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Regulating stock buybacks: the $6.3 trillion question

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ABSTRACT

Corporate resource allocation decisions shape business investment, income distribution, and productivity growth. Stock buybacks––a term denoting when a corporation repurchases its own shares on the open market––manipulate stock prices and enrich senior corporate executives and hedge fund managers. We argue that the growing distribution of corporate funds to share-sellers via stock buybacks is a source of productivity fragility in the US economy. This article presents new data on the use of stock buybacks by US corporations in 2010–2019. We show the widespread and growing use of stock buybacks across industries and sectors and describe policies that will curb the excessive use of corporate funds on stock buybacks.

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1. Introduction

Corporate resource allocations shape investment, accumulation, income distribution, and productivity growth. Stock buybacks––when corporations repurchase their own shares on the open market–– divert profits from retention and productive reinvestment, manipulate stock prices, and enrich senior corporate executives and hedge fund managers (Lazonick 2014; Lazonick and O''Sullivan 2000; Palladino 2020; Shilon 2021). The growing allocation of corporate funds to share-sellers via stock buybacks raises fragility and diminishes productivity growth in the US economy. This article presents new data on the use of stock buybacks by US corporations in 2010–2019, the decade preceding the COVID-19 pandemic. We show the widespread and growing use of stock buybacks across industries and sectors and describe policies that will curb the excessive use of corporate funds on stock buybacks.

By dint of their size, longevity, managerial function, and capacity for pooling and bearing risk, corporations have high potential to innovate – to produce higher-quality products at lower unit costs over time. To innovate, corporations must take risks with retained earnings derived from profits that require sustained financial commitment. The distributions of corporate cash to stock-market traders via essentially unregulated stock buybacks has negatively impacted innovation. Stock buybacks have become a predominant use of corporate funds: over the past decade stock buybacks plus cash dividends averaged 100% of nonfinancial corporations' corporate profits,[1] supplanting the

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deployment of profits as a dynamic resource for future spending. Analysis of SEC public filings shows that over 2010–2019, total spending by all publicly traded companies on stock buybacks totaled $6.3 trillion.[2] Stock buybacks are widespread throughout all sectors of the economy.

Stock buybacks divert enterprises from innovation. When executives prioritize using corporate funds for stock buybacks, they reduce funds available for investment that yields future productivity gains (Bhargava 2013; Davis and McCormack 2021; Gutiérrez and Philippon 2016). When buybacks are financed with substantial corporate debt, firms become financially fragile (Joan, Michaely, and Schmalz 2021). Stock buybacks manipulate the market price of corporate stock and incentivize corporate insiders to personally benefit from selling their own shareholdings after stock buybacks have boosted share prices (Bonaimé and Ryngaert 2013; Bonaimé et al. 2020; Cziraki, Lyandres, and Michaely 2021; Fried 2005; Palladino 2020; Shilon 2021).

In this article we outline the theory of innovative enterprises and describe the harms that stock buybacks (as distinct from corporate dividends)[3] pose to innovation, followed by evidence of the growing importance of stock buybacks in corporate resource allocation in the decade of 2010–2019. In Section 3 we describe the history of U.S. regulatory policies meant to limit the potential for market manipulation from excessive buybacks, as well as the effects of the permissive Securities and Exchange Commission Rule 10b-18 regulation that went into effect in 1982. We then outline several options for regulatory policy moving forward. Regulation that restricts buybacks may favorably shock management, putting the onus on executives to engage in product innovation rather than in financial manipulation. Section 4 concludes.

2. Innovative enterprises and the potential impacts of restricting stock buybacks

In this section we conceptualize the harms of stock buybacks by contrasting the theory of the innovative enterprise with the dominant corporate governance framework of shareholder primacy. We then describe the effects of stock buybacks on stock prices and the incentives for corporate insiders to misuse stock buybacks for personal gain. We review the benefits that would result from limiting stock buybacks: reduced incentives to direct corporate profits to shareholder payments; reduced potential for market manipulation; and reduced ability of corporate insiders to personally benefit from their ability to direct corporate funds to be used for stock buybacks.

2.1. Innovation and sustainable prosperity: the theory of the innovative enterprise

Shareholder primacy as a theory of corporate governance is embedded in the neoclassical model of the firm, which lacks a theory of how corporations innovate over time (Chandler 1992; Lazonick and Shin 2020; Lazonick 2020; Penrose 1959). The 'theory of the innovative enterprise' provides a framework for analyzing what allows firms to produce higher-quality products at lower unit costs over time – to innovate – resulting in increased productivity that, in a given accounting period, appear as profits (Lazonick 2019a; O'Sullivan 2000). These profits can be shared among contributors to corporate

value creation, including the firm's employees, and invested in new rounds of innovation. The theory posits that because innovation is uncertain, collective, and cumulative, it requires managers to be strategic, employees to be integrated into organizational learning processes, and management to have access to financial resources that can sustain the innovation process over an uncertain timeline. The structure of corporate governance in large US companies today and the focus on value extraction at the expense of value creation are harmful to innovation. Stock buybacks play a leading role in diverting executives from a strategic focus on innovation, undermining organizational learning processes, and reducing financial resources available for the risky but crucial innovation process that generates higher-quality, lower-cost products.

How do stock buybacks impact innovation at the company level? An innovation strategy requires a firm to 'retain and reinvest' (Lazonick 2015a). Retained profits can be used to expand the capital stock, to embed technological innovations, and to enhance employees' productive capabilities. In contrast, a financialized firm-one that is focused on its stock market price – tends instead to downsize and distribute. The financialized firm lays off workers and depresses wages, outsources production, and sells off assets while using its cash flow to increase distributions to shareholders. Its employees are deprived of the opportunity to engage in collective and cumulative learning, and the company is deprived of the innovative products that organizational learning can generate. If a firm has secured a dominant position in a product market, it may avoid downsizing while still disproportionately distributing profits to shareholders, but the dominate-and-distribute resource-allocation regime can rapidly decay into downsize-and-distribute should the dominant market position disappear.

Senior corporate executives embraced shareholder-value ideology fully starting in the 1980s. Outside 'activist' shareholders, such as hedge funds, campaigned aggressively for value extraction with stakes no larger than one percent in a company's outstanding shares permitting them to exert pressure on corporate executives to increase distributions to shareholders. Institutional shareholders, once envisioned as responsible longer-term managers of capital, have instead enabled value extraction, operating under the proxy-voting rules that empower fund managers to vote the shares in the portfolio of assets that they manage (Coffee and Palia 2016; Lazonick and Shin 2020). All three actors, corporate insiders, activist shareholders, and fund managers have abetted the rise of stock buybacks, with single-minded dedication to raising share prices – at cost of productive innovation.

2.2. Market manipulation

When announcing stock buyback programs, corporate executives explicitly state the goal of increasing the price of outstanding corporate equity. While the legal definition of market manipulation is complex and lacks clear bright lines that would determine a threshold for manipulation, the volume at which stock buybacks are currently conducted should be considered stock-price market manipulation, a violation of Section 9(a)(2) of the Exchange Act (Allen and Gale 1992; Fox, Glosten, and Rauterberg 2018). Besides enabling a corporation to inflate its market capitalization, the price-shock from buybacks enables companies to hit promised quarterly earnings per share (EPS) targets. Companies

that are at risk of missing quarterly EPS forecasts show a sharp increase in the probability of share repurchases (Almeida, Fos, and Kronlund 2016).

