

Corporate Liability, Collateral Consequences, and Capital Structure

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Abstract

Financial penalties imposed on malfeasant corporations often produce “collateral consequences,” or unintended negative impacts on employees, customers, and society more broadly. I show that the vast majority of government bodies that assess organizational penalties have adopted policies to reduce corporate liability where collateral consequences might otherwise result. Moreover, I demonstrate that officials frequently reduce penalties in line with these policies, undermining deterrence and compensation. I show that penalties generally lead to collateral consequences only because malfeasant corporations have discretion over how to pay liabilities, and show that social welfare would be improved if corporations were required to pay penalties through issuing equity.

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1 Introduction

In 2009, facing civil and criminal charges for their participation in multiple fraudulent schemes, one of the country’s largest home-builders, Beazer Homes, entered into a settlement agreement with state and federal prosecutors for up to \$50 million.¹ The settlement was widely criticized, including by the Inspector General of the Department of Housing and Urban Development, who argued that \$50 million was insufficient restitution for the victims of Beazer’s fraud.² Even the U.S. Attorneys who helped author the settlement agreed that its total dollar amount was lower than what would be appropriate to adequately redress the losses suffered. They justified the fine, however, by appealing to Beazer’s financial solvency, writing that: “the imposition of additional criminal penalties or the requirement of additional payment at this time would jeopardize the solvency of Beazer and put at risk the employment of approximately 15,000 employees and full-time contractors not involved in the criminal wrongdoing.”³ This decision to lessen Beazer’s fine on account of the company’s solvency was consistent with Department of Justice policies and the United States Sentencing Guidelines, both of which support adjusting penalties downward to avoid financial distress.⁴

Fears of jeopardizing Beazer’s solvency were undoubtedly justified. Largely as a result of the 2008 housing-market crash, Beazer’s market capitalization had fallen by more than 90% over the preceding four years. Its total assets were valued at less than \$200 million, and the \$50 million fine amounted to over half of the firm’s market capitalization. Prosecutors understood that a larger fine could intensify Beazer’s financial distress and exacerbate layoffs, or even lead to the firm’s insolvency. They therefore faced an apparent trade-off: a large penalty was deemed necessary to deter future wrongdoing and to provide restitution for victims, but would likely inflict undesirable consequences on guiltless third parties. As a result, the U.S. Attorneys in charge of the case differed with officials at Housing and Urban Development about the appropriate settlement value.

Corporate liability is meant to deter illegal behavior and to compensate victims of corporate misconduct. But in the pursuit of these goals, the imposition of civil or criminal liability can lead to a variety of collateral consequences, including financial distress, job losses, decreased consumer welfare, and insolvency, which impact guiltless third parties such as employees, consumers, and society at large.⁵ Concerns about this trade-off between adequately penalizing corporations and avoiding collateral consequences pervade federal statutes, regulations, and policies.

But this apparent trade-off only arises because corporations have discretion over *how* to pay newly imposed penalties. Firms with sufficient cash on hand can pay newly imposed penalties directly. Firms without sufficient cash on hand to pay penalties generally choose

¹ *U.S. v. Beazer Homes USA, Inc.* (Deferred Prosecution Agreement) W.D.N.C. (Jul. 1, 2009).

² Javers, Eamon “DOJ Responds to Criticism of Beazer Homes Investigation.” MSNBC. 09/24/2010.

³ <https://archives.fbi.gov/archives/charlotte/press-releases/2009/ce070109.htm> (last accessed May 7, 2019).

⁴ The Justice Manual, 9-28.300(A)(8); United States Sentencing Guidelines §8C3.3(b).

⁵ My use of the term *collateral consequences* differs from the term as it is used in the literature on mass incarceration, where it refers to legal consequences arising from criminal convictions.

between three methods to free up the necessary funds: they can borrow money by issuing debt; they can liquefy capital by selling assets (e.g. factories, intellectual property); or they can raise money in the stock market by issuing new equity shares.

The corporation's choice of how to pay the penalty will have important implications for shareholders, but will also have broader effects on employees and society more generally. Shareholders of corporations with debt in place favor issuing additional debt and selling assets in order to satisfy new obligations. By increasing leverage and the risk of insolvency, debt issuances and asset sales shift some of the costs of new obligations away from shareholders and onto creditors, sometimes resulting in financial distress that negatively impacts third parties.

While shareholders favor paying liability through debt issuances and asset sales, other corporate stakeholders and society more broadly would be better served if corporations satisfied their penalties through equity issuances. By simply diluting shareholders' holdings, equity issuances impose the full incidence of liability on a firm's principals, without affecting assets, debt, leverage, employment, or solvency, thereby minimizing the potential impact on employees, consumers, and others. Mandating equity issuances would eliminate the trade-off between the costs and benefits of imposing corporate liability in all but the most extreme cases.⁶

In the case of Beazer's 2009 fraud settlement, prosecutors could have achieved the twin goals of corporate deterrence and victim compensation while avoiding the harmful collateral consequences that would have been visited on third parties by the firm's financial distress. Instead of imposing a downwardly adjusted \$50 million penalty, prosecutors could have imposed a larger penalty on Beazer with the condition that it *be paid through an equity issuance*. By mandating an equity issuance, prosecutors would have effectively imposed the full penalty on the firm's ultimate principals, its shareholders, without jeopardizing other, uninvolved parties. Even a very significant equity issuance in proportion to Beazer's market capitalization would not have further threatened the firm's solvency, because it would not have changed the firm's financial position. The 15,000 employees and full-time contractors who were not involved in criminal wrongdoing would have been able to continue their jobs, and the victims of Beazer's fraud would have received proper restitution. The mechanics of enforcement would have been simple, and the potential benefits would have been manifold.

The potential to avoid collateral consequences through new equity dates back to Coffee (1980). Unfortunately, Coffee's insight has not been pursued in the literature or by government officials. Indeed, Coffee himself did not feel that the time was ripe for the implementation of equity issuances, and instead focused his attention on other means of deterring and punishing corporate crime.⁷

However, much has changed in the past decades that make mandatory equity issuances ripe for application today. Concerns about collateral consequences were a theoretical concern when Coffee's paper was published. In contrast, I marshal doctrinal and empirical evidence to show that collateral consequences have become a central part of the corporate

⁶As I show in Section 5, the trade-off cannot be eliminated in cases where the desired fine is greater than the market capitalization of the firm. However, such relatively large fines will only occur in a small fraction of cases.

⁷Coffee (1980) concluded that the proposal "has little chance of political adoption."

liability decision. Moreover, because Coffee turned his attention to other solutions, he did not delve into the mechanics of utilizing mandatory equity issuances in cases of corporate liability. In this paper, I rationalize and refine the proposal in light of modern research on corporate finance and accounting. Importantly, I show that, following Coffee’s analysis, it did not appear that equity issuances needed to be mandatory. This may help explain why officials have not regularly introduced requirements to issue equity to pay corporate liability. In contrast I show that, to effectively avoid collateral consequences, officials must mandate that firms issue new equity.

Because equity issuances generally require an active securities market, I focus on publicly traded firms. While I discuss implications for private firms, the monetary value of liability imposed on public firms is far greater than liability imposed on private firms. Moreover, because my analysis focuses on the ex post payment of liability, the results apply equally to civil and criminal liability. This is particularly relevant, because while criminal convictions of public firms are relatively infrequent (Arlen, 2012), the total monetary value of civil fines imposed on corporations is far greater than the value of criminal penalties.⁸

In this paper, I make three principal contributions. I first show that there is currently an expansive legal basis for considering collateral consequences when imposing corporate liability. Second, I show that government officials regularly reduce corporate liability because of concerns about collateral consequences. Third, I show how concerns about collateral consequences can be avoided by mandating that corporations issue equity to pay corporate liability.

To accomplish these objectives, the paper proceeds as follows. In Section 2, I review the literature on corporate liability and discuss why it is generally necessary to impose liability on corporations—not just culpable employees—for malfeasance. I further discuss the social costs of financial distress and insolvency. While financial distress carries costs for investors who may lose their investments, distress can also harm employees, customers, suppliers, other firms, and entire communities. Importantly, while a corporation’s shareholders and managers may face some costs from financial distress, they do not internalize the full costs from distress and insolvency.

In Section 3, I provide an extensive survey of statutes, regulations, and policies from across the federal government to show the widespread emphasis on considering financial distress when imposing civil or criminal liability on corporations. I show that when imposing fines, government officials are allowed, encouraged, or even required to take into account the effect of penalties on: “innocent employees,” “customers,” “competition,” “ability to pay,” “ability to continue in business,” “others not proven personally culpable,” and “the public generally.” I show that many federal departments, agencies, and commissions explicitly factor concerns about collateral consequences into their enforcement decisions. Using data on over 400,000 criminal and civil cases with penalties totaling more than \$600 billion, I show that at least 96% of the monetary value of federal penalties are imposed by departments, agencies, and commissions governed by statutes, regulations, or policies that instruct officials to take into account collateral consequences.

In Section 4, I then turn to reductions of corporate liability in practice. In Section 4.1, I provide statistical evidence for the frequency of penalty reductions in corporate criminal

⁸See Section 4.

proceedings. Under the United States Sentencing Guidelines for organizations, liability may be reduced based on a defendant’s inability to pay so long as the “reduction under this subsection shall not be more than necessary to avoid substantially jeopardizing the continued viability of the organization.”⁹ I collect data from the United States Sentencing Commission on organizational defendants from 2002 through 2019 to gauge reductions in practice. I find that 20.6% of solvent firms and 55.1% of financially distressed firms have had their fines explicitly reduced because of concerns about financial distress.¹⁰

I then examine which aspects of a defendant corporation’s finances lead officials to reduce liability. In Section 4.2, I provide detailed case studies of instances where government officials explicitly reduced liability because of the fear of collateral consequences. The examples include liability arising from price-fixing, bribery, fraud, and environmental harm. I analyze the settlement language and the firms’ financial conditions at the time of liability to judge whether the concerns about financial distress were well-founded, and conclude that these concerns appear valid in some, but not all, cases. In the sample of cases that I consider, the reductions in fines seem to be driven partly by misconceptions about corporate finance and financial accounting rather than by true financial distress. In particular, the firms that I analyze often have low or negative net current assets (i.e. cash on hand), despite having book values and market values in excess of the fines imposed.¹¹ These firms could have afforded the full amount of liability through other means.

In Section 5, I make the case that officials concerned about collateral consequences should mandate that corporations pay liability through equity issuances. I show that firms are generally biased towards asset sales and debt issuances as means of paying liability, and are unlikely to issue equity in the absence of a formal requirement to do so. I then demonstrate that asset sales and debt issuances may lead to the very collateral consequences that officials are attempting to avoid, whereas mandating equity issuances would force corporations to pay liability without risking financial distress. I further show that mandatory equity issuances are easy to implement, do not require any meaningful financial analysis by officials, and can be imposed under the current legal framework. While the paper focuses on publicly traded companies, I also discuss implications for private firms. I conclude with a summary and considerations for future work. Appendix A provides detailed case studies and Appendix B contains a list of federal policies on collateral consequences.

2 Corporate Liability and the Collateral Consequences of Financial Distress

Corporate liability is broadly meant to deter firms from acting badly and to compensate the victims of their failures. From this perspective there is little theoretical distinction between

⁹United States Sentencing Guidelines §8C3.3.

