn't Have #1 Richest Middle-Class In The World. . .We're Ranked 27th,* HUFFPOST (June 28, 2013), https://www.huffingtonpost.com/les-leopold/big-lie-america-doesnt-ha_b_3516185.html.

419. *See* Michael Konczal, *How The Rise of Finance Has Warped Our Values,* THE WASHINGTON POST (April 22, 2016), https://www.washingtonpost.com/news/in-theory/wp/2016/04/22/how-the-rise-of-finance-has-warped-our-values/?utm_term=.31dc3c6c45e0

420. *See* COMPLEXITY LABS, *Financialization,* https://complexitylabs.io/Blog/financialization-explained/.

421. *See* Bruce Bartlett, *'Financialization' as a Cause of Economic Malaise,* THE NEW YORK TIMES (June 11, 2013), https://economix.blogs.nytimes.com/2013/06/11/financialization-as-a-cause-of-economic-malaise/.

422. *See* Greenwood & Scharfstein, *supra* note 165; Michael Collins, *Wall Street and The Financialization Of The Economy*, FORBES (February 4, 2015), https://www.forbes.com/sites/mikecollins/2015/02/04/wall-street-and-the-financialization-of-the-economy/#4f6e026d5783.

423. *See* Judge, *supra* note 330 (discussing demand factors that influence financial innovation including regulatory frameworks).

424. *See* Alan Greenspan, Chairman, Fed. Reserve, Corporate Governance (May 8, 2003) (speech delivered at the Conference on Bank Structure and Competition), available at http://

cades that have since transpired – especially in the post-crisis glut of secondary market tradable instruments like ETFs.[425] A viable counter-reality is that – given the evolved resilience of MMC - financial markets will never actually "complete." Market intermediaries have unceasing incentives to seek profits at all stages of the real economic cycle. This profit-seeking motive stimulates a seemingly endless potential for new financial products and is consistent with emerging heterodox conception of "supply-side" financial product innovation.[426]

Financialization also fosters short term orientation for market intermediaries. The problems of financial market short-termism were lamented as far back as 1940 by U.S. Supreme Court Justice William O. Douglas.[427] This problem hasn't changed – it has gotten worse. The plague of financial market "short-termism" manifests in agency conflicts between short-term owners shares (traders) and company managers.[428] Knowing the stock (and their own compensation via management option) is susceptible to the wrath of the "street" in failing to meet quarterly projected earnings, managers seek short-term profits over longer term payouts that would benefit value investors.[429] Similar agency problems exist between fund managers and their investors since the former are paid fixed fees based on the value of fund assets, so they have an incentive to chase short term payoffs or "faddish stocks" with poor long-term fundamentals.[430]

What should regulators do to mitigate (ideally reverse) the market's trend towards financialization-driven destabilization and volatility without excess paternalism? The range of regulatory responses to the *GameStop* saga, for instance, are diverse, complex, and unsettled (and they invariably requirement more information), but a host of adjustments have been canvassed in the immediate aftermath of the event

www.federalreserve.gov/BOARDDOCS/SPEECHES/2003 ("financial innovation will slow as we approach the world in which financial markets are complete in the sense that all financial risks can be effectively transferred to those most willing to bear them.")

425. See ETFGI, *supra* note 79.

426. *See* Dan Awrey. *Toward a Supply-Side Theory of Financial Innovation,* OXFORD LEGAL STUDIES RESEARCH PAPER NO. 44/2012 (June 27, 2012), available at https://ssrn.com/abstract=2094254; *see* Omarova, *supra* note 70 at 788.

427. See WILLIAM O. DOUGLAS, DEMOCRACY AND FINANCE, 6-12 (1st ed. 1940).

428. *See* Gautam Mukunda, *The Price of Wall Street's Power,* HARVARD BUSINESS REVIEW (June 2014), https://hbr.org/2014/06/the-price-of-wall-streets-power; THE ECONOMIST, *Double Trouble* (November 12, 2020), https://www.economist.com/special-report/2020/11/12/double-trouble.