In the 1970s, the Securities and Exchange Commission discussed regulatory options that would have permitted companies to conduct some limited buybacks without fear of liability for market manipulation (see Section 3 for further discussion of the regulatory proposals put forward in the 1970s). The draft regulation laid out bright-line conditions that were explicitly meant to keep the volume and timing of stock buybacks from manipulating market prices. Financial markets in most other advanced economies have regulations in place to limit the manipulative effects of stock buybacks (Jaemin, Schremper, and Varaiya 2004). However, stock buyback regulation in the United States enables companies to manipulate the market price of their stock without fear of prosecution.

2.3. Incentives for personal gain by corporate insiders and professional traders

Stock buybacks enable corporate insiders and professional traders to realize gains by timing the sale of their personal shares during the price elevation following buybacks (Bonaimé and Ryngaert 2013; Bonaimé et al. 2020; Chan et al. 2012; Kim and Varaiya 2008; Lazonick 2019b; Palladino 2020; Ramsay 2018; Shilon 2021[4]). Corporate executive compensation is largely tied to stock prices, as executives are paid in stock and bonuses are tied to stock-price-related metrics (Shilon 2021). Figure 1 details the average total pay and percentage shares of pay components for the 500 highest-paid US executives. Even in the depressed stock market of 2009 stock-based pay was 60% of the $15.9 million average remuneration, and in the booming stock market of 2015, stock-based pay was 83% of

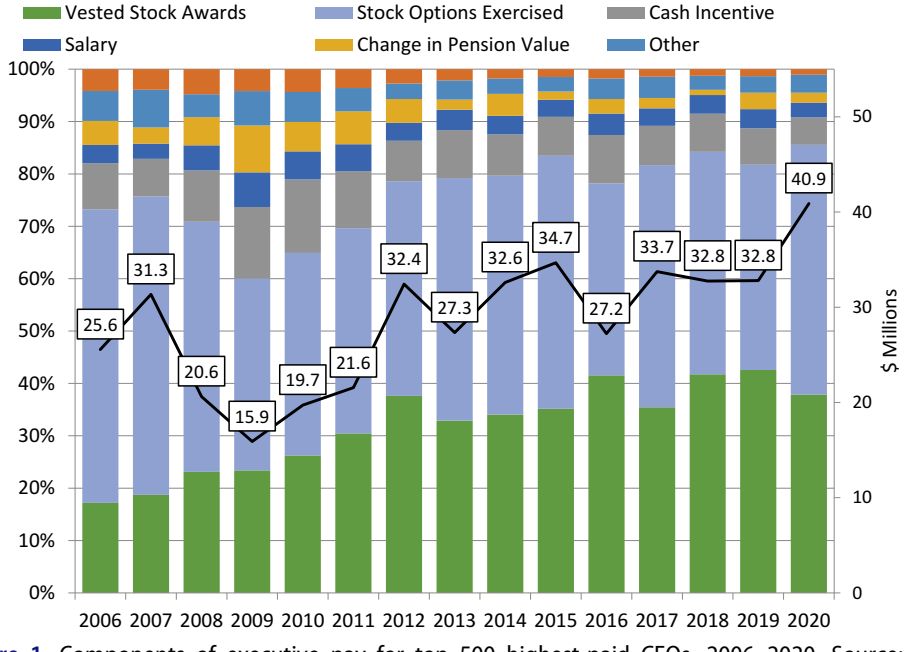

Figure 1. Components of executive pay for top 500 highest-paid CEOs, 2006–2020. Source: S&P Execucomp Database, accessed through Wharton Research Data Services

Table 1. Cash dividends and Stock buybacks as percentages of net income, 1981–2019.

	1981–1984	1985–1989	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–2019
DV/NI%	48.3	50.3	53.9	37.0	40.5	40.7	35.7	50.5
BB/NI%	8.6	29.5	20.5	40.7	38.0	54.8	44.3	61.7
(DV+BB)/NI%	56.9	79.8	74.4	77.7	78.4	95.5	80.0	112.2

Source: Cash dividends (DV) and stock buybacks (BB) as percentages of net income (NI), 1981–2019, for the 216 business corporations in the S&P 500 Index as of January 2020 that were publicly listed for all 39 years. S&P Compustat database and company 10-K filings, compiled by Mustafa Erdem Sakinç and Emre Gömeç of the Academic-Industry Research Network.

$34.6 million average remuneration. The shift to stock-based pay rewards senior executives for 'making decisions that foment speculation and manipulate stock prices' (Lazonick 2019a).

While insiders face strict requirements to report their personal transactions of corporate stock, the reporting requirements for stock buybacks do not identify the day of the transaction. Hence, insider share sales and stock buybacks cannot be matched closely enough to establish insider trading. Even with limited disclosure, research has established that corporate insiders who are using corporate funds to conduct stock buybacks are personally benefiting. Palladino (2020) finds that net insider personal sales of over $100,000 are nearly twice as common in quarters when meaningful stock buyback transactions take place than they are in other quarters, and a 10% change in insider share selling is associated with a 0.5% change in stock buyback transactions, and a $4.2 million increase in stock buybacks is associated with a $900,000 increase in quarterly insider share sales. Former SEC Commissioner Robert Jackson Jr. found a similar link between stock buyback announcements––which also tend to increase share prices, even before actual repurchases take place––and corporate insider share selling (Jackson 2018).

2.4. Evidence for the growing importance of stock buybacks: 2010–2019

Company spending on open-market stock repurchases is available from required SEC 10-K and 10-Q public filings by all publicly traded companies.[5] In 1981–1983, dividends were 49.7% of the combined net income of all reporting companies, buybacks were only 4.4%, and the remainder was largely retained for investment. The SEC adopted Rule 10b-18 in 1982, providing companies with a 'safe harbor' against charges of manipulation when they conduct large-scale open-market repurchases. Figure 2 shows the rise of buybacks and dividends for the 216 companies in the S&P 500 Index in January 2020 that had been publicly traded for the period from 1981 to 2019. Stock buybacks have risen sharply since the mid-1980s, surpassing dividends as a form of distribution to shareholders for the first time in 1997. In 2017–2019, dividends were 49.6% of net income, but buybacks now absorbed 62.2%. Buybacks are more volatile than dividends, and they tend to be executed when stock prices are already high and rising, as companies compete to show strong stock-price performance.

Table 1 displays the data on buybacks and dividends in Figure 2 as percentages of net income for the 216 companies for 1981–1984, and then for five-year periods from 1985–1989 through 2015–2019. The proportions for 2005–2009 and 2015–2019 capture the surges in buybacks during years (except for 2008 and 2009) in which profits were high and the stock market was booming. From 2003 to 2007, the value of buybacks done by

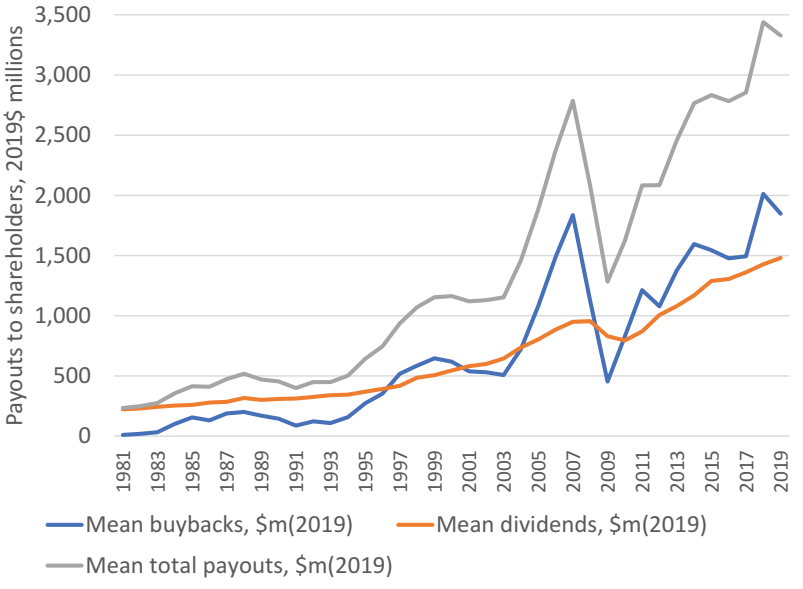

Figure 2. Stock buybacks and cash dividends, 1981–2019. Source: S&P Compustat database and company 10-K filings, compiled by Mustafa Erdem Sakinç and Emre Gömeç of the Academic-Industry Research Network. Data presented in 2019$billions, for the 216 business corporations in the S&P 500 Index in January 2020, publicly listed for the entire period

companies in the S&P 500 Index quadrupled. In general, these publicly listed companies have done buybacks when stock prices have been high and rising, as they have competed with one another to give manipulative boosts to their stock prices. These data also show that even as buybacks have absorbed a large proportion of net income, these companies have paid ample dividends. The half-decade 2015–2019 is particularly noteworthy for the extent of distributions to shareholders in the years preceding the onset of the Covid-19 pandemic.