¹⁰This excludes firms that were categorized as defunct, of which 69.4% had their fines reduced.

¹¹In personal-finance terms, the corporations had large credit-card balances and little money in the bank, despite having well-paying jobs and owning their houses outright.

civil and criminal corporate liability.¹² The central insight of deterrence theory is that the punishment imposed should induce wrongdoers to internalize the harm that they cause (Bentham, 1789; Becker, 1968), which extends to employees subject to personal liability for wrongdoing performed on the job. However, because many employees are shielded from liability, and because few employees have the financial resources to compensate victims of corporate malfeasance, most employees are not incentivized to fully internalize the social costs of the harms they cause (Shavell, 1986), and personal liability is insufficient to deter corporate malfeasance. Optimal deterrence therefore requires imposing liability on the corporation.

The literature on corporate malfeasance has thus far largely focused on how to structure liability in the presence of an agency conflict between managers and shareholders (Sykes, 1983; Newman and Wright, 1990; Polinsky and Shavell, 1993; Shavell, 1997; Arlen and Kraakman, 1997; Garoupa, 2000). Notably, in cases where insufficient liability is imposed, corporate malfeasance is jointly profitable for both employees and shareholders (Shapira and Zingales, 2017; Atkinson, 2020b). In this paper, I assume that there is no agency conflict¹³ and that corporations act in the best interests of their shareholders.¹⁴ I show that even if the manager-shareholder agency conflict is resolved, managers and shareholders can profit from malfeasance under the current liability regime, undermining deterrence. I reintroduce agency conflicts in Section 5.1.3, and show that mandatory equity issuances are better than standard fines at deterring managers from engaging in malfeasance.

Personal liability is also insufficient to provide compensation for victims of corporate malfeasance, due to the scale of much corporate wrongdoing. No culpable employee or group of employees could adequately compensate the victims of the Exxon Valdez oil spill, the Volkswagen emissions cheating scandal, the Deepwater Horizon disaster, or thousands of others acts of malfeasance causing hundreds of millions or even billions of dollars in damage. Victims would be grossly undercompensated were compensation to be provided through employee liability. Instead, ensuring adequate compensation frequently requires

¹²Judge Learned Hand recognized in *United States v. Nearing*, 252 F. 223 (S.D.N.Y. 1918) that “there is no distinction in essence between the civil and the criminal liability of corporations.” There are, of course, important characteristics that differentiate corporate civil and criminal liability, including procedural protections (e.g. evidentiary standards), sentencing guidelines, enforcement powers, and message-sending. However, for the analysis I will make no distinction between civil and criminal liability.

¹³Aligning the interests of shareholders with the managers and directors responsible for daily operations has been the defining question in corporate governance since Berle and Means (1932). Mechanisms to minimize the agency conflict include independent directors (Gordon, 2006); controlling shareholders (Grossman and Hart, 1980; Bebchuk et al., 2000; Dyck and Zingales, 2004); and shareholder activism (Brav et al., 2008; deHaan et al., 2019). More directly, executive pay is increasingly tied to financial measures (Hölmstrom, 1979; Bebchuk and Fried, 2003). In the 1970s, only 16% of S&P 500 companies conditioned CEO compensation on meeting performance targets (Bank et al., 2016). But by 2017, 85% of the average S&P 500 CEO’s target total compensation consisted of stock grants, stock options, and performance-based bonuses, with only 15% of total target compensation tied to a flat salary (Equilar, 2017). As a result, corporate directors are now more likely to internalize shareholder-value norms. Fortune 200 directors believe that they have a legal duty to maximize shareholder value, and almost all would, for example, condone the release of a harmful toxin to increase their firm’s share price (Rose, 2007).

¹⁴In the presence of agency costs, my proposal that officials mandate equity issuances will improve deterrence so long as managers internalize at least some of the costs of equity issuances imposed on shareholders.

corporate liability.

However, while there are clear benefits to imposing liability on corporations, liability payments can also lead to financial distress, insolvency, and an attendant variety of collateral consequences. Financial distress occurs when a company struggles to pay its financial obligations. The primary cause of financial distress is high levels of debt (Andrade and Kaplan, 1998). Liability from malfeasance can increase a corporation’s financial obligations, and when those obligations are met by issuing additional debt or by selling assets, the corporation increases its risk of insolvency. Far-reaching collateral consequences can result: employees may lose jobs (John et al., 1992; Kang and Shivdasani, 1997; Giroud and Mueller, 2015a), particularly in firms with high debt burdens (Ofek, 1993; Asquith et al., 1994; Sharpe, 1994; Calomiris et al., 1997; Hanka, 1998), customers may lose inputs, suppliers may lose contracts (Bernstein et al., 2018), the industry may face less competition, and entire communities may be devastated (Giroud and Mueller, 2018).

The burden a corporation’s financial distress imposes is particularly borne by its employees—being fired can be costly. Roughly 90% of laid-off employees become unemployed (Elsby et al., 2010), and these workers often suffer long delays before finding new employment (Katz and Meyer, 1990). They reduce their consumption (Gruber, 1997), and have significant wage losses when returning to work (Gibbons and Katz, 1991; Farber et al., 2005; Davis et al., 2012). Davis et al. (2011) estimate that those who lose their jobs in mass layoff events forfeit the equivalent of 1.4 years of earnings over a 20-year period, and 2.8 years of earnings if laid off during a recession.¹⁵ Unemployment also has effects well beyond earnings losses. Job losses can lead to the loss of the home (Hsu et al., 2018), lower achievement of children in school (Stevens and Schaller, 2011), divorce (Charles and Stephens, 2004), health problems (Burgard et al., 2007), and even death (Sullivan and Von Wachter, 2009). Only a marriage separation outranks the loss of a job in terms of its detrimental effect on happiness (Helliwell, 2003).

Employees suffer even more when financial distress leads to credit events such as bankruptcy or covenant violations. Employment decreases substantially around a bankruptcy filing (Hotchkiss, 1995), and remains significantly lower for years following both Chapter 11 reorganization and Chapter 7 liquidation (Bernstein et al., 2019). Both debt defaults and covenant violations cause firms to cut employees (Agrawal and Matsa, 2013; Falato and Liang, 2016). Moreover, while some employees retain their jobs at reorganized or liquidated establishments, these employees see significant earnings losses (Graham et al., 2019).

The effects of a firm’s financial distress extend far beyond the firm in question. Regions with more highly-leveraged firms have significantly larger declines in employment following shocks than regions with less-leveraged firms (Giroud and Mueller, 2015b), and regional increases in borrowing result in declines to long-term employment (Giroud and Mueller, 2018). Moreover, employment declines substantially in other firms in the immediate neighborhood of liquidated establishments (Bernstein et al., 2018).

Far from those that work at or near the firm, financial distress and insolvency can lead to antitrust concerns and may carry costs for industry concentration, competition, and consumer welfare. Opler and Titman (1994) show that highly leveraged firms lose significant

¹⁵See Matsa (2018) for a more general discussion on the relationship between capital structure and a firm’s workforce.

market share following financial distress, and the effect is even stronger in concentrated industries. With fewer firms in competition, the remaining firms see higher profits (Grullon et al., 2019) and consumers face higher prices (Philippon, 2019).

In aggregate, the potential costs of financial distress to employees, consumers, and the public are large and widespread. While financial distress also carries costs for shareholders and creditors,¹⁶ these investors accept—and are compensated for—these costs, and should not be protected from market forces. As I show in the following sections, our current legal paradigm fails to encourage shareholders to internalize these broader social costs in the context of paying liability for malfeasance, but a new approach, focused on equity issuances, can realign their incentives with guiltless third parties and the broader public.

3 The Expansive Legal Basis for Considering Collateral Consequences in Criminal and Civil Cases

In both criminal and civil contexts, the law allows—or even requires—government officials to take into account whether corporate liability would result in collateral consequences or financial distress. My use of the term *collateral consequences* differs from its use in the literature on individual criminal convictions, where it refers to sanctions that are imposed by law as a result of a criminal conviction.¹⁷ In particular, I use the term to refer to the considerations of financial distress, job losses, reduced competition, and negative effects on the public generally arising from imposing liability on corporations.

The federal government is comprised of hundreds of departments, agencies, and commissions, each governed by unique statutes and regulations. In this section, I summarize the expansive legal basis for reducing corporate liability when decisionmakers are concerned

¹⁶The direct costs of bankruptcy (e.g. filing, legal, and professional fees) are estimated to be between 2-20% of a firm's total assets (Ang et al., 1982; Weiss, 1990; Bris et al., 2006) the indirect costs of bankruptcy are more difficult to estimate. A comparison of bankrupt firms' actual and expected profits finds an average indirect cost of 10% of firm value measured just before bankruptcy (Altman, 1984). Recent studies using the market prices of debt and equity to identify how markets price the expected costs of bankruptcy find heterogeneous costs based on firm characteristics and industry that vary between 15% and 60% of a firm's assets (Korteweg, 2010; Davydenko et al., 2012; Reindl et al., 2017).

The outcomes of corporate bankruptcies further depend on whether the firm files under Chapter 7 (liquidation) or Chapter 11 (reorganization). While assets are frequently sold both in Chapter 7 and Chapter 11, these sales are less efficient in liquidation relative to reorganization (Bernstein et al., 2019). Liquidation also leads to lower growth for firms in the area of the liquidated establishment and fewer firms entering the area Bernstein et al. (2019). Moreover, financially distressed firms delay filing for bankruptcy in ways that appear to be costly (Andrade and Kaplan, 1998). However, asset sales also occur following distress and before insolvency. Firms sell assets following declines in operating performance (Kang and Shivdasani, 1997), and the proceeds from asset sales are large—in aggregate firms raise roughly as much from asset sales as they do from debt plus equity issuances (Eckbo and Kisser, 2015). Of firms that sell assets, over half state financial motives for doing so (Borisova et al., 2013), and financially distressed firms are much more likely to sell assets to fund operations than are financially sound firms (Andrade and Kaplan, 1998; Campello et al., 2010).

¹⁷Examples include the revocation of professional licenses, see e.g. N.M. STAT.ANN. §61-17A-21 (2016); loss of custody of children, see e.g. WASH.ANN. CODE §388-25-0450 (2016); and ineligibility for food stamps, see e.g. ARK.ADMIN. CODE 016.20.2-1622.20 (2016).

about collateral consequences, and Appendix B contains a more extensive list of policies dealing with collateral consequences. The statutes and regulations covered in this section and in Appendix B cover departments, agencies, and commissions that impose over 96% of the monetary value of all corporate fines imposed by the federal government.¹⁸ In Section 4, I show that officials frequently use these legal bases to reduce corporate liability in practice.