429. *Id.*

430. THE ECONOMIST, *supra* note 427.

including changes to trading halts,[431] increasing capital requirements on hedge funds, increasing transparency and limiting stock buybacks,[432] consumer protection measures, and imposing disclosure requirements on social media platforms and forums like Reddit where sophisticated investors (like hedge funds) can exploit novice investors with the protection of anonymity.[433] Also, prophylactic measure to reduce instability, if it means restricting the newly armed masses in their trading access, is politically dangerous and it has been criticized by both sides of the political aisle as "putting the interests of hedge funds above small investors."[434]

Nevertheless, untethered access to options (by both retail and professional investors) combined with the turbocharge of information flow through social media, and forums like Reddit, have created modern conditions for bubbles to quickly form.[435] Bubbles have always been a part of market dynamics, yet technology and interconnection are making it much worse.[436] This is why an investigation into misaligned incentives is so important. Another viable measure to reverse the trend of volatility is to reduce the use of options and leverage in trading activity altogether (thereby restricting the ability for traders to "wager much more money on each company that the company is actually worth."[437] Derivatives have consistently exacerbated financial crises.[438] The systemic risk of derivatives increases when collateralization in central clearing becomes impaired because of heighted market volatility.[439]

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431. *See* Keller, *supra* note 311.

432. *See* Soloman, *supra* note 218.

433. *See* Julia Horowitz, *Wall Street's cops weren't ready for GameStop. They're paying attention now,* CNN (January 29, 2021), https://www.cnn.com/2021/01/29/investing/gamestop-regulation/index.html.

434. *See* Soloman, *supra* note 218.

435. See Horowitz, *supra* note 432.

436. *Id.*

437. *See* Steven Pearlstein, *GameStop mania exposes SEC's failure as regulator,* WASHINGTON POST (January 30, 2021), https://www.washingtonpost.com/business/2021/01/30/financial-regulations-wall-street-sec-gamestop/.

438. *See* Lynn A. Stout*, Derivatives and the Legal Origin of the 2008 Credit Crisis,* 1 HARV. L. REV. 2 (2011); Mark Carlson, *A Brief History of the 1987 Stock Market Crash With A Discussion of The Federal Reserve Response,* FINANCE AND ECONOMICS DISCUSSION SERIES, DIVISIONS OF RESEARCH AND STATISTICS AND MONETARY AFFAIRS, FEDERAL RESERVE BOARD, 2007-13, available at https://www.federalreserve.gov/pubs/feds/2007/200713/200713pap.pdf; *See* PRESIDENTIAL TASK FORCE ON MARKET MECHANISMS (1988): REPORT OF THE PRESIDENTIAL TASK FORCE ON MARKET MECHANISMS. NICHOLAS BRADY (CHAIRMAN), U.S. GOVERNMENT PRINTING OFFICE

439. *See* Steve Sosnick. *Systemic Risks Rears Its Head,* TRADERS INSIGHT (January 29, 2021), https://www.tradersinsight.news/traders-insight/securities/macro/systemic-risk-rears-its-head/.

Active steps to realign incentives in favor of productive enterprise, and true capital formation, are warranted. Financial intermediary private gains are tenuously justifiable when they give rise to shared costs. A system idealized to perform rational capital and risk allocation and price discovery has given way to extreme speculation, a disproportionately sized financial industry relative to productive output, exacerbated volatility, accelerated dips and spikes, and leverage.[440] A financialized system makes non-financial firms dependent on the "smooth functioning of the financial sector" for their economic well-being, and households dependent on financial assets for their standard of life and to fund education, health care and other fundamental life essentials.[441] The problem, however, is that market intermediaries often benefit from volatility,[442] and as a result are able to continually transfer distributive profits in their favor.[443] The incentive structure that exists for market intermediaries is misaligned with the needs of households and productive industries.

VI. CONCLUSION

Minsky believed that an economic system charactered by MMC led to increased uncertainty.[444] He argued that capitalistic systems should be subject to state intervention when they generated undesirable results.[445] This article has illustrated how Minsky's MMC paradigm has evolved since 2008 and argues that modern financial markets are beset with misaligned incentives which create private gains and shared costs. The incentive structure that dictates the behaviors of market intermediaries in the modern financial system are detached from the capital needs of productive firms, and do not foster increased employment or incentivize welfare enhancing innovation. Many products and activities in modern financial markets have no underlying economic or productive purpose at all. Rather, they produce distributive gains in favor of financial firms while collaterally increasing their power, profitability, size, and regulatory and economic influence. The externalities of a financial system path dependent on increased complexity, volatility, leverage, fragility, hierarchy, and interconnectedness are borne by all, while the benefits of such a system are enjoyed by very few.

440. *See* Pearlstein, *supra* note 436.
441. Tymoigne & Wray, *supra* note 27 at 78.
442. *See supra,* Section III(i).
443. *See supra,* Sections III(i) & IV(e).
444. *See* Minsky, *supra* note 1 at 363-364.
445. *Id.* at 358.