These distributions to shareholders come at the expense of rewards to employees in the form of higher pay, superior benefits, and more secure jobs as well as corporate investment in the new products and processes that can sustain a firm as an innovative enterprise in the future. These distributions are a prime cause of the concentration of income among the richest households and the erosion of middle-class employment opportunities (Lazonick and Shin 2020).

In the 2010s all US publicly listed companies spent $6.3 trillion in aggregate on open-market share repurchases. To put this figure in context, total US GDP for the decade was approximately $172 trillion; spending on open-market share repurchases alone was equivalent to 4% of US spending on goods and services. Aggregate buyback spending grew steadily through the decade after the Great Recession, peaking in the fourth quarter of 2018 at $270.6 billion and then accelerating again. In the first quarter of 2020 alone, immediately preceding the pandemic, the average corporation engaged in buybacks spent nearly $90 million. Figure 3 shows the growth of aggregate spending on stock buybacks by quarter for the sample period.

Buybacks are concentrated among large companies. In the 2010s, the 500 companies included in the S&P 500 Index executed a combined $5.2 trillion in stock buybacks,

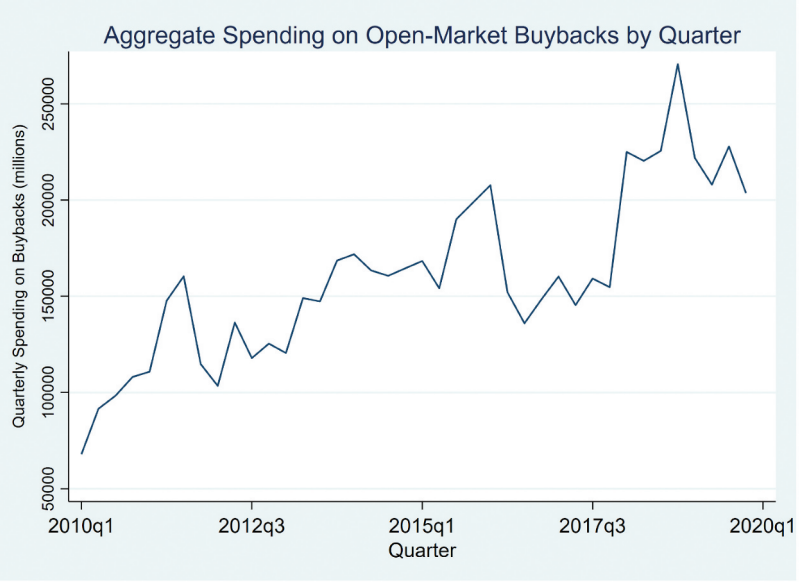

Figure 3. Aggregate spending on open-market share repurchases by quarter. Source: S&P Compustat

representing 53% of their net income, while also distributing $3.8 trillion in dividends, another 39% of net income. Among these companies, the 25 largest repurchasers among US non-financial companies spent $1.8 trillion on buybacks, equal to 34% of the total for the S&P 500 and 29% of all buybacks done by all publicly listed companies in the United States.

Of the 466 companies that were consistently in the S&P 500 from 2010–2019, the 50 largest repurchasers conducted 51% of all buybacks. Figure 4 shows average spending on buybacks by firm revenue quartile for the decade, normalized by firm revenue. Market dominance, stemming from both innovation and market power, can lead to enormous profits, supporting elevated shareholder payments (Gutiérrez and Philippon 2018). In contrast, smaller and less profitable firms do not attract the same pressures, nor do they have the same funds available to engage in mass buyback activity (though there are exceptions).

Companies often do buybacks to boost their stock prices. The decisions about the timing and magnitude of buybacks for each company are made by corporate insiders in conjunction with other influential shareholders. Stock buybacks as a share of corporate net income shows how buybacks drain retained earnings, which could otherwise compensate employees for contributions to corporate profits and provide capital for investment in the next generation of innovative products (Lazonick 2014; Lazonick and Shin 2020). Corporate net income spent stock buybacks displaces the use of retained profits for future innovation. Figure 5 shows the ratio of buyback spending to net income (profit/loss) for all firms. Spending by corporations on stock buybacks as a percentage of net income remained high for the entire decade, with some fluctuation mainly due to dips in profit.

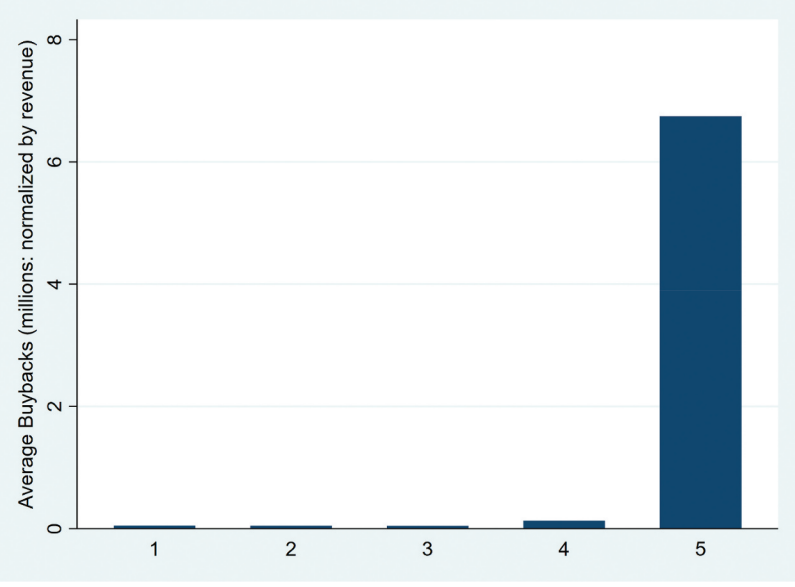

Figure 4. Average buybacks by firm revenue quartile. Source: S&P Compustat. Data is normalized by firm revenue.

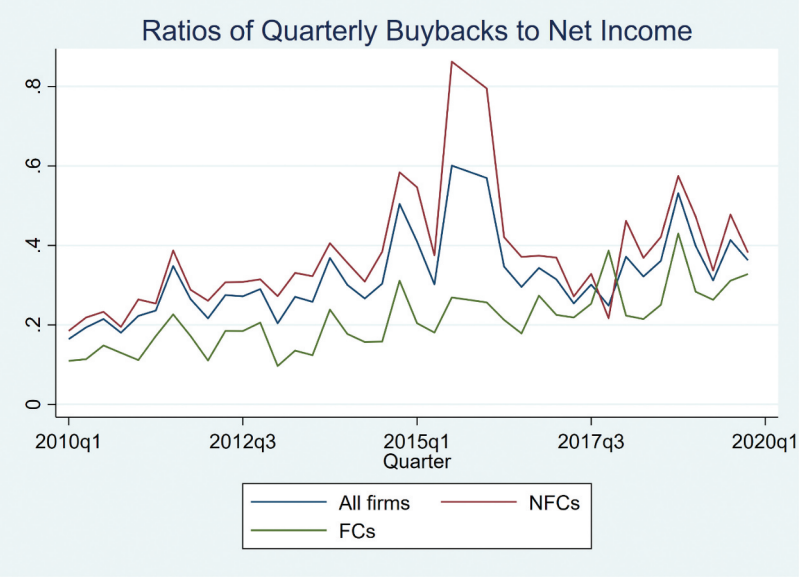

Figure 5. Ratios of quarterly stock buybacks to net income by sector, 2010–2019.