In the criminal context, the explicit consideration of the collateral consequences arising from prosecutions of corporations dates back at least to a 1999 memorandum on corporate criminal liability by Deputy Attorney General Eric Holder (the “Holder Memorandum”).¹⁹ This memorandum is now codified in the United States Justice Manual:

“In conducting an investigation, determining whether to bring charges, and negotiating plea or other agreements, prosecutors should consider the . . . collateral consequences, including whether there is disproportionate harm to shareholders, pension holders, employees, and others not proven personally culpable, as well as impact on the public arising from the prosecution.”²⁰

The United States Sentencing Guidelines (USSG) further stress collateral consequences in criminal proceedings against corporations. In principle, the Organizational Guidelines are “designed so that the sanctions imposed upon organizations and their agents, taken together, will provide just punishment, adequate deterrence, and incentives for organizations to maintain internal mechanisms for preventing, detecting, and reporting criminal conduct.”²¹ However, the USSG explicitly instruct prosecutors to consider collateral consequences, providing mechanisms to adjust sanctions downward to “avoid substantially jeopardizing the continued viability of the organization.”²² The Federal Rules of Criminal Procedure further provide that “[i]n determining whether to impose a fine, and the amount, time for payment, and method of payment of a fine, the court shall consider . . . the defendant’s income, earning capacity, and financial resources . . . [and] whether the defendant can pass on to consumers or other persons the expense of the fine.”²³

There is ample scope to consider collateral consequences when imposing corporate criminal liability.²⁴ However, while the Holder Memorandum and the sentencing guidelines provide a framework for thinking about collateral consequences, the vast majority of corporate-

¹⁸See Appendix B.

¹⁹“The Holder Memorandum,” Memorandum from Deputy Attorney General Eric H. Holder, Jr. to Heads of Department Components and U.S. Attorneys, Bringing Criminal Charges Against Corporations, June 16, 1999.

²⁰The Justice Manual, 9-28.300(A)(8) – Principles of Federal Prosecution of Business Organizations.

²¹USSG §8.

²²USSG §8C3.3(b).

²³18 U.S.C. §3572(a).

²⁴To my knowledge, there are no court cases challenging the legality of reducing corporate liability in response to fear of collateral consequences. However, some courts have been receptive to reductions in sanctions against individual business owners for fear of collateral consequences to employees. In *United States v. Milikowsky*, 65 F.3d 4 (1995), the Second Circuit Court of Appeals supported the district court’s downward departure because of the “destructive effects that incarceration of a defendant may have on innocent third parties.” The First Circuit has also allowed considerations of job losses when contemplating downward departures (*United States v. Olbres*, 99 F.3d 28, 34, (1996)). Other Circuits have resisted down-

liability cases are fully or partially civil in nature.²⁵ Under many civil statutes, a violator’s ability to pay is one of the factors to weigh when determining a penalty.²⁶ Under other statutes, agencies are directed to take into consideration “the economic impact” or “effect” of the penalty on the violator.²⁷ In the following pages, I illustrate the broad scope of concerns about collateral consequences across the federal government.

Attorneys prosecuting civil cases at the Department of Justice can settle with defendants for a fine no less than 85% of the original claim,²⁸ or when “a qualified expert has determined that the amount is likely the maximum that the offeror has the ability to pay.”²⁹ Furthermore the Justice Manual specifies that civil cases may be compromised if “[t]he United States Attorney believes that the full amount of a claim of the United States cannot be collected in full due to the financial condition of the debtor.”³⁰

The Environmental Protection Agency, which imposes the next highest total monetary value of fines after the Department of Justice, has in place several policies allowing for fines to be mitigated in response to concerns for the payer’s financial distress and the collateral consequences that might result. Despite its general policy that “penalties generally should, at a minimum, remove any significant benefits resulting from failure to comply with the law,”³¹ the EPA will reduce liability when penalties would “result in plant closings, bankruptcy, or other extreme financial burden, and there is an important public interest in allowing the firm to continue in business.”³² The Agency further will “generally not request penalties that are clearly beyond the means of the violator. Therefore, EPA should consider the ability to pay a penalty in arriving at a specific final penalty assessment.”³³

ward departures because “when a district court varies downward on the basis of the collateral consequences of the defendant’s prosecution and conviction, the defendant’s sentence will not reflect the seriousness of the offense, nor will it provide just punishment.” *US v Musgrave*, 761 F.3d 602 (2014). The lack of jurisprudence on downward departures in corporate cases is likely due to the fact that, unlike the sentencing of individuals, guidelines on the sentencing of organizations explicitly allow the consideration of collateral consequences. And given that most corporate prosecutions end in settlements, and that district and appellate courts alike are generally deferential to agencies that craft settlement agreements, *Rita v. United States* 551 US 338 (2007), there is little likelihood of a challenge to penalties being reduced because of concerns about collateral consequences.

²⁵See Section 4.1.

²⁶See e.g. Clean Water Act (CWA), §309(g)(3), 33 U.S.C. §1319(g)(3); Toxic Substances Control Act (TSCA), §§16(a)(2)(B), 207(c)(1)(C), 15 U.S.C. §§2615(a)(2)(B), 2647(c)(1)(C); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), §109(a)(3), 42 U.S.C. §9609(a)(3); Emergency Planning and Community Right-to-Know Act (EPCRA), §325(b)(1)(C), 42 U.S.C. §11045(b)(1)(C); and the Act to Prevent Pollution from Ships (APPS), §9(b), 33 U.S.C. §1908(b).

²⁷See e.g. Clean Air Act (CAA), §§113(e)(1), 205(c)(2), 42 U.S.C. §§7413(e)(1), 7524(c)(2); CWA, §§309(d), 311(b)(8), 33 U.S.C. §§1319(d), 1321(b)(8); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), §14(a)(4), 7 U.S.C. §136l(a)(4); and the Safe Drinking Water Act (SDWA), §1423(c)(4)(B)(v), 42 U.S.C. §300h-2(c)(4)(B)(v).

²⁸28 C.F.R. §0.160(a)(1).

²⁹28 C.F.R. §0.160(a)(2).

³⁰The Justice Manual, 4-3.200(D) – Bases for the Compromising or Closing of Claims Involving the United States.

³¹“EPA Policy on Civil Penalties”, Environmental Protection Agency, February 16, 1991 (*available at* <https://www.epa.gov/enforcement/policy-civil-penalties-epa-general-enforcement-policy-gm-21>).

³²*ibid.* §I(D)(2).

³³*ibid.* at 23.

The extent to which the EPA reduces fines for fear of causing job losses or financial distress is unclear, but Atkinson (2020b) estimates that the fines imposed by the EPA for the largest violations of agency rules are set far below the economic benefit of noncompliance.

Various financial agencies also take into account the effects that their fines potentially will cause on the solvency of penalized business. The Consumer Financial Protection Bureau stipulates that any penalty amount should “take into account the appropriateness of the penalty with respect to . . . the size of financial resources and good faith of the person charged.”³⁴ While the Bureau requires firms to compensate consumers (“an adjustment”) for willful violations intended to mislead,³⁵ the statute clarifies that “no adjustment shall be ordered . . . if it would have a significantly adverse impact upon the safety or soundness of the creditor.”³⁶ Other financial agencies that consider a violator’s financial resources include: the Federal Housing Finance Agency, which takes into account “the effect of the penalty on the safety and soundness of the regulated entity;”³⁷ the Federal Deposit Insurance Corporation, which mitigates penalties based on “the size of financial resources . . . of the insured depository institution or other person charged;”³⁸ and the Federal Reserve Board, which gives parties “the opportunity to provide Board staff with any evidence, including financial factors, that would either weigh against assessment or mitigate the amount of the proposed penalty.”³⁹ Likewise the Federal Trade Commission, when determining penalties for unfair competition, takes into account factors including a corporation’s “ability to pay [and the penalty’s] effect on [the corporation’s] ability to continue to do business.”⁴⁰

Agencies and commissions that are meant to protect the bodily safety of workers, consumers, and the general public also allow for concerns about a corporations’ finances to impact the fines they levy. The Mining Safety and Health Administration stipulates that the determination of whether to impose a penalty should take into account the “appropriateness of such penalty to the size of the business . . . [and] the effect on the operator’s ability to continue in business.”⁴¹ Furthermore, “if the penalty will adversely affect the operator’s ability to continue in business, the penalty may be reduced.”⁴² The Consumer Product Safety Commission takes into account “the appropriateness of such penalty in relation to the size of the business of the person charged, including how to mitigate undue adverse economic impacts on small businesses.”⁴³ Similarly, the National Highway Transportation Administration “may consider a person’s ability to pay, including in installments over time, any effect of a penalty on the respondent’s ability to continue to do business, and relevant financial factors such as liquidity, solvency, and profitability.”⁴⁴ The concern

³⁴12 U.S.C. §5565(3).

³⁵15 U.S.C. §1607(2).

³⁶15 U.S.C. §1607(3).

³⁷12 U.S.C. §4636(c)(2)

³⁸12 U.S.C. §1818(i)(2)(G).

³⁹Civil Money Penalties and the Use of the Civil Money Penalty Assessment Matrix, Board of Governors of the Federal Reserve System, June 3, 1991 (*available at* <https://www.federalreserve.gov/boarddocs/srlatters/1991/SR9113.HTM>).

⁴⁰15 U.S.C. §45(m)(1)(C).

⁴¹30 C.F.R. §100.3(a)(vi).

⁴²30 C.F.R. §100.3(h).

⁴³15 U.S.C. §2069(b).

⁴⁴49 C.F.R. §578.8(b)(7) Civil penalty factors under 49 U.S.C. Chapter 301. Interestingly, this is the only

for collateral consequences even extends to penalizing corporations for violating the nuclear non-proliferation treaty and the chemical weapons convention.⁴⁵

The Securities and Exchange Commission and the Commodity Futures Trading Commission, which oversee securities and derivatives markets, also take into account the violator's ability to pay. The Securities and Exchange Commission allows respondents to "present evidence of the respondent's ability to pay such penalty," and may consider "such evidence in determining whether such penalty is in the public interest. Such evidence may relate to the extent of such person's ability to continue in business."⁴⁶ The Commodity Futures Trading Commission "may settle claims . . . at less than the principal amount of the claim if . . . [t]he debtor shows an inability to pay the full amount within a reasonable period of time; . . . or [t]he Commission's enforcement policy would be served by settlement of the claim for less than the full amount."⁴⁷

Even departments that are not generally associated with enforcement actions have policies regarding the collateral consequences of the penalties they issue. The Department of Health and Human Services considers "[t]he financial condition of the covered entity or business associate, [including whether] the imposition of a civil money penalty would jeopardize the ability of the covered entity or business associate to continue to provide, or to pay for, health care;"⁴⁸ the Department of Defense takes into account "financial information relevant to a respondent's ability to pay [including] the value of respondent's cash and liquid assets and non-liquid assets, ability to borrow, net worth, liabilities, income, prior and anticipated profits, expected cash flow, and the respondent's ability to pay in installments over time;"⁴⁹ the Department of Homeland Security considers "the economic impact of the penalty on the violator;"⁵⁰ and the Department of Energy states that "[r]egarding the factor of ability of DOE contractors to pay the civil penalties, it is not DOE's intention that the economic impact of a civil penalty is such that it puts a DOE contractor out of business."⁵¹

Statutes also allow for officials concerned about collateral consequences to anticipate the effects of decreased competition on consumer welfare. For instance, when considering judgments with regard to monopolization and restraints on trade, the Department of Justice considers "the impact of entry of such judgment upon competition in the relevant market or markets [and] upon the public generally."⁵² And concerns about penalties adversely affecting competition are not restricted to the United States. The European Commission takes into account a corporation's "inability to pay" in competition proceedings,⁵³ and a

regulation that I have found that discusses the potential for deliberate undercapitalization of a corporation: "NHTSA may also consider whether the business has been deliberately undercapitalized."