Minsky was a believer in John Maynard Keynes' vision that capitalism should have a "human face."[446] He suggested that the "primary interest" of a democratic government was "the well-being of its populace," and as such, regulatory steps were necessary to mitigate the uncertainty and instability caused by MMC.[447] This was true decades ago when Minsky was formulating his theory on MMC, and it remains particularly true today. Nations around the world are plagued by increased income and wealth inequality,[448] and the coronavirus pandemic has exacerbated these trends.[449] Regulatory steps are necessary to reverse the trends of financialization-driven inequality.[450] Since capitalism has evolved, and will continue to evolve, society is not bound by a particular form,[451] or reduced to a false dichotomy of socialism or laissez faire. Minsky advanced that we were "free to choose" the type of capitalism that we wanted, and that if certain iterations lead to ills like increased uncertainty, income disparity and social inequality then "the market behavior that creates these conditions should be constrained" at the expense of aggregate income or efficiency.[452] He posited that an antidote to the pathological uncertainty of MMC could include certain "institutional prerequisites," and he advanced ideas such as investment banking divisions of community development banks to increase the viability of "small and even micro businesses."[453] He advocated for institutional measures to reduce

446. *See* Minsky, *supra* note 1 at 358; *see* J.M. KEYNES, THE END OF LAISSEZ FAIRE (1972)

447. *See* Minsky, *supra* note 1 at 364.

448. THOMAS PIKETTY, CAPITAL AND IDEOLOGY (2020); KATHARINA PISTOR, THE CODE OF CAPITAL, 8, 19 (2019); THOMAS PIKETTY, CAPITAL IN THE TWENTY-FIRST CENTURY (2017); Jeanna Smialek, *Even as Americans Grew Richer, Inequality Persisted*, THE NEW YORK TIMES (September 28, 2020), https://www.nytimes.com/2020/09/28/business/economy/coronavirus-pandemic-income-inequality.html;

449. Ian Goldin & Robert Muggah, *COVID-19 is increasing multiple kinds of inequality. Here's what we can do about it"* WORLD ECONOMIC FORUM (October 9, 2020), https://www.weforum.org/agenda/2020/10/covid-19-is-increasing-multiple-kinds-of-inequality-here-s-what-we-can-do-about-it/; Gillian Tett*, Covid: we're in the same storm but not the same boat*, FINANCIAL TIMES (September 30, 2020), https://www.ft.com/content/8691370f-f0b0-44cf-aa24-6cfd5d28676e; Sam Jones & Valentina Romei, *Pandemic makes world's billionaires – and their advisers- richer*, FINANCIAL TIMES (October 23, 2020), https://www.ft.com/content/ab30d301-351b-4387-b212-12fed904324b.

450. Minsky believed that regulatory forbearance in markets exacerbated the potential for depressions since destabilization emerged from within the system, as a consequence of the profit seeking actions of financial intermediaries, *see* Minsky, *Stabilizing, supra* note 19 at 324. ("a sophisticated, complex, and dynamic financial system such as ours endogenously generates serious destabilizing force so that serious depressions are natural consequences of noninterventionist capitalism.")

451. Minsky famously noted that capitalism has "57 varieties" *see* Wray, *supra* note 19 at 41.

452. *See* Minsky, *supra* note 1 at 364.

453. *Id.* at 357 & 367.

poverty, increase access to education and health care, and maintain full employment.[454]

The modern financial system is beset with misaligned incentives that create private gains and shared costs. In support of this contention, this article has profiled numerous post-crisis financialization trends, and highlighted diverse case studies, including recent meme stock bubbles, index construction conflicts, accelerating influences of fintech, firms that benefit directly from volatility or profit from the plumbing of an increasingly complex system, recent price dislocations in credit ETFs, evolved PE business models, misaligned incentives in SPACs, market disruption from volatility-linked ETPs, fragilities in pension administration, ESG opacity and investment fund greenwashing, governance conflicts of mega-asset managers, and post credit trends in debt origination moral hazard and governmental intervention. It advocates for three fundamental policy shifts, which must each be assessed for their resulting regulatory ramifications, to improve financial markets and make them more aligned with greater societal interests: decrease the power and influence of market intermediaries; increase the transparency and comparability of investment products; and re-assess the calculus of financialization.

454. *Id.* at 365 (Minsky also noted that income disparity was even "compatible with a well-functioning society provided that "ambience, health care, and education incomes are available and open to all").