2.4.1. Industry and sectoral buyback activity

A sectoral analysis of buybacks can give insight into how retained earnings for innovation and the conditions of financial commitment depend on the technological, market, and competitive characteristics of an industry. Table 2 presents data on aggregate spending

Table 2. Stock Buybacks Spending at the Sectoral Level, 2010–2019.

NAICS Code	Sector	Aggregate Buybacks (in billions)	Aggregate Revenue (in billions)	% of Total Buybacks	% of Total Sector Revenue
11	Agriculture, Forestry, Fishing and Hunting	$12.21	$294.83	0.20%	0.11%
21	Mining, Quarrying, and Oil and Gas Extraction	$147.99	$9,025.57	2.38%	3.40%
22	Utilities	$26.42	$14,400.00	0.43%	5.43%
23	Construction	$25.07	$1,702.74	0.40%	0.64%
31-33	Manufacturing	$2,489.52	$109,200.00	40.11%	41.16%
42	Wholesale Trade	$80.72	$12,000.00	1.30%	4.52%
44-45	Retail Trade	$473.55	$28,100.00	7.63%	10.59%
48-49	Transportation and Warehousing	$191.35	$11,210.59	3.08%	4.23%
51	Information	$986.70	$26,100.00	15.90%	9.84%
52	Finance and Insurance	$1,229.23	$31,600.00	19.81%	11.91%
53	Real Estate and Rental and Leasing	$66.95	$2,771.82	1.08%	1.04%
54	Professional, Scientific, and Technical Services	$114.91	$4,184.61	1.85%	1.58%
56	Administrative and Support and Waste Management and Remediation Services	$50.60	$1,670.86	0.82%	0.63%
61	Educational Services	$9.62	$229.74	0.16%	0.09%
62	Health Care and Social Assistance	$74.47	$3,843.77	1.20%	1.45%
71	Arts, Entertainment, and Recreation	$7.30	$373.33	0.12%	0.14%
72	Accommodation and Food Services	$154.35	$2,516.89	2.49%	0.95%
81	Other Services (except Public Administration)	$8.27	$189.48	0.13%	0.07%
99		$57.40	$5,876.98	0.92%	2.22%
Total		$6,206.62	$265,291.18	100%	100%

Source: Authors' Calculations of Form 10-K data, provided by S&P Compustat.

on buybacks by industry, along with aggregate revenue, organized by two-digit North American Industry Classification System (NAICS) codes. Spending on stock buybacks varies by sector and by company; in many sectors, buybacks represent 1–2% of revenue, but some sectors stand out, including Information (9.8% of revenue); Finance, Insurance and Real Estate (11.9% of revenue); and Retail (10.6% of revenue). Table 2 presents additional data on the percentage of total buybacks and total revenue for each sector, showing that in some cases, such as Manufacturing, the sector comprises roughly the same percentage of buybacks and revenue for all companies, whereas for some sectors, like FIRE, their share of buybacks far outpaces their share of revenue.

Even sectors that are not commonly thought of as financialized and with substantial receipt of public funds – such as the health, social services, and arts and recreation – are also spending significant funds on stock buybacks. These sectors may follow a distinct path from manufacturing's transition from retain-and-reinvest to downsize-and-distribute. Given the amount of public funds flowing into these sectors (for example, Medicaid and Medicare spending on hospitals and nursing homes, and public funding for education) and recurring concerns about underfunding (especially in the pandemic era), stock buyback activity shows that service sectors are not immune to pressure for increased shareholder payments.

A closer investigation of buybacks in human services, that is, the health care and education sectors, may be illustrative. Buybacks in the Ambulatory Health Care Services sector (NAICS 621) exceeded $9 billion in 2017 and was almost $60 billion for the decade. Buybacks in Nursing Care and Residential Care Facilities, a sector largely funded by Medicare and Medicaid, peaked at nearly $70.8 million for 2011. Buybacks by Hospitals, often structured as non-profits, peaked at $3 billion for 2016. Even industries thought of as largely public, such as the NAICS three-digit sectoral category 611 of Educational Service Firms, has consistently engaged in stock buybacks. The sector's spending peaked in late 2014, when companies spent nearly $80 million collectively on stock buybacks. The highest corporate spenders for each of these sub-sectors is presented in Table A1 in the Appendix.

The focus on maximizing shareholder value had specific harmful effects on product markets that became critical in the Covid-19 pandemic: ventilator and personal protective equipment (PPE) production. Lazonick and Hopkins (2020) document in detail the history of the development, production, and delivery of ventilators to the Strategic National Stockpile, showing that 'the weakness of the [government-business collaborations engaged in production] appeared when these innovative manufacturers fell under the control of business corporations committed to the ideology of "maximizing shareholder value",' (Lazonick and Hopkins 2020, 1). In each of the two government contracts meant to produce ventilators for the national stockpile, the innovative ventilator companies (Newport Medical and Respironics) that retained profits and reinvested in productive capabilities were acquired by larger financialized companies (Covidien and Philips). This focus undermined the development and delivery of ventilators while prioritizing value extraction, in particular through the use of stock buybacks.[6]

2.4.2. The largest corporate repurchasers

Table 3 ranks U.S. industrial corporations by the value of stock buybacks executed in the decade 2010–2019. It is noteworthy that SEC Rule 10b-18 states that a company will not

Table 3. Twenty largest stock repurchasers, 2010–2019, among U.S. industrial corporations, their subsequent repurchases to the last 10-Q or 10-K filing on or before 31 December 2021, and their SEC Rule 10b-18 safe-harbor average daily trading volume (ADTV) limits for repurchases on 19 October 2019 and 23 June 2021.

	2010–2019				ADTV Amount	
COMPANY	$BB RANK	BB, $b.	BB/NI%	(BB+DV)/NI%	21 October 2019, $m.	23 June 2021, $m.
APPLE	1	305.0	73	94	1,597	2,526
ORACLE	2	113.7	121	145	183	261
MICROSOFT	3	101.1	48	92	754	1,522
EXXON MOBIL	4	92.4	35	80	166	410
IBM	5	88.2	71	107	125	144
CISCO SYSTEMS	6	81.5	100	144	226	254
PFIZER	7	76.7	60	116	146	235
WALMART	8	70.2	50	91	141	259
INTEL	9	66.8	51	87	219	318
HOME DEPOT	10	64.4	93	137	188	299
JOHNSON & JOHNSON	11	62.1	49	110	267	280
PROCTER & GAMBLE	12	54.9	52	117	186	319
AMGEN	13	51.2	92	129	97	164
GENERAL ELECTRIC	14	50.3	135	314	94	197
QUALCOMM	15	49.4	119	178	116	241
DISNEY	16	47.8	61	85	231	341
MERCK	17	45.8	81	172	144	265
MCDONALD'S	18	45.8	87	145	159	149
BOEING	19	43.4	87	137	292	708
GILEAD SCIENCES	20	39.6	56	75	93	122

BB=stock buybacks; DV=cash dividends; NI=net income; ADTV=average daily trading volume limit to secure the safe harbor against stock-price manipulation charges under SEC Rule 10b-18.
Sources: Data have been collected by the authors from company 10-K and 10-Q filings with the SEC; Yahoo Finance daily historical stock prices.

be charged with manipulation if the trading volume of its buybacks on any single day are no more than 25% of the previous four weeks' average daily trading volume (ADTV), and there is no presumption of manipulation even if the corporation's repurchases exceed the stated limit. Under Rule 10b-18, many large publicly listed companies can do hundreds of millions of dollars of open-market repurchases per day.