⁴⁵22 U.S.C. §8142(a)(2)(D); 22 U.S.C. §8142(a)(2)(D).

⁴⁶15 U.S.C. §78u-2(d).

⁴⁷17 C.F.R. §143.5.

⁴⁸45 C.F.R. §160.408(d).

⁴⁹32 C.F.R. §767.25.

⁵⁰33 C.F.R. §159.321(c).

⁵¹10 C.F.R. Pt. 824, App. A (VII)(2)(d).

⁵²15 U.S.C. §16(e)(1).

⁵³2006 Guidelines on the Method of Setting Fines, paragraph 35, pursuant to Article 23(2)(a) of Regulation No 1/2003.

survey by the Organisation for Economic Co-operation and Development of competition authorities in twenty-one countries and the European Union finds that “[s]ome competition authorities believe that the fine cannot be as high as to put a company out of business,” and that “the inability to pay a fine is a factor that is generally considered in all jurisdictions in one way or another.”⁵⁴

This expansive legal basis shows that officials frequently have the authority to reduce liability when concerned about collateral consequences that might arise from full enforcement of the allowable fine. In the next section, I show that reductions frequently occur in practice.

4 Reductions in Corporate Liability in Practice

4.1 Empirical Evidence on Reductions of Corporate Criminal Penalties

To examine the impact that collateral consequences have had on reducing corporate liability, I collect data from the United States Sentencing Commission (USSC) on organizational defendants. The federal sentencing of organizations is guided by Chapter 8 of the United States Sentencing Guidelines (USSG), which establishes a uniform sentencing policy across departments. When originally enacted the guidelines were mandatory upon federal judges, but following the Supreme Court’s 2005 ruling in *United States v. Booker*⁵⁵ they now play only an advisory role. Judges are obligated to calculate a sentencing range as prescribed the guidelines, but are not otherwise required to adhere to the guidelines’ recommendations. Nevertheless, the sentencing guidelines also apply to plea agreements.⁵⁶ Importantly, the sentencing guidelines provide an avenue for a reduction of the fine based on a defendant’s inability to pay:

“The court may impose a fine below that otherwise required by [the guidelines] if the court finds that the organization is not able and, even with the use of a reasonable installment schedule, is not likely to become able to pay the minimum fine required by [the guidelines]. Provided, that the reduction under this subsection shall not be more than necessary to avoid substantially jeopardizing the continued viability of the organization.”⁵⁷

⁵⁴Semin Park, “Sanctions in Antitrust Cases.” (2016), OECD Competition Division (*available at* [https://one.oecd.org/document/DAF/COMP/GF\(2016\)6/en/pdf](https://one.oecd.org/document/DAF/COMP/GF(2016)6/en/pdf)).

⁵⁵543 U.S. 220 (2005).

⁵⁶The vast majority of cases conclude with a plea agreement rather than a trial. When a plea agreement includes a specific sentence, the court may accept the agreement if the sentence is within the applicable range (USSG §8B1.2(c)(1)); or if the sentence is outside the applicable guideline range for justifiable reasons (USSG §8B1.2(c)(2)).

⁵⁷USSG §8C3.3(b). The application note to the section clarifies that “[f]or purposes of this section, an organization is not able to pay the minimum fine if, even with an installment schedule under §8C3.2 (Payment of the Fine - Organizations), the payment of that fine would substantially jeopardize the continued existence of the organization.” What constitutes “substantially jeopardizing” is not explicitly stated.

Variable	Mean
Guilty Plea	0.913
Financial Status at Sentencing	
Solvent and Operating	0.552
Evidence of Substantial Distress	0.118
Defunct	0.273
Other	0.057
Base Fine	\$11.1 million
Fine Reduced Because Inability to Pay	0.397
Among Solvent Firms	0.206
Among Distressed Firms	0.551
Among Defunct Firms	0.694
Final Sentence Below Guideline Range*	0.102
Observations	1,839

*Notes: Because of data-availability issues, it is not possible in some observations to determine whether a sentence is below the guideline range, so the reported statistic accounts only for the 71% of observations for which this determination is possible.

Table 1: Summary Statistics on Corporate Sentencing

Using the USSC data, I analyze the sentences imposed on organizational offenders from 2002 through 2019. Because the focus of my analysis is on business firms, I drop non-profits and governmental organizations. I further drop observations with missing data on the firm’s financial condition, leaving a sample of 1,839 observations. Table 1 gives summary statistics for the data.

The variable of interest is whether particular fines were reduced, as authorized by USSG §8C3.3, because of a defendant’s perceived inability to pay all or a portion of the fine. At the time of sentencing, 55.2% of firms were “Solvent and Operating,” 11.8% of firms showed “Evidence of Substantial Distress,” and 27.3% of firms were defunct. Among these, 20.6% of solvent and operating firms received a reduction and 55.1% of distressed firms received a reduction.⁵⁸

Unfortunately, there is no clean way to estimate the extent to which the fines in this sample were reduced, or how significant a reduction was necessary to maintain the solvency of the firm.⁵⁹ Moreover, while it is not possible to determine from the data whether or

⁵⁸A further 69.4% of defunct firms received a reduction, however these firms are not the focus of this analysis.

⁵⁹A small minority of observations have a text field explaining the financial condition of the firm at the

not victims received adequate restitution, the cases studies in the next section show that reductions can be coupled with incomplete restitution.⁶⁰ In absolute numbers, 328 solvent and distressed firms had fines reduced between 2002 and 2019 because of a perceived inability to pay. This number provides support for the proposition that reductions for fear of collateral consequences are not an uncommon event, but are instead a regular component of the corporate-liability decision.⁶¹

This evidence, like other papers that have explored reductions in fines, is likely under-representative of the true frequency of reductions. Alexander et al. (1999, 2000) show that the the U.S.S.C. data is missing a significant number of observations, and like my results, other studies that rely on this data will likely have attenuated counts (Arlen, 2012).⁶² To account for this, Alexander and Cohen (2015) conduct an exhaustive effort to identify all NPAs, DPAs, and plea agreements entered into by public corporations between 1997 and 2011, and find 486 agreements. While not the focus of their study, the authors find that 21 firms had their criminal fines reduced. However, this too is likely an under-count, due to the difficulty of observing whether the fine was reduced. While some plea agreements explicitly reference the Sentencing Guidelines (USSG §8C3.3(b)), other agreements take into account ability to pay without explicitly referencing the guidelines. For example, Beazer Homes' settlement agreement did not include a reference to USSG §8C3.3(b), and is not included in Alexander and Cohen's count of firms that had fines reduced.⁶³ Moreover, while the number of firms identified by Alexander and Cohen is small, the total reduction in liability is not. The authors identified 13 firms for which fines were reduced because of inability to pay and where the authors were able to calculate the guideline ranges under the USSG. Summing these 13 firms, the total that was paid in liability was only \$1.08 billion, despite a guideline range of \$9.2 billion to \$10.8 billion. Therefore, even if the number of cases is small, the economic impact can be large.⁶⁴

While the focus of this paper is on public firms, the literature on corporate criminal liability emphasizes that most cases of corporate crime occur in closely-held, or owner-operated corporations (Arlen, 2012). While this is true, misconduct by public firms—and the corresponding liability—is generally far larger. Using the Sentencing Commission data, there were 889 closely-held firms that had fines of less than \$100,000, and 327 closely-held firms that had fines of less than \$1 million. In aggregate, these 1,216 firms represent 89%

time of sentencing. Examples include: “seizure of assets put company in jeopardy,” “lost revenue since instant offense,” “very few assets,” and “active but no longer viable.”

⁶⁰Of the solvent and distressed firms that received reductions, 212 paid \$0-\$99,999 in restitution, 81 paid \$100,000-\$1 million in restitution, and 35 paid more than \$1 million in restitution.

⁶¹The USSC data allow me to identify the employment level at 106 firms that were either “solvent” or “distressed” and had their fines reduced. Among these firms, the average number of employees was 206. However, while a large number of employees is likely to increase the concern of collateral consequences, concerns about employment are only one of the many factors considered by agencies when reducing liability, as I show in Section 3. In the next Section, I show that concerns in addition to employment are driving reductions in practice.

⁶²Arlen (2012) finds that between 34% and 56% of firms were unable to pay their fines between 2006 and 2009, but does not discuss the financial status of the firms at the time of sentencing.

⁶³Thank you to the authors for generously sharing their data with me.

⁶⁴In Section 4.2 I further analyze the data from Alexander and Cohen (2015) to show that most of these firms had market capitalization greater than the maximum guideline fine.

of the closely-held firms in the Sentencing Commission data, with fines totaling at most \$415 million.⁶⁵ Compare this to one public company, Alcoa (discussed in the next section), which alone paid \$384 million in liability.

That many criminal fines imposed on corporations are relatively small is further shown by Arlen (2012). Using sentencing commission data, Arlen shows that the mean fine imposed on organizations between 2006 and 2009 averaged \$8.7 million, with a *median* fine ranging between \$50 and \$119. That median fines are close to zero illustrates that criminal fines are highly skewed. Assuming that fines are positively correlated with the amount of harm from misconduct, the largest violations are far more significant than the majority of violations summed together.

Finally, the evidence on reductions from the Sentencing Commission data restricts attention to criminal fines. However, the vast majority of corporate fines are wholly or partially civil in nature. Moreover, the total monetary value of corporate civil fines far outstrips the total monetary value of all corporate criminal fines. According to data from the Corporate Research Project of Good Jobs First's Violation Tracker,⁶⁶ eighty-three of the largest one hundred fines imposed on corporations since 2000 are wholly or partially civil in nature. Aggregating across all violations, only 0.3% are criminal, with the rest being civil. The total monetary value of corporate civil fines is also far greater than corporate criminal fines. Approximately 80% of the monetary value of all fines at the federal level are civil, 13% are criminal, and 7% are a combination of civil and criminal. Given the size and scope of civil fines, coupled with the legal basis for reducing these fines presented in Section 3, the number of reductions in corporate liability is likely to be considerably higher than what is presented here. While I cannot present statistical evidence on reductions in civil fines, the case studies in the next section include reductions in both civil and criminal liability.

4.2 Case Studies on What Drives Reductions in Practice

The data on corporate criminal penalties illustrate that reductions on account of corporations' financial conditions are a regular part of the corporate-liability decision. However, the data do not indicate which factors shape the decision. In this section, I present case studies to explore how officials think about the potential for financial distress. Consider the following examples:

- In 2009, the Department of Justice settled charges of fraudulent lending practices with Beazer Homes. The settlement agreement states that “the imposition of additional criminal penalties or the requirement of additional payment at this time would jeopardize the solvency of Beazer and put at risk the employment of approximately 15,000 employees and full-time contractors not involved in the criminal wrongdoing.”⁶⁷

⁶⁵ $(889)(\$100,000) + (327)(\$1,000,000) = \$415$ million. The remaining 145 closely-held firms had fines of more than \$1 million, but the Sentencing Commission data do not allow me to put an upper bound on the fines imposed on these firms.

⁶⁶<https://www.goodjobsfirst.org/violation-tracker>

⁶⁷*U.S. v. Beazer Homes USA, Inc.* (Deferred Prosecution Agreement) W.D.N.C. (Jul. 1, 2009).