Of the twenty largest stock repurchasing companies, thirteen distributed more than 100% of net income to shareholders over the decade while the remaining seven distributed 75% or more of net income. Coming into the pandemic, twelve companies in the list, Apple, Oracle, Microsoft, Cisco, Walmart, Intel, Home Depot, Johnson & Johnson, Amgen, Qualcomm, Disney, and Gilead, enjoyed significant market dominance and could use profits from their still-dominant market positions to support their stock price without a substantial squeeze on corporate investment or employment. The remaining eight companies, Exxon Mobil, IBM, Pfizer, Procter & Gamble, General Electric, Merck, McDonald's, and Boeing, were in 'downsize-and-distribute' mode, distributing corporate cash to shareholders as they simultaneously downsized their labor forces (Lazonick and Hopkins 2021).

Lazonick (2022, 25) has analyzed the financial behavior of the 20 company in Table 3 during the pandemic through September 2021. Despite macroeconomic upheaval, Apple, Oracle, Microsoft, Walmart, Intel, Home Depot, Procter & Gamble, Qualcomm, and Amgen spent 42% or more of net income on buybacks. These nine companies benefited from very strong demand for their products and high profits during the pandemic. Pfizer benefitted during the pandemic from its involvement with Germany-based BioNTech by manufacturing and delivering the COVID-119 vaccines. But through September 2021, the financial condition of ExxonMobil, IBM, General Electric, Disney, Merck, McDonald's, and Boeing – deteriorated.

The relation between innovation and financialization must be analyzed at both the aggregate and company level: analyses done at the aggregate or industrial sector level can be misleading because of variation among companies within a sector. In semiconductors, for example, while Intel has been among the largest repurchasers in the United States since the late 1990s, its rival AMD has never paid a dividend and prior to 2020 had only done $77 million in buybacks in 2001 after its board authorized a $300 million repurchase program. In 2020, AMD did $78 billion in buybacks to cover employee withholding taxes on vesting of employee equity grants. On 19 May 2021, however, with its profits during the pandemic at about seven times its profits in 2018 and 2019 (which were good years for the company), AMD announced a $4 billion repurchase program (AMS 2021). In fact, AMD did $256 million billion in buybacks in the second quarter of 2021 and another $748 million in the third quarter.

3. Policy reforms to limit stock buybacks and promote innovation

The current regulatory regime for buybacks dates to the 1982 issuance of Rule 10b-18 by the Securities and Exchange Commission (SEC), and there has been no significant update to the rules that govern stock buyback activity in the forty years since.[7] In this section we describe the history of stock buybacks regulation and propose several options for policies to reduce the negative impacts of stock buybacks on corporate innovation and financial markets.

Rule 10b-18 provides a company with a 'safe harbor', or presumption of innocence, against charges of stock-price manipulation if its buybacks conform to certain volume, broker, and timing conditions. The safe harbor provision applies if the buybacks that a company executes on any single trading day do not exceed 25% of the stock's average daily trading volume (ADTV) over the previous four weeks. For large companies with high trading volume and high stock prices, the daily limit may permit hundreds of millions of dollars of buybacks, and the company may conduct additional daily buybacks up to this limit trading day after trading day. SEC reporting rules have never required that companies disclose the specific trading days on which buybacks are carried out, and therefore, as the SEC itself admits, it is impossible to monitor whether corporate buyback activity remains within the safe-harbor limit (Dayen 2015). Even if companies violate the 'safe harbor' limits, there is no presumption of wrongdoing.

3.1. Overview of the history of policies regarding stock buybacks

Prior to the adoption of Rule 10b-18 in 1982, companies executing open-market share repurchases could be held liable for market manipulation under Section 9(a)(2) and 10(b) of the Securities Exchange Act of 1934 .[8] The Williams Act of 1968, which enabled the SEC to adopt regulations governing share repurchases, stated that it is unlawful for issuers to repurchase their own securities if the purchase 'is in contravention of such rules and regulations as the Commission . . . may adopt (A) to define acts and practices which are fraudulent, deceptive, or manipulative, and (B) to prescribe means reasonably designed to prevent such acts and practices'.[9] Not all companies engaging in repurchases were doing so for purposes of increasing stock prices by reducing outstanding common stock, however; some bought back stock to fulfill their obligations under stock-based employee compensation plans (Lazonick and Jacobson 2022).

The SEC debated the rules and regulations to adopt regarding stock buybacks without the presumption of liability for manipulation throughout the 1970s, at the outset proposing far more restrictions than it ultimately adopted under President Reagan in 1982. Proposed Rule 13e-2 would have made open-market stock buybacks subject to bright-line volume limits and would have required disclosure by corporate insiders who might be considering buying or selling securities for their personal account at the same time that the company was engaging in share repurchases on the open market.[10] In 1980, the commissioners clearly stated that their intent behind the proposed rule was to 'prevent the issuer from leading or dominating the market through its repurchase program. In fashioning those limitations, the Commission has balanced the need to curb the opportunity to engage in manipulative conduct against the need to avoid excessively burdensome restrictions'.[11]

By the close of 1982, in what was termed a 'regulatory about-face' by SEC staff, the Reagan Administration SEC had replaced proposed Rule 13e-2 with the new Rule 10b-18, which provided corporate repurchasers a safe harbor from liability for manipulation under certain conditions, while not automatically regarding buybacks executed outside the safe harbor as prohibited (Feller and Chamberlin 1984; Hudson 1982). This shift was part of the larger transition of the SEC from a financial-regulatory agency that sought to limit stock-price manipulation without being overly intrusive to a financial-promotion agency that authorized stock issuers to engage in large-scale stock-price manipulation

with impunity (Lazonick and Shin 2020; Seligman 1995). Based on a systematic misunderstanding of the role of secondary-market trading in capital formation, the SEC proceeded to conduct its rulemaking based on the view that trading on the secondary markets was the key to corporate investment and innovation in the nonfinancial economy, even though secondary-market trading does not send new funds to corporate coffers. Some secondary-market trading, such as buyback spending undertaken to push up share prices, can drain retained earnings and reduce funds available to firms for productive investment.

Under Rule 10b-18, disclosure that might discourage companies from straying beyond the bounds of the safe harbor is not required, nor does exceeding the conditions of the safe harbor trigger a presumption that manipulation is taking place. Specifically, companies are limited to limiting their volume of stock buybacks to one-quarter of their daily volume of trading, averaged over the previous four weeks (§240.10b-18(13iv(B1)).[12] When Rule 10b-18 was adopted in 1982, one of the SEC commissioners, John Evans, warned that some manipulation of the market would now go unprosecuted (Hudson 1982). Lazonick and Jacobson (2022) show that there was no sound empirical basis for setting the average daily trading volume (ADTV) limit at 15%, as had been the case under proposed Rule 13e-2, let alone the much more expansive 25% in Rule 10b-18 (Lazonick and Jacobson 2022). Given the increase in trading volume generally, including both block trading and high-frequency trading in particular, this trading-volume limit is based on a denominator that now permits far more 'safe harbor' market manipulation than it did four decades ago.