- In 2005, Hynix Semiconductor pled guilty to price-fixing. The settlement agreement states that even after having adjusted the fine downward for “substantial assistance,” the fine still “would have exceeded Defendant’s ability to pay.” The fine was therefore reduced further “due to the inability of the Defendant to make restitution to victims and pay a fine greater than that recommended without substantially jeopardizing its continued viability.”⁶⁸
- In 2014, Alcoa settled with the Department of Justice and the Securities and Exchange Commission following twenty years of bribery charges in violation of the Foreign Corrupt Practices Act. Prosecutors allowed for a final penalty significantly less than the amount Alcoa profited from its illegal activity, because a heftier fine would have “substantially jeopardize[d] Alcoa’s ability to compete . . . including, but not limited to, its ability to fund its sustaining and improving capital expenditures, its ability to invest in research and development, its ability to fund its pension obligations, and its ability to maintain necessary cash reserves to fund its operations and meet its liabilities.”⁶⁹
- In 2012, the European Commission reduced by 85% the fine imposed on Technicolor for anticompetitive behavior, from €275.5 million to €38.6 million, because of Technicolor’s perceived inability to pay the larger amount.⁷⁰
- In 2018, IAV GmbH pled guilty to working with Volkswagen to design, test, and implement software to cheat the U.S. emissions testing process. Prosecutors ultimately set the fine at \$35 million, an amount far below the USSG guideline range, following their determination that “the Defendant cannot and is not likely to become able (even on an installment schedule) to pay the minimum guideline fine.”⁷¹
- In 2003, the Olympic Pipeline Company entered into a consent decree to pay civil penalties arising from a pipeline explosion that killed three young boys, including an eighteen-year-old and two ten-year-olds. According to the decree: “[t]he United States has substantially reduced Olympic’s civil penalty and agreed to a payment schedule based on financial information that Olympic provided during settlement discussions demonstrating that Olympic lacks the economic ability to pay a larger penalty.”⁷²

In Appendix A, I explore these cases in considerable detail. For each case, I consider the fine imposed, the government’s reasons for reducing liability, and the corporation’s financial condition at the time. In this section, I discuss which aspects of the corporations’ finances appear to have driven the decisions to reduce liability.

⁶⁸ *U.S. v. Hynix Semiconductor Inc.* (Plea Agreement) N.D. Cal. Case No. CR 05-249 PJH.

⁶⁹ *U.S. v. Alcoa World Alumina LLC*, Case No. 2:14-cr-00007-DWA (W.D. Pa. 2014) January 9, 2014.

⁷⁰ Commission Decision of 5 December 2012 (Case COMP/39.437 — TV and computer monitor tubes), available at https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_39437.

⁷¹ *U.S. v. IAV GmbH.* (Plea Agreement) E.D. Mi. 16-CR-20394 (Dec. 18, 2018).

⁷² *U.S. v. Shell Pipeline Company LP fka, Equilon Pipeline Company LLC, and Olympic Pipeline Company.* (Consent Decree) W.D. Wa. (Civil Action No. CV-02-1178R).

A corporation's financial position depends largely on its assets and liabilities. An asset is any resource a corporation owns that is expected to generate future value. Assets may be tangible or intangible, and can include land, inventory, cash, investment securities, intellectual property, and goodwill. A liability is any debt that a corporation owes. Liabilities are usually represented as a sum of money, and can include loans, mortgages, and accounts payable. The corporation's *book value* is the net value of its assets minus its liabilities.⁷³ In theory, the book value is the corporation's total present-day value if all assets were liquidated and all liabilities were repaid.

All of the firms profiled above (or their parent companies) had book values well in excess of the fines imposed. At the lowest end, Beazer's book value was four times greater than its fine; at the highest end, Alcoa's book value exceeded its fine by a multiple of seventeen. These ratios indicate that each of the firms could have liquidated their assets and used the proceeds to pay fines considerably higher than those imposed. But even in the event of more substantial fines, liquidation would have been unnecessary to satisfy the penalties. Corporations with positive book values can generally borrow against their assets and future earnings. The amount that a firm can borrow and the interest rate imposed on that loan will generally depend in part on the firm's existing assets and liabilities. In the cases considered above, only Olympic Pipeline appears to have faced an imminent threat of insolvency.

Not all assets and liabilities are the same. Assets and liabilities are considered *current* if they are short-term. *Current assets* are assets that are easily convertible into cash within one year, including cash and its equivalents, marketable securities, and accounts receivable. Likewise, *current liabilities* are debts that are due within one year, including accounts payable, short-term debt, and maturing long-term debt. Net current assets represent the difference between current assets and current liabilities. If a corporation's net current assets are positive, the corporation can be expected to pay its financial obligations without raising external capital. If, however, the corporation has negative net current assets, it may need to raise capital in order to meet its debts.

Low or negative net current assets appear to drive prosecutors' fears of collateral consequences and the resultant reductions in corporate liability. Of the firms above, only one had net current assets significantly greater than their originally calculated fine. The others had low or even negative net current assets. Furthermore, all of the firms owed more in the next year than they had cash on hand. This shortfall likely lent support to arguments about their inability to meet their upcoming obligations, and led prosecutors to conclude that increased liabilities would "jeopardize the[ir] solvency"⁷⁴ or their "ability to maintain necessary cash reserves to fund [their] obligations and meet [their] liabilities."⁷⁵

Negative current assets, however, should not be confused with financial distress. For example, at the time of its settlement with California prosecutors, Hynix had only \$343 million cash on hand yet owed \$1.6 billion that was due to be paid within one year. One

⁷³Traditionally, book value does not include intangible assets. However, in today's practice these assets might be included.

⁷⁴*U.S. v. Beazer Homes USA, Inc.* (Deferred Prosecution Agreement) W.D.N.C. (Jul. 1, 2009).

⁷⁵*United States v. Alcoa World Alumina LLC*, Case No. 2:14-cr-00007-DWA (W.D. Pa. 2014) January 9, 2014.

might be excused, knowing only these two figures, for concluding that a greater fine could not be imposed without “substantially jeopardizing [Hynix’s] continued viability.”⁷⁶ But this oversimplified analysis would overlook that Hynix’s book value (total assets minus total liabilities) was \$3 billion. Therefore, while Hynix’s liquid assets were few, the firm was profitable and had considerable total assets. There is little reason to believe that Hynix could not have borrowed against its long-term assets to cover the immediate shortfall caused by the penalty.⁷⁷

Furthermore, concerns over sending these corporations further into financial distress overlook their market capitalization. *Market capitalization* is the total market value of the company’s outstanding shares of stock, and it captures the value of a corporation as perceived by the wider market. Each of the above firms’ market capitalization (or that of a parent firm) was greater than the fine imposed. For example, Beazer’s market capitalization of \$71.8 million was 40% higher than the fine imposed, Technicolor’s €415 million valuation was ten times greater than the fine imposed, Hynix’s market capitalization of \$2.1 billion was eleven times greater than the fine imposed, and Alcoa’s \$8 billion market capitalization was a full twenty-one times greater than the fine imposed by prosecutors concerned for their financial well-being. With market capitalization comes the ability to raise equity, lending support for the argument, expanded upon in 5, that officials could instead have mandated these firms pay their liabilities through equity issuances, mitigating the need for reductions.

That market capitalization is generally more than sufficient to pay liability is supported beyond these case studies. Alexander and Cohen (2015) identified 20 public firms in that had their liability reduced because of concerns about their inability to pay. Using the authors’ data, I have identified the market capitalization at the time liability was imposed for 14 of the firms.⁷⁸ Of these firms, the fine as a percentage of the corporation’s market capitalization ranged from a high of 31% to a low of less than 1%, meaning that each corporation had the capacity to pay the fine imposed through an equity issuance. Moreover, restricting attention to the 13 firms for which the authors were able to calculate the maximum guideline range, ten of those firms had a market capitalization greater than the maximum guideline range, indicating that these firms could have paid substantially more in liability through equity issuances. Taken together the difference between the fine imposed and the maximum guideline fine for these firms was \$8.7 billion.

Officials concerned about potential collateral consequences often allow for firms to satisfy their penalties in installments over time, to reduce the total burden on the firm. In most such cases, the settlement agreement will fix a payment schedule. However, because none of the installment settlements that I profile anticipated that the offending corporation would owe interest on its outstanding balances, these plans were even less costly to

⁷⁶ *U.S. v. Hynix Semiconductor Inc.* (Plea Agreement) N.D. Cal. Case No. CR 05-249 PJH.

⁷⁷ Compare Hynix’s position, for example, to a reckless driver protesting that they cannot afford to pay a speeding ticket because they have no income, no money in the bank, and a \$10,000 credit card bill that comes due next month. Now suppose that the driver is voluntarily on sabbatical from a high-paying job and owns a \$5 million home outright. Regardless their bank account, income, and credit bill, it’s plain that the driver can comfortably afford their speeding ticket, even if it requires accruing additional interest on a credit card until they are back at work.

⁷⁸ Of the remaining six firms, four were insolvent or in the midst of bankruptcy proceedings, the other two firms were solvent but I could not find their market capitalization at the time that fines were imposed.

the defendants than their pure dollar amounts would suggest. And even without charging interest, delayed payments are generally less expensive to firms than immediate payments, because firms can either put their money to productive use in the short-term or, in some cases, reduce the amount they need to borrow at any one time to afford the penalty. For example, using a discounting methodology typically employed by agencies (Atkinson, 2020b), I estimate that delayed liability allowed Hynix effectively to pay only \$143.8 million of its \$185 million fine.⁷⁹

While a payment schedule reduces a firm’s financial burden, it does not eliminate it. Under the terms of its settlement agreement Hynix owed \$35 million per year for five years, a fairly manageable liability compared to the firm’s large asset base and positive revenues. However, for other firms a recurring liability could lead to financial distress. At the time of its settlement agreement, Beazer Homes was in a much more precarious financial position than Hynix had been. To avoid distress, Beazer’s 2009 settlement agreement with the Department of Justice required that the company make restitution payments equal to 4% of its adjusted EBITDA until it had paid \$48 million *or* through 2016.⁸⁰ This framework was so effective at not adding to Beazer’s financial distress that, due to Beazer’s low EBITDA over the lifetime of the agreement, the firm only ended up paying \$28.1 million in restitution to its victims.⁸¹

A careful examination of the case studies shows that, while fears of collateral consequences are sometimes well-founded, in many other cases these fears appear to be misplaced, due to misconceptions of corporate finance. Regulators and prosecutors who are unsure whether imposing liability will lead to collateral consequences may deem it safer to reduce liability and not risk disastrous consequences. In a 2012 speech, the head of DOJ’s Criminal Division, Assistant Attorney General Lanny Breuer, said of the difficult decision:

“To be clear, the decision of whether to indict a corporation, defer prosecution, or decline altogether is not one that I, or anyone in the Criminal Division, take lightly. We are frequently on the receiving end of presentations from defense counsel, CEOs, and economists who argue that the collateral consequences of an indictment would be devastating for their client. In my conference room, over the years, I have heard sober predictions that a company or bank might fail if we indict, that innocent employees could lose their jobs, that entire industries may be affected, and even that global markets will feel the effects. Sometimes—though, let me stress, not always—these presentations are compelling. In reaching every charging decision, we must take into account the effect of an indictment on innocent employees and shareholders, just as we must take into account the nature of the crimes committed and the pervasiveness of the misconduct. I personally feel that it’s my duty to consider whether

⁷⁹See Appendix A.