In addition to the lack of presumed liability for exceeding the safe harbor, corporations do not have to report metrics such that the SEC can determine whether they are within the safe harbor. Because stock buyback activity must only be reported on a monthly basis, not daily, it is impossible for even regulators to tell if there has been a violation of the 'safe harbor', showing that the Rule has no practical impact on corporate decision-making. Companies may circumvent the safe harbor limit by doing 'accelerated share repurchases' with no apparent response from the SEC (Kurt 2018). In Table 2, we present calculations of the ADTV limits of the nation's largest industrial repurchasers in October 2019, prior to the pandemic, and June 2021, when the pandemic had become normalized. For all companies (with the exception of McDonald's) the ADTV limit was higher, and in most cases substantially higher, in June 2021, reflecting a general increase in stock-market speculation and manipulation, with some innovation, during the pandemic. Whether prior to the pandemic or in its midst, it is clear from these calculations that the Rule's stipulations do not in fact serve to curb large transactions that affect the market price of a company's stock.

3.2. Summary of policy reform proposals

In the absence of a suite of countervailing institutions to limit pressure for shareholder payments and encourage innovative corporate investment, limiting stock buybacks may not be a silver bullet, but it is a necessary component of a broader reform agenda that would move US corporations away from shareholder value maximization and in the direction of innovation and sustainable prosperity.

First, Rule 10b-18 should be repealed and replaced by regulations that will limit buybacks and encourage the redirection of US corporations toward innovation. The most effective policy reform to curb the harms of stock buybacks would be for Congress to prohibit open-market share repurchases under the Securities and Exchange Act Sec. 9 (a)(2). The act governs trading of equities in the secondary markets and regulates fraud and manipulative activity. Congress could limit open-market share repurchases altogether or place bright-line limits on buybacks (Palladino 2019). Congress has a range of options for reforming the practice of stock buybacks. Congress can ban open-market repurchases of an issuing company's own stock while leaving options available for private repurchase transactions,[13] which are not currently regulated under Rule 10b-18.[14] This prohibition would recognize that open-market share repurchases allow a company to manipulate the market price of its stock and would ban them on those grounds. This is the most straightforward proposal for reducing market manipulation and creating conditions for innovation in the United States.

Short of an outright ban, legislated bright-line limits on buyback activity and the removal of the safe harbor provision could reduce harms from buybacks (Palladino 2019). This would be justified under the same argument––that open-market stock buybacks are a tool for stock market manipulation––and would be in line with the regulations in place in many advanced financial markets (Jaemin, Schremper, and Varaiya 2004). A bright-line limit should not simply adopt the current limits contained in Rule 10b-18; the choice of 25% of the average daily trading volume was based on no evidence that this ratio forestalls manipulation (Lazonick and Jacobson 2022). Further study should be required to define an exact set of bright-line limits, but it is clear that given the speed and volume of trading in the 21st century, there is no a priori reason to accept the twenty-five percent of trading volume metric.

Several recent Congressional proposals would make a company's authorization to conduct stock buybacks contingent on improved corporate behavior. For example, buybacks would be forbidden to companies with underfunded pension obligations; with recent layoffs; with excessive wage dispersion; or with executive compensation above a certain absolute limit or ratio relative to median worker pay. These proposals, though useful from a narrative perspective in tying together the issues of stock buybacks and economic inequality as experienced by workers, would nonetheless leave substantial opportunities for corporate executives to manipulate data to permit buybacks. Such proposals might thus create more openings for buybacks than intended and should be avoided.

Any reform of open-market share repurchases must remove the incentives for corporate insiders to benefit personally from stock buyback transactions. Corporate insiders should be forbidden from selling their personal shareholdings in conjunction with buybacks that they authorize. Congress should also require immediate disclosure and determination concerning the permissibility of buybacks (Palladino 2020; Fried 2000). Yet disclosure mandates without reform of Rule 10b-18 could make matters worse by encouraging speculative use of the disclosure data to time the buying and selling of shares (Lazonick 2015b). Much of the incentive problem derives from the fact that the vast majority of senior corporate executives are paid at least partly––and often predominantly––in financial instruments whose values are tied to the price of their company's stock. These executives are in a position to gain significantly when a stock price rise

spurred by buybacks coincides with their exercise of stock options or the vesting of their stock awards (Hopkins and Lazonick 2016; Shilon 2021). Structuring executive compensation in this manner presents a clear threat to management's focus on corporate innovation and broader reforms of the rules governing executive compensation are crucial.

The SEC is already authorized to issue rules[15] regulating stock buybacks, including: bright-line limits; the ability of corporate insiders to benefit from buyback transactions; and real-time disclosure requirements to alert the public of stock buyback activity as it takes place. Section 2(e)(1) of the Williams Act Amendment to the Exchange Act of 1968 explicitly states that it is unlawful for companies to engage in an open-market share repurchase if that purchase 'is in contravention of such rules and regulations as the Commission ... may adopt (A) to define acts and practices which are fraudulent, deceptive, or manipulative, and (B) to prescribe means reasonably designed to prevent such acts and practices'. Thus, even without congressional action, the commission can take affirmative steps to reduce the ability of companies to manipulate the market price of their own stock, require a comprehensive disclosure regime, and end the ability of corporate insiders to benefit from stock buyback execution concurrent with their personal share-selling.

To begin, the SEC must repeal Rule 10b-18 and issue new rulemaking that puts companies on notice that they may be found liable for open-market share repurchases that constitute potential market manipulation. Then, the SEC should place bright-line limits on stock buybacks rather than offering repurchasers a safe harbor bounded by the current limits on volume, timing, and purchaser. As with the congressional policy approach, the SEC must undertake an empirical analysis to determine the correct bright-line limits for repurchase volumes rather than rely on the 25% of average daily trading volume (ADTV) or even the 15% of ADTV proposed over 40 years ago. The commission must also focus on the personal incentives that stock buyback activity creates for executives. Corporate insiders could be prohibited from trading their personal holdings during a quarter in which buybacks have been executed, or at minimum required to disclose in real time when they are doing so. Most other advanced financial markets – including those of the United Kingdom, Japan, France, Hong Kong, Canada, and the Netherlands – explicitly restrict trading by insiders during periods of stock buyback activity (Jaemin, Schremper, and Varaiya 2004).

Finally, even if substantial reforms take more time, under Rule 10b-18 regulators should at minimum immediately require disclosure of stock buyback activity on a daily basis to ensure that companies are complying with the limited requirements that constitute the safe harbor. To be clear, the ability of companies to spend 25% of ADTV is still manipulative, but disclosure is a bare minimum and should have been required all along (Lazonick 2015b). Without such disclosure, the 'safe harbor' idea is meaningless, as the SEC does not even collect the data necessary to determine whether companies are staying within the safe harbor's limits (Dayen 2015).

4. Conclusion

The nation's recovery from the COVID-19 pandemic offers an opportunity for reform of the four-decade old value-extractive corporate model. The ideology of shareholder

primacy in corporate governance contributed to the country's widening income and wealth inequality by directing corporate funds to the wealthiest 10% of households (largely white) who now own 88.7% of corporate stock, while workers experienced four decades of wage stagnation (Distributional Financial Accounts 2021). As the negative experience following 1982 demonstrates, policymakers have remarkable power to redirect the nation's corporate resources. Restricting the extractive practice of stock buybacks, which was unleashed in 1982, can initiate a recovery towards innovation and sustainable prosperity. Policy design is critical, and both Congress and the Securities and Exchange Commission have excellent options for reform.

Notes

1. Profits, or net income, are defined in corporate SEC 10-K statements as Total Revenue less (costs of goods sold + operating expenses + other gains or losses + other expenses + depreciation + interest expense + taxes).
2. Since 2004, SEC disclosure regulations have required corporations to report the repurchasing of their shares on their Form 10-Q quarterly reports by stating the number of shares repurchased and the average purchase price per share. Companies are not required to disaggregate shares purchased on the open market that are (nominally) regulated by Rule 10b-18 and in other repurchase transactions. More details on data availability are found in Appendix B.
3. It is important to differentiate between two types of distributions made to shareholders: dividends and stock buybacks (we use the term "distributions" rather than "returns to shareholders", as the vast majority of shareholders today purchase shares on the secondary markets, and thus have never contributed financial assets to the company in the first place). Although the *volume* of funds spent on dividends and stock buybacks can be similar, stock buybacks create harms that dividends do not. Dividends do not directly bid up the stock price, and they do not encourage insiders to strategically time the sale of their own shares. While dividends have historically risen steadily, boards do not want to create expectations of perennially unsustainable dividend levels. Dividend increases accrue to all shareholders (with the same class of stock), while stock buybacks directly benefit only shareholders who sell strategically around the buyback.
4. A letter to the SEC from an executive at Investors Exchange LCC stated: "As the global head of trading at a large asset manager put it: *When it comes to handling the corporate buyback, what's painfully obvious to us is that the corporate buyback is probably the most gameable order in the marketplace. If you pursue liquidity in a corporate buyback algorithm, other participants can easily sense how the algorithm is going to react and try to trade in front of it*". (Ramsay 2018).
5. We use S&P Compustat, a data vendor available through Wharton Research Data Services, to aggregate individual corporate 10-Q and 10-K filings.
6. Lazonick and Hopkins (2020) detail the complete history of the shift in prioritization from innovation toward shareholder value maximization in the companies responsible for producing ventilators for the US national stockpile.
7. The SEC issued Proposed Rule SR for public comment on December 15, 2021. As of this writing, the public comment period is still open. The proposal does include some of the recommendations made herein. See "Share Repurchase Disclosure Modernization", Release Nos. 34–93783, https://www.sec.gov/rules/proposed/2021/34–93783.pdf.
8. Under the Securities and Exchange Act of 1934, which governs secondary trading in the financial markets, companies are subject to anti-fraud and anti-manipulation rules in their trading activity. Capital is a stock, not a flow, and secondary trading relates to financial flows, not investment in an asset (i.e. a stock).

9. Williams Act, Pub. L. No. 90–439, 82 Stat. 455 (1968).
10. The initial proposal to limit buybacks to 15% of average daily trading volume was based on a single article published in 1965, based on share repurchases conducted by large companies in that year for the purposes of employee compensation, not stock-price manipulation (Guthart 1965; Lazonick and Jacobson 2022).
11. Purchases of Certain Equity Securities by the Issuer and Others, 45 Fed. Reg. at 70891.
12. Specifically, the Rule reads: "***(1)*** The total volume of Rule 10b-18 purchases effected on any single day does not exceed the lesser of 25% of the security's four-week ADTV or the issuer's average daily Rule 10b-18 purchases during the three full calendar months preceding the date of the announcement of such transaction".
13. Private repurchase transactions and "tender offers" are direct offers to shareholders made publicly by companies to repurchase their shares at a particular price, and do not involve the same potential for market manipulation because they are disclosed in advance and do not take place in the open market. Also see footnote 3, above.
14. This was first proposed by Senator Tammy Baldwin (D-WI) in the "Reward Work Act".
15. In the United States, Congress passes legislation, which independent regulatory agencies, like the Securities and Exchange Commission, carry out through promulgating rules, which must be within the scope of what has been passed legislatively. In this case, only Congress could ban stock buybacks substantively, but the SEC has the authority to revise rules of corporate conduct (subject to the Administrative Procedures Act.) For a theoretical treatment of the difference between legislation and regulation, see (Kosti, Levi-Faur, and Mor 2020).
16. Phillip Brzenk and Aye M. Soe, "Digging Deeper into the U.S. Preferred Market", *S&P Dow Jones Indices*, October 2015, https://www.spglobal.com/spdji/en/documents/research/research-digging-deeper-into-the-us-preferred-market.pdf.
17. See Matt Hopkins and William Lazonick, "The Mismeasure of Mammon: Uses and Abuses of Executive Pay Data", *Institute for New Economic Thinking Working Paper* No. 49, August 29, 2016, https://www.ineteconomics.org/research/research-papers/the-mismeasure-of-mammon-uses-and-abuses-of-executive-pay-data.

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Appendices

Appendix A

Table A1. Top Corporate Spenders by NAICS.

Ambulatory Health Care Services

NAICS	Sector	Aggregate Buybacks (2019) in Millions
621	Davita Inc.	$2,402.53
621	Humana Inc.	$870.04
621	Fresenius Medical Care AG&Co.	$581.39
621	Laboratory CP of Amer Holdings	$464.41
621	Quest Diagnostics Inc.	$365.68
621	Mednaxinc.	$145.30
621	Chemed Corp.	$92.63
621	Amedisys Inc.	$9.40
621	LHC Group Inc.	$9.29
621	Apollo Medical Holding Inc.	$7.31

Hospitals

NAICS	Sector	Aggregate Buybacks (2019) in Millions
622	HCA Healthcare Inc.	$1,030.96
622	Encompass Health Corp.	$62.54
622	Select Medical Holdings Corp	$38.52
622	Community Health Systems Inc.	$3.60
622	Acadia Healthcare Co. Inc.	$2.27
622	Quorum Health Corp.	$0.13
622	Amedisys Inc.	$9.40
622	LHC Group Inc.	$9.29
622	Apollo Medical Holding Inc.	$7.31

Education Services

NAICS	Sector	Aggregate Buybacks (2019) in Millions
611	Laureate Education Inc.	$270.87
611	Adtalem Global Education Inc.	$242.41
611	Grand Canyon Education Inc.	$43.93
611	American Public Education	$40.50
611	Bright Scholar Edu -Adr	$39.12
611	Perdoceo Education Corp.	$6.63
611	Sunlands Tech Group -Adr	$4.54
611	Graham Holdings Co.	$1.86
611	Rise Edn Cyn Ltd -ADS	$1.58
611	Laix Inc. -ADR	$1.53

Nursing and Residential Care Facilities

NAICS	Sector	Aggregate Buybacks (2019) in Millions
623	Brookdale Senior Living Inc.	$23.02
623	Ensign Group Inc.	$13.71
623	National Healthcare Corp.	$0.84
623	Five Star Senior Living Inc.	$0.03

Social Care

NAICS	Sector	Aggregate Buybacks (2019) in Millions
624	Bright Horizons Family Solutions	$34.78

Source: Authors' Calculations of Form 10-K as provided by S&P Compustat.

Table A2. Legislative Proposals to Limit Stock Buybacks.