⁸⁰EBITDA (earnings before interest, tax, depreciation and amortization) is a common measure of a firm’s financial performance.

⁸¹Anticipating this possibility of underpayment, the *Justice Manual* states that “[t]he United States Attorney should not accept a percentage of net profits in settlement or partial settlement of a claim. Such arrangements are speculative at best; policing is difficult; and there are too many ways in which the affairs of the debtor concern can be manipulated to avoid, minimize, or postpone realization of a net profit.” 4-3.210.

individual employees with no responsibility for, or knowledge of, misconduct committed by others in the same company are going to lose their livelihood if we indict the corporation. In large multi-national companies, the jobs of tens of thousands of employees can be at stake. And, in some cases, the health of an industry or the markets are a real factor. Those are the kinds of considerations in white collar crime cases that literally keep me up at night, and which must play a role in responsible enforcement.”⁸²

There can be real costs to imposing monetary liability on corporations. When reducing fines to preempt a larger judgment’s collateral consequences, however, public officials generally make two conceptual failures that undermine the laudable goal of protecting third parties.

The first conceptual failure is a misunderstanding of corporate governance. Officials too often treat shareholders as another set of victims who need to be protected from a firm’s distress or insolvency.⁸³ But the American system of corporate governance is firmly rooted in the idea that firms are run in the interest of shareholders. Shareholders are compensated for the risks that they bear, and shareholders who profit from malfeasance should not be protected from the liability arising from that malfeasance. When corporate liability is reduced to protect shareholders, there is little incentive for shareholders, directors, and managers not to engage in malfeasance. In our shareholder-focused system of corporate governance, we as society should *want* shareholders to bear the costs. However, the many negative consequences of financial distress on innocent third parties means that imposing standard monetary liability on a corporation may lead to costs far beyond shareholders.

The second conceptual failure is a misunderstanding of corporate finance. Assistant Attorney General Breuer’s remarks, the Holder Memorandum, and the many statutes addressed in Section 3 all implicitly assume that corporate liability can result in collateral consequences. But officials are failing to consider carefully the mechanisms through which collateral consequences arise—or the circumstances in which they don’t. As a result, officials mistakenly reduce liability in cases where collateral consequences are unlikely to occur. However, because of the complexity of many corporations’ finances, it may be difficult for officials to discern the cases in which collateral consequences are most likely to arise and to adjust liability accordingly. In the next section, I make the corporate-finance framework more explicit, and show how concerns about financial distress and the associated collateral consequences can be avoided altogether.

⁸²News Release, Assistant Attorney General Breuer Speaks at the New York City Bar Association (Sept. 13, 2012), *available at* <https://www.justice.gov/opa/speech/assistant-attorney-general-lanny-breuer-speaks-new-york-city-bar-association>.

⁸³However, with this being said, of all of the statutes, regulations, and policies analyzed in Section 3, the Justice Manual is the only policy that explicitly states that officials should take shareholder interests into account.

5 Eliminating Collateral Consequences by Mandating Equity Issuances

The previous sections paint a bleak picture of attempts to curb corporate malfeasance. Employees, consumers, communities, and society more broadly may suffer from imposed liability, even though there is little that most could have done to prevent the harms being remedied. Anticipating these costs, officials can and do reduce liability to limit collateral consequences, but a pervasive misunderstanding of how reductions ought to be applied allows for corporations to engage in malfeasance with minimal consequence.

These problems can generally be solved by requiring that corporations pay liability by issuing new equity. By eliminating the opportunity for shareholders to issue new debt or to offload assets in order to satisfy their judgments, mandatory equity issuances ensure that liability does not result in financial distress. Mandatory equity issuances thereby eliminate the fundamental problems raised in Section 2, and allow officials to impose significantly higher fines, calculated to accomplish the twin aims of corporate deterrence and victim compensation, without fear of collateral consequences.

The amount of capital that a corporation can raise through an equity issuance is determined by its market capitalization. In principle, a corporation can raise 100% of its market capitalization by completely diluting its current shareholders. However, for the cases that I present in Section 2, firms would not have needed to dilute existing shareholders to such an extent in order to satisfy the judgments against them. Beazer Homes' \$50 million settlement was 70% of the firm's market capitalization at the time,⁸⁴ and an equity issuance would have avoided prosecutors' fears that the settlement would "put at risk the employment of approximately 15,000 employees and full-time contractors not involved in the criminal wrongdoing."⁸⁵ Hynix's \$185 million settlement amounted to only 8.6% of its market capitalization, and an equity issuance could have been mandated without "substantially jeopardizing [the firm's] continued viability" or resulting in its "inability . . . to make restitution to victims."⁸⁶ Similarly, Alcoa's \$384 million settlement represented only 4.8% of its \$8 billion market capitalization, and an equity issuance could have raised significantly more than the settlement amount without "substantially jeopardiz[ing] Alcoa's ability to compete" or threatening "its ability to fund its pension obligations."⁸⁷

The potential to limit collateral consequences through equity issuances was first recognized by Coffee (1980). Why then, in the forty years since Coffee's proposal, have mandatory equity issuances not become a central part of the corporate-liability decision? The preceding sections show that, while a theoretical concern in 1980, collateral consequences have become central to the corporate liability decision today. However, because of this, Coffee did not carefully delve into the relationship between corporate liability and capital structure, which limits the applicability of his analysis. Most importantly, while Coffee

⁸⁴In fact, as I discuss in Appendix A, Beazer paid only a fraction of this total. Moreover, this estimate of the firm's market capitalization likely took into account the liability anticipated of the settlement. Beazer's market capitalization increased following the announcement of liability and tripled within three months.

⁸⁵*U.S. v. Beazer Homes USA, Inc.* (Deferred Prosecution Agreement) W.D.N.C. (Jul. 1, 2009).

⁸⁶*U.S. v. Hynix Semiconductor Inc.* (Plea Agreement) N.D. Cal. Case No. CR 05-249 PJH.

⁸⁷*U.S. v. Alcoa World Alumina LLC*, Case No. 2:14-cr-00007-DWA (W.D. Pa. 2014) January 9, 2014.

effectively makes the case that equity issuances can limit collateral consequences, his paper also leaves open the question of whether equity issuances must be *mandatory*. Coffee suggests that an equity issuance will benefit all parties, including shareholders, because the equity issuance will decrease the probability of insolvency.⁸⁸

However, while an equity issuance will reduce the probability of bankruptcy, equity issuances are costly for shareholders. Indeed, if it were the case that equity issuances benefit shareholders, mandatory equity issuances would be superfluous because firms would choose on their own accord to issue equity to satisfy liabilities. In this section, I show that shareholders will resist equity issuances in favor of paying through asset sales and debt issuances. This insight is critical, because it makes clear that equity issuances must be mandatory. On the way, I also firmly ground the proposal in the modern theory of corporate finance and accounting.

In this section I make the case for the substantial advantages and simple implementation of mandatory equity issuances. In Section 5.1, I develop a theoretical framework to understand how firms will pay liability. In particular, I show that equity issuances achieve the best outcome for society, but that corporations will not issue equity unless it is mandated. In Section 5.2, I show that equity issuances are financially simple to implement, and cannot be undone by shareholders. In Section 5.3, I argue that mandatory equity issuances can largely be implemented under current law. Finally, while my primary focus is on publicly traded corporations, I show how officials can avoid collateral consequences when imposing liability on private companies in Section 5.4.

5.1 Why Equity Issuances Must Be Mandatory

5.1.1 Background on Capital Structure and Corporate Finance

Capital structure is the extent to which a corporation's funding relies on borrowing rather than on funding from equity shareholders. Corporations that rely heavily on debt for funding assume magnified risk. Because a leveraged (indebted) firm faces specific debt payments due at specific times, investments that turn sour can lead to financial distress and insolvency. Conversely, because debt payments are fixed, shareholders in leveraged firms capture more of the gains from risky investments that turn out profitable.

An indebted corporation is comparable to a homebuyer who makes a one-time down payment and finances the remainder of their purchase through a mortgage. The down payment represents the buyer's initial equity in the home, and the mortgage is debt to be repaid. With a small down payment as compared to the value of the home, the buyer will face a high monthly mortgage payment. In that case, even a small decline in the homeowner's monthly income, or increase in expenses, might lead to the homeowner missing payments or defaulting on the mortgage. Highly leveraged corporations, that have borrowed significantly in comparison to their assets, are at a similar risk of becoming distressed.

⁸⁸“The costs of deterrence are still, of course, visited upon the stockholder. But, even as to this class, there is a difference between the corporation being fined \$50,000,000 in cash and the dilutive issuance of \$50,000,000 in additional common stock. The difference is basically that the latter penalty does not raise the risk of bankruptcy . . . [t]hus even as to the stockholders, there is a marginal degree of superiority associated with fines levied in securities over fines levied in cash” (Coffee, 1980, p. 16).

However, just as a leveraged homebuyer profits from increases in property values more than an unleveraged homeowner,⁸⁹ corporate shareholders can see higher returns through increased borrowing. Higher debt creates higher risk: both the potential profits and the likelihood of failure increase as a corporation becomes more highly leveraged.

How then should a corporation be funded? The foundational insight about corporate funding comes from the analysis of Modigliani and Miller (1958). Their result is based on a basic conservation principle: a corporation’s assets produce cash flows, and simply changing how those cash flows are paid out to investors does not *in and of itself* affect the corporation’s value. In other words, changing the proportion of a corporation that is funded through debt versus equity does not by itself change the value of the corporation. Therefore, if the corporation’s value rises or falls with changes to its funding structure, it must be because of some exogenous friction caused by holding debt or equity. For example, corporations in most countries can deduct interest payments on existing debts, and thereby lower their tax burden by using debt rather than equity to fund their investments. External factors, such as local tax codes, therefore play a substantial role in determining how a corporation would best structure its funding.

While borrowing can carry exogenous advantages (Myers and Majluf, 1984; Hart and Moore, 1998) as compared to funding a corporation through equity, debt can also result in frictions that lower a corporation’s value. For example, because a highly leveraged corporation risks failure, creditors will factor a potential bankruptcy’s deadweight costs, as discussed in Section 2, into the terms of their loans.

Moreover, relying on debt creates an unavoidable conflict between creditors and shareholders. This *debt-equity conflict* arises from the distinct nature of debt claims as compared to equity claims. The simplest form of debt is a fixed claim on a predetermined amount of the firm’s assets. Equity holders receive any profits in excess of the debt claim, and are therefore referred to as the *residual claimants*. In this way, the limited liability of the corporate form ensures that both creditors and shareholders can lose no more than they have each invested in the firm. However, while creditors’ fixed claims cap their potential return, the shareholders’ upside is potentially unlimited. The resulting difference in incentives might play out in many ways: shareholders may prefer to pay themselves dividends by liquidating firm assets (unauthorized distributions); invest in higher-risk assets (asset substitution); fund negative-net-present-value projects (overinvestment); forgo projects that benefit creditors (underinvestment); or issue higher-priority debt (claim dilution). Creditors anticipate these ways in which shareholders can expropriate wealth, and respond by insisting on covenants to restrict particular corporate actions. Even with covenants in place, however, once a corporation incurs debt there remains a fundamental conflict between the interests of shareholders and their creditors that creates externalities for society more broadly.⁹⁰

⁸⁹For example, consider a homeowner that owns a \$500,000 home outright. If the house appreciates to \$550,000, the homeowner has made a 10% return ($\frac{\$550,000 - \$500,000}{\$500,000} = 10\%$). If, however, the homeowner has only paid \$50,000 in a down payment and the remaining \$450,000 was borrowed from a bank, the homeowner’s return from the appreciation is 100% ($\frac{\$550,000 - \$500,000}{\$50,000} = 100\%$). See Admati and Hellwig (2014) and Admati (2014) for discussions of the effect of leverage in the banking industry on the economy as a whole.