Name& Year	Sponsors& Co-sponsors	Description
Reward Work Act (2019)	Author: Sen. Tammy Baldwin (D-WI) Cosponsors: Sen. Kirsten Gillibrand (D-NY), Sen. Bernie Sanders (I-VT), Sen. Elizabeth Warren (D-MA) Also introduced in the House by: Rep. Jesus G. "Chuy" Garcia (D-IL) and Rep. Ro Khanna (D-CA)	Repeals SEC Rule l0b-18 to end stock buybacks by removing immunity from manipulation charges. Institutes a rule that no issuer may register securities on a national exchange unless one-third of the firm's directors are chosen by employees through a one-employee, one-vote process.
Schumer & Sanders NYT Op-Ed (2020)	Authors: Sen. Chuck Schumer (D-NY) & Sen. Bernie Sanders (I-VT)	They plan to introduce a bill that would ban stock repurchases unless a firm meets the following conditions: • providing a $15 minimum wage; • providing seven days of paid sick leave; and • offering decent pensions and reliable health benefits.
Corporate Accountability and Democracy Plan	Author: Sen. Bernie Sanders (I-VT)	Obligates firms with over $100 million in revenue and with a $100 million balance sheet total to: • build up to 20 percent stock ownership by employees; • require 45 percent of the Board of Directors to be chosen by employees; and • obtain a Federal Charter that requires boards to consider the interests of all stakeholders. Repeals SEC rule l0b-18 to end stock buybacks. Establishes a $500 million Employee Ownership Bank that will assist workers with loans, guarantees, and technical assistance to purchase their own businesses via Employee Stock Ownership Plans (ESOPs) or Eligible Worker-Owned Cooperatives. Requires firms that displace labor for automation or outsourcing to share gains with workers via conveyed shares. Guarantees a Right of First Refusal via the Employee Ownership Bank. Creates Worker Ownership Centers to assist retiring small business owners in selling their firms to their employees. Requires a significant proportion of corporate boards to be composed of people from historically underrepresented groups. Has a Shareholder Democracy Component that: • States that every employee should have a right to vote in the firm and have a voice in setting their wages; • Bans actions by asset managers without explicit instructions from those whose money they manage; and • Says that savers should be able to elect representatives who set voting policy in corporations, multi-employer pensions, single-employer pensions, and 401K funds. Organizes sectoral pensions.
Stock Buyback Reform and Worker Dividend Act of2019 (S.2391)	Author: Sen. Sherrod Brown (D-OH)	Requires public companies to pay workers $1 for every $1 million they spend on dividends, special dividends, or stock buybacks. Lowers the permissible level of stock buybacks and imposes new reporting requirements. Converts the safe harbor rule to a mandatory prohibition on excessive buybacks. States that if employers fail to meet worker dividend requirements, there will be a five-year moratorium on new buybacks and a private right of action for employees.
Worker Dividend Act of2019 (S.2514)	Authors: Sen. Cory Booker (D-NJ), Sen. Bob Casey (D-PA), and former Sen. Joe Kennedy (D-MA) (House version)	Applies to all publicly traded companies with at least $250 million in earnings in a given year. A total obligation to employees would be calculated as the lesser of the total in profits above $250 million or50 percent of the firm's buybacks.

Appendix B. Data appendix on open-market repurchases

SEC Rule 10b-18, adopted in 1982, pertains only to *common share repurchases executed on the open market*. It does not pertain to tender offers or private transactions to purchase shares. It is through open-market repurchases (OMRs) that a company can manipulate its stock price. Our critique of stock buybacks as a legalized corporate mode of manipulating stock prices, therefore, concerns only OMRs, and hence it is common share repurchases executed on the open market that we seek to quantify in this article.

The sources of data on the number and value of its own common shares that a company repurchases are the 10-K (annual) and 10-Q (quarterly) reports on their financial condition that every U.S.-based corporation that is publicly traded on a stock market must file with the Securities and Exchange Commission (SEC). Information on share repurchases is provided in the Statement of Cash Flows and Statement of Shareholders' Equity as well as in Notes to the Financial Statements. If we hand collect data from these company financial statements, we can determine the quantity and value of OMRs that a company has executed in a given year or quarter. (Also, since 2004, as a result of a revision of Rule 10b-18 in 2003, each company reports in its 10-K and 10-Q Notes the number of shares and average price per share paid on a monthly basis.)

Hence, when we hand-collect individual company data, as we have done for the 20 companies in Table A1 of this article, the numbers represent OMRs only. In principle, for complete accuracy in reporting OMRs, we could hand-collect the data for all 500 companies in the S&P 500 database or even for the entire universe of publicly traded corporations that do 10-K or 10-Q filings. Performing that type of data collection, however, would be well beyond the resources that we and most other researchers have available, and it is obviously for that reason that subscription databases exist. In the case of stock buybacks, for large-scale aggregations, we use the Standard & Poor's (S&P) Compustat database, to which we have access through the subscriptions of our academic institutions.

There are, however, a number of problems with the way in which S&P compiles data on share repurchases for its Compustat database that render both the aggregate and individual company figures imprecise measures of stock buybacks done as OMRs.

(1) S&P sometimes makes mistakes in data entry, which we discover from time to time when we hand-collect data for the purpose of analysis of particular companies.
(2) S&P's stock buyback variable, 'Purchase of Common and Preferred Stock' (PCPS), taken from a company's Statement of Cash Flows, does not, as the variable name indicates, distinguish between the repurchase of common shares and preferred shares. But preferred shares outstanding are a very small proportion of common shares outstanding. A study for 2015 found that the value of preferred shares outstanding on U.S. stock markets was $241 billion, which was just 1.06% of the $22.71 trillion of all stock outstanding.[16]
(3) S&P's PCPS does not isolate OMRs from shares repurchased via tender offers or private transactions. We are not aware of databases on the value of tender offers or private share-repurchase transactions in the United States. They are one-off events, and our sense from our extensive experience in hand-collecting buyback data from 10-K filings is that OMRs represent the vast majority – a guestimate would be at least 95%–of all repurchases in the S&P PCPS variable.
(4) There is variation in the way in which different companies report share repurchases in the Statement of Cash Flows, for which S&P does not correct in compiling its PCPS variable. For example, in its Statement of Cash Flows, General Electric reports 'Net dispositions (purchases) of GE shares for treasury', which is the number that S&P enters as GE's PCPS. But this figure subtracts funds collected from employees from stock-based compensation plans from funds spent on stock buybacks (almost all of which are OMRs). The correct OMR figure can be found in GE's Notes to the Financial Statements. When we compile our S&P 500 database, using PCPS in the first instance, we make this correction for GE and any other company (which are very few) that we discover engages in idiosyncratic reporting of this type.

(5) S&P PCPS includes an item (using Apple's designation) 'Payments for taxes related to net share settlement of equity awards', even though in the Statement of Cash Flows it is a separate line from 'Repurchases of common stock', which is the correct line item for PCPS. In many cases, the company itself combines these two distinct pieces of information in reported repurchases, that then are entered into S&P's PCPS. This incorrect conflation of two very different types of data arose from the mid-2000s, when many companies shifted from stock options to stock awards as their prime mode of stock-based incentive pay. The main reason for this shift was the expensing of stock-based pay on 10-K and 10-Q financial statements; stock awards entail fewer shares issued to employees for the same amount of realized gains.[17] But, for employees, stock options also have the disadvantage that to exercise the option they have to pay the company the exercise price while immediately upon exercise the company withholds the employee taxes on the realized gain. These cash outlays generally compel employees to sell the shares immediately upon exercise, which is not what the company wants employees to do. Stock awards, by contrast, accrue to the employee when they vest without any cash payment to the company. But the company must still withhold employee taxes on the realized gain when the awards vest, which might also incline, and perhaps compel, employees to sell the shares immediately. To avert this pressure, the company 'repurchases' a portion of the shares that it has awarded to employees to cover the withholding taxes; hence Apple's 'Payments for taxes related to net share settlement of equity awards'. Based on our experience in hand-collecting data, the correction to the PCPS variable so that it only represents external repurchases (almost all of which are OMRS) reduces total buybacks for 466 companies in the S&P 500 Index publicly listed from 2010 through 2019 from $4.925 trillion reported in S&P PCPS to $4.829 trillion, or a reduction of 1.95%. For certain companies such as Apple and Alphabet, however, the correction to the S&P PCPS measure to capture just OMRs can be very large, especially in the presence of soaring stock prices. Hand collection eliminates these errors. Perhaps S&P will see fit to correct its erroneous data-collection protocols.