⁹⁰Moreover, there has been a rise in “covenant-light” loans Demiroglu and James (2010); Mellow (2017),

The debt-equity conflict can benefit both shareholders and creditors, however, when prosecutors’ concerns for collateral consequences lead to reductions in corporate liability. In the next section, I show that shareholders will pay liability in a manner that imposes costs on creditors and creates broader collateral consequences. However, the very threat of this conflict leads officials to reduce liability, so the realized conflict between shareholders and creditors is reduced. This in turn means that shareholders and creditors do not want to eliminate the debt-equity conflict as it applies to corporate liability.⁹¹

5.1.2 Shareholders’ Preferences to Pay Liability Through Debt Issuances and Asset Sales

How a corporation chooses to pay liability can have broad effects on shareholders, creditors, employees, and society more broadly. The managers who make this decision, however, answer to only one constituency: the consensus view of corporate governance is that managers should manage the corporation in the best interest of its shareholders (Hansmann and Kraakman, 2001), and that the corporation’s share price should serve as the primary metric of their success. Creditors, employees, and society more broadly therefore play a diminished role in a corporation’s decision-making process about how to pay liability.

When faced with a liability that requires a firm to quickly raise substantial sums, firms generally have three broad options: equity financing, debt financing, and asset sales (which includes using cash on hand).⁹² Figure 1 shows the ways in which the firm can pay liability. Panel (A) represents the firm’s initial balance sheet, and demonstrates the fundamental accounting identity that $\text{Assets} = \text{Liabilities} + \text{Equity}$. The red box labeled “liability” represents a newly imposed liability that the firm must pay. The remaining three panels represent the firm’s balance sheet after opting for each of the three possible ways of financing liability.⁹³ Each option has a unique effect on shareholders, creditors, and employees. In this section, I explore this choice and show that firms will generally choose to issue debt or sell assets to pay liability.

A firm’s first option to pay liability, as represented in Panel (B), is to issue equity. In a *seasoned equity offering*, a corporation issues stock subsequent to its initial public offering. When a company raises money by issuing new shares, the total number of outstanding shares increases, thereby diluting the voting rights of existing shareholders. However, the equity issuance will not in and of itself reduce the value of outstanding equity. The influx of capital associated with selling new stock increases both the number of shareholders and the total value of the firm, and in the absence of frictions, these two effects balance one another out, so that the value of each individual share remains unchanged.⁹⁴

with Economist (2019) reporting that these loans make up around 85% of new issuances. Research further shows that shareholders frequently take steps to weaken covenants at creditors’ expense (Ivashina and Vallee, 2019; Badawi and de Fontenay, 2019).

⁹¹In the language of game theory, imposing large costs on creditors is *off the equilibrium path*. I show this more formally in Atkinson (2020a).

⁹²Note that liabilities due immediately cannot be paid through future retained earnings.

⁹³In this diagram, the debt issuance is assumed to be *pari passu* with existing debt. I consider junior, *pari passu*, and senior debt issuances below.

⁹⁴ Consider the following example for illustration. A firm with a market capitalization of \$100,000 has

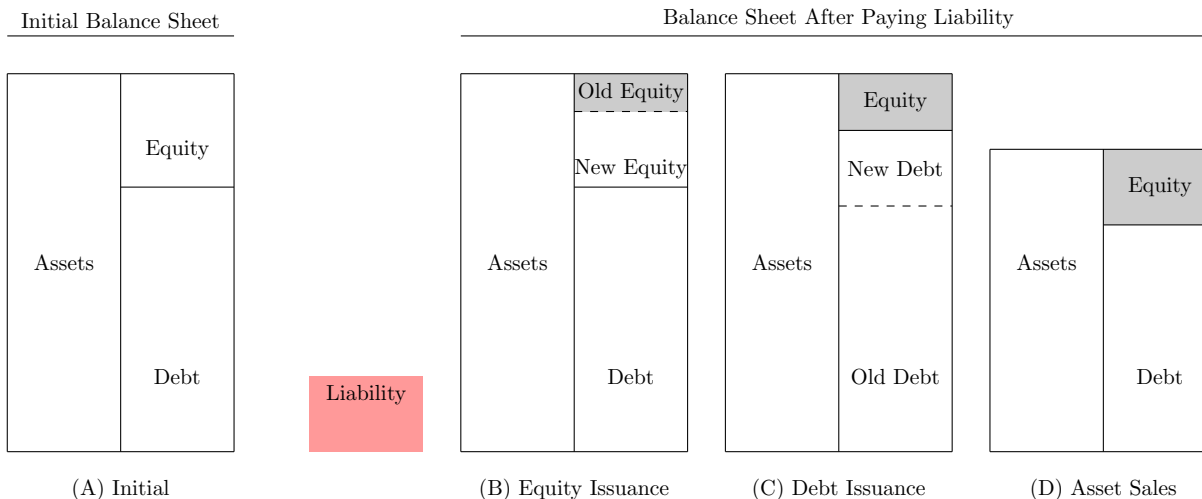


Figure 1: Ways to Pay Liability. The firm may raise money to pay liability through an equity issuance, a debt issuance, or asset sales.

A firm that issues equity to pay liability, however, does not retain the capital that is raised; this money is used to satisfy government penalties. Therefore the equity issuance has the effect of diluting both the voting rights of existing shareholders *and* the value of those shares. For existing shareholders, and for the directors tasked with furthering their interests, it represents a particularly costly option. In order to issue equity to pay liability, the firm must offer an attractive investment to prospective investors: the offering is bound to reflect that new shareholders will be subordinate to creditors and paid proportionately with preexisting shareholders, thereby deflating the price at which new equity can be issued. Because the value of the firm remains unchanged after an equity issuance, the liability is effectively paid for entirely by the existing shareholders, who witness decreases in the market value of their stock holdings.

A simple numerical example can help illustrate why shareholders will resist issuing equity. Suppose that a firm owns an asset that can be expected to return either \$80 or \$120, each with a 50% probability. The asset's expected value to the firm is therefore \$100. Suppose now that the firm has an outstanding debt with a face value of \$50. Because the firm's returns are always greater than \$50, creditors are always paid back in full, so the market value of debt is \$50. The value of equity in the firm will vary on whether the asset returns its high or low estimate. If the asset returns are \$80, shareholders receive \$30 after the debt is paid, and if returns are \$120, shareholders receive \$70 after the debt is paid. Therefore, the market value of equity is \$50, the average of two equally likely possibilities

1,000 shares outstanding. The value of each share is therefore \$100 (\$100,000/1,000). Now suppose that the firm issues an additional 1,000 shares at \$100 each to raise an additional \$100,000. The company will now have 2,000 shares outstanding. Original shareholders see their vote diluted by half: before the equity issuance, a shareholder who held 200 shares controlled 20% of the company's vote (200/1,000), but after the issuance their vote has been diluted to 10% of the outstanding shares (200/2,000). The equity issuance does not, however, dilute the *value* of the existing shares. The firm now has a market capitalization of \$200,000, with 2,000 shares outstanding. Every share retains its original value of \$100 (\$200,000/2,000).

$((\$30+\$70)/2)$.

Now suppose that the firm has been found liable of corporate malfeasance in the amount of \$45, and in order to raise the capital to immediately pay this \$45 liability the firm chooses to issue equity. Since an equity issuance leaves the total value of the firm's equity unchanged at \$50, to obtain a \$45 buy-in from new equity stakeholders will require that the firm issue shares totaling 90% of its total outstanding equity ($\$45/\50). Original shareholders are diluted to holding only 10% of outstanding equity, and the value of the old equity drops to \$5. Because issuing equity has no effect on the firm's solvency, the value of debt is unchanged at \$50, and creditors can expect to receive the same payoffs. As before, the firm remains solvent regardless of whether its asset returns \$80 or \$120. Table 2 summarizes the effects in this example of paying liability with an equity issuance (as well as the effects of other payment methods that I analyze over the coming pages). In sum, an equity issuance has no effect on employees, no effect on creditors, and a negative effect on shareholders.

Corporations will generally resist issuing equity to pay fines because, as the previous example demonstrates, doing so imposes the full incidence of liability on existing shareholders. Even outside the context of liability, corporations are generally reluctant to issue further equity for a variety of related reasons. For example, many investors do not properly understand share dilution and may penalize management for issuing new shares. Managers themselves may resist equity issuances because of their effect on financial ratios, such as earnings per share, return on equity, return on assets, or stock price, which are commonly cited in executive pay plans to assess managerial performance. In other cases, information asymmetries (Myers and Majluf, 1984) and direct flotation costs (e.g. legal and registration fees) can make equity issuances costly (although these costs are ameliorated through mandatory equity issuances (see Section 5.2)). Most importantly, because firms prioritize shareholders' interests over those of creditors, employees, and society more broadly, firms will not issue equity when such issuances unnecessarily decrease shareholder value, even if other options to pay liability are more socially desirable.

These factors help explain why the majority of publicly listed corporations *never* publicly issue equity subsequent to their initial public offerings (Eckbo et al., 2007). Instead, straight debt offerings occur approximately three times as frequently as seasoned equity offerings, and the average debt issuance is approximately three times the size of the average seasoned equity offering. (Eckbo et al., 2007).

The firm's second option to pay its newly imposed liability, as represented in Panel (C), is to issue debt. With a debt issuance, a firm borrows money from a bank or other investors and commits to pay that money back to creditors before shareholders are paid for returns on assets. Unlike shareholders who enjoy unlimited potential upside, creditors have a fixed claim on the firm's assets.

Most corporations already carry debt. When new debt is issued, the corporation will generally have to prioritize the debt against several other outstanding debt issuances. That is, a relative priority structure will determine the order in which the new and outstanding debt claims are paid. If the new debt issuance is junior to the existing debt, the new creditors will be paid only after the existing creditors are paid. If the new debt issuance is senior to the existing debt, the new creditors will be paid before the existing creditors. This ordering is of particular importance if the corporation finds itself financially unable to

Method of Payment	Initial Equity (Market Value)	Initial Debt (Market Value)	New Investors (Market Value)	Potentially Insolvent?
Before Liability	\$50	\$50	-	No
Equity	\$5	\$50	\$45	No
Junior Debt	\$5	\$50	\$45	Yes
Pari Passu Debt	\$10	\$45	\$45	Yes
Senior Debt	\$12.50	\$42.50	\$45	Yes
Asset Sales (homogeneous)	\$8	\$47	-	Yes
Asset Sales (cash)	\$12.50	\$42.50	-	Yes

Table 2: Investor and Social Welfare From Numerical Example

satisfy all of its debts simultaneously. If, in that situation, the new debt issuance obtains the same priority as the existing debt, or *pari passu*, then the old and new creditors will be paid *pro rata* in accordance with the amount of the creditors' claims.

A combination of covenant, convention, and market forces will influence how a corporation opts to prioritize new debt issuances relative to existing debts, and this choice will have implications for all corporate stakeholders. In general, shareholders will prefer that the firm issues new debt that is senior to existing debt, because issuing more junior debt requires acquiescing to costly interest rates that compensate junior creditors for their increased risk.⁹⁵ Existing creditors, meanwhile, will prefer that new debt is made junior to existing debt, so as not to dilute their priority. A junior debt issuance will not dilute existing creditors, a *pari passu* debt issuance will result in moderate dilution, and a senior issuance will result in heavy dilution. Regardless of the new debt issuance's seniority, shareholders will only be paid after all creditors are paid in full.

To understand how these options differ in practice, consider again the example of a firm with outstanding debt of \$50, a newly imposed liability in the amount of \$45, and an asset that can be expected to return either \$80 or \$120, each with a probability of 50%. If the firm raises the capital to pay its \$45 liability through a junior debt issuance, the new creditors will face a relatively high degree of risk and require compensation in the form of a higher interest rate. Presuming the firm's asset returns its low estimate of \$80, there will be only \$30 left to distribute to junior creditors after senior creditors are returned their \$50. Understanding that possibility, junior creditors will require more substantial compensation in the event that the asset returns \$120. In order to attract investors and to raise \$45, the firm must issue junior debt with a face value of \$60. New creditors will receive \$30 when asset returns are low and \$60 when asset returns are high, for an expected value of \$45. Existing creditors are returned their investment no matter the performance of the firm's

⁹⁵New creditors will be indifferent to the priority of their debt, provided they are risk-neutral. The more junior their debt, the more risk investors bear that their investment will not be repaid. As compensation, more junior debts require higher interest rates. The ratio of the debt's market value (the amount funded to the firm) to its face value (the amount the firm promises to pay back) at the time of sale is a simple way of gauging the interest rate. For example, in order to raise \$100, a corporation may issue senior debt with a face value of \$110 and a maturity of one year: a 10% annual interest rate. If the firm issues debt that is *pari passu* with existing debt, it may need to guarantee a face value of \$120 in order to raise \$100 (a 20% interest rate). If the firm issues junior debt, it may need to guarantee a face value of \$130 in order to raise \$100 (a 30% interest rate). The increasing interest rate as debt becomes more junior captures the increase in risk. Regardless the type of debt issued, the expected value to a risk-neutral investor is the same.

asset, so the value of their claim remains unchanged at \$50. Equity is now valued at \$5, \$45 less than its original \$50 value. In the 50% of scenarios where the firm's asset returns its low estimate, the firm cannot meet all of its debt obligations and becomes insolvent.

Next, consider paying liability with a *pari passu* debt issuance, where new creditors are offered the same priority as existing creditors. Presuming the firm's asset returns its low estimate of \$80, the firm will not be able to pay its \$50 debt to existing creditors and its \$45 debt to new creditors, so it will default. Understanding that possibility, new creditors will require more substantial compensation in the event that the asset returns \$120. In order to attract investors and to raise \$45, the firm must issue *pari passu* debt with a face value of \$50. New and existing creditors alike will be paid equally and receive \$40 when asset returns are low, and will each receive the full \$50 face value when asset returns are \$120, for an expected value of \$45. A *pari passu* debt issuance therefore dilutes existing creditors. Shareholders capture this dilution, and the equity is now valued at \$10, \$40 less than its original \$50 value. In the 50% of scenarios where the firm's asset returns its low estimate, the firm cannot meet all of its debt obligations and becomes insolvent.

Finally, consider a senior debt issuance, where new creditors are offered a higher priority than existing creditors. They can therefore lend \$45 to the firm with no risk, because they will be paid back fully regardless of whether the firm's asset returns its high or low estimate. However, the firm's existing creditors have now been severely diluted. Presuming the firm's asset returns its low estimate of \$80, the firm will afford its \$45 debt to new creditors but will not be able to pay its remaining \$50 debt to existing creditors, who will receive only \$35. In the event that the asset returns its high estimate of \$120, the firm can satisfy all of its creditors. Therefore the expected value of existing debt drops to \$42.50 $((\$35 + \$50)/2)$. Shareholders capture this dilution, and equity is now valued at \$12.50, \$37.50 less than its original \$50 value. In the 50% of scenarios where the firm's asset returns its low estimate, the firm cannot meet all of its debt obligations and becomes insolvent.

Figure 2 represents graphically the effects of a debt issuance's priority on shareholders and existing creditors. Panel (A) represents the firm's initial balance sheet, while the remaining three diagrams represent the firm's balance sheet after paying liability through a junior, *pari passu*, or senior debt issuance. Note that the total value of the corporation is not impacted by the type of debt issued. Furthermore, the market value of the new debt is equal in all three cases. What differs between the three diagrams, however, are the values of equity and existing debt, as represented by the right-hand side of each balance sheet. Debt claims toward the bottom of the diagram are of highest priority and are paid first. Only after a claim is paid in full do revenues begin to accrue to the next level up.

As Figure 2 shows, the more senior a new debt is made, the more that the value of equity will increase and the value of existing debt will decrease. This divergence arises because of the possibility of the firm's insolvency. When liability is sufficiently large, the firm will be unable to attract new investors and will as a result default on its existing debts. The increased risk of insolvency that accompanies more highly-leveraged firms also imposes costs on employees, creditors, and society more broadly, each of whom are at risk of suffering collateral consequences in the event that the firm is unable to continue its operations in full. When a firm chooses to pay newly imposed liabilities by issuing new debt, a more junior debt issuance will result in a more leveraged firm, putting at greater

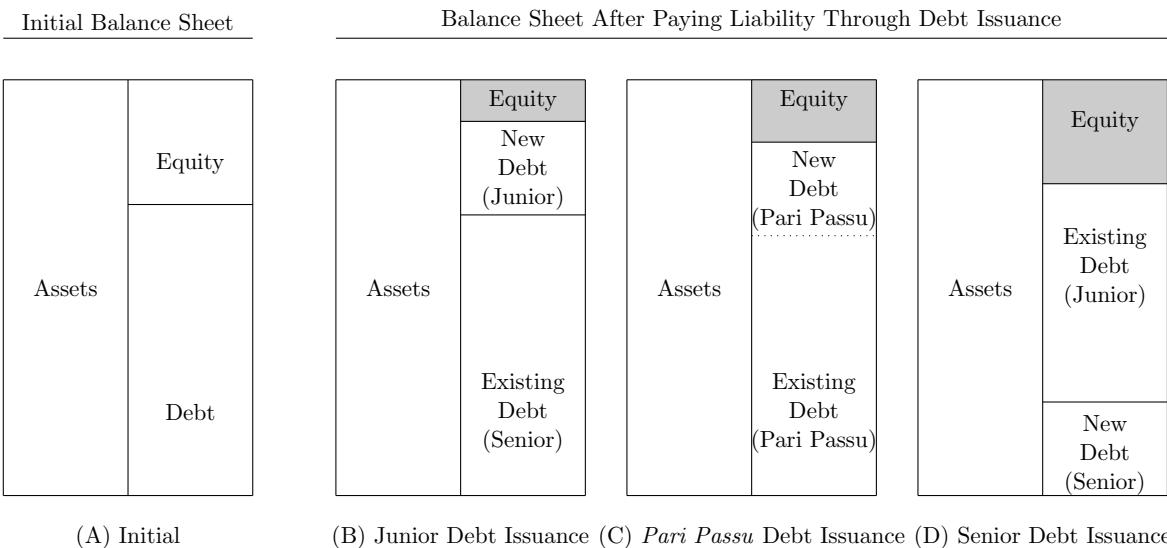


Figure 2: Types of Debt Issuances. The firm may raise debt that is junior, pari passu, or senior to existing debt.

risk a default that causes collateral consequences borne by guiltless parties. In sum, a debt issuance has a negative effect on employees, a negative effect on creditors, and a negative effect on shareholders. Yet the negative effect of debt issuances is preferred by shareholders to the negative effect of equity issuances.

A firm’s next option to pay newly imposed liability is through asset sales (including using cash on hand). While corporations’ funding decisions are generally framed around the choice between issuing debt or issuing equity, firms in aggregate raise as much from asset sales as they do from equity *plus* debt issuances (Eckbo and Kisser, 2015). Because asset sales shift costs away from shareholders and onto creditors, corporations will frequently sell assets to pay liability.

Shareholders’ preferences for (and creditors’ preference against) asset sales stem from the uncertain nature of firm earnings. Because creditors hold a fixed claim on the firm’s assets, they prefer that a firm take actions that maximize the probability that they are paid back. Creditors do not gain from any firm profits beyond their fixed claim. In contrast, as the residual claimants to the firm’s income, shareholders are interested in maximizing the expected value of their claims, even if that maximization comes at the expense of creditors. These competing claims lead to divergent preferences about the firm’s leverage and risk tolerance after debt is in place: creditors prefer lower leverage and lower risk, while shareholders prefer higher leverage and higher risk.

Recall our hypothetical firm with outstanding debt of \$50, a liability payment of \$45, and an asset that returns either \$80 or \$120, each with a probability of 50%. Suppose that the firm’s asset is homogeneous in the sense that the firm can sell $x\%$ of the asset and reduce its realized return by an equal $x\%$. Because the firm was initially valued at \$100, it must sell 45% of its assets in order to raise \$45. The asset returns are now reduced by 45%, regardless whether it returns its high or low estimate. In this case, the asset will now return either \$44 or \$66 (55% of \$80 or \$120), each with equal probability. In the event

that the asset returns its high estimate, the firm is able to pay its creditors back in full. In the event that the asset returns its low estimate, creditors will receive only \$44 of their \$50 claim and the firm will default. The expected value of debt therefore drops to \$47 $((\$50+\$44)/2)$. Shareholders capture this loss, and the value of equity following the asset sale is \$8. In the 50% of scenarios where the firm's asset returns its low estimate, the firm cannot meet all of its debt obligations and becomes insolvent.

Unlike equity or debt issuances, asset sales affect both sides of a firm's balance sheet. The decrease in assets leads to a corresponding decrease in the total value of the firm's debt and equity. Though creditors hold a fixed claim, a decrease in the firm's assets increases the probability that their claim will not be paid back in full, lowering the value of their debt investment.⁹⁶ An asset sale therefore effectively transfers some of the incidence of liability away from shareholders and onto creditors.⁹⁷

It is important to emphasize that the corporation's cash holdings are also assets. Therefore, if the corporation chooses to pay its newly imposed liability with cash on hand, it is paying through the equivalent of an asset sale. Returning to our hypothetical firm with outstanding debt of \$50, a liability payment of \$45, and assets that return either \$80 or \$120, each with a probability of 50%, assume now that the firm's assets are of two kinds. The first asset is cash of \$45, which retains its full value regardless of circumstance. The second asset can be expected to return either \$35 or \$75, each with equal probability. Once again the firm's total value is still \$80 or \$120, each with equal probability. If the firm chooses to pay its \$45 in liability with the \$45 cash on hand, it will be left with only the asset that pays \$35 or \$75 with equal probability. In the event that the asset returns its high estimate, creditors will be paid in full. In the event that the asset returns its low estimate, creditors will receive only \$35, and the firm will default. The expected value of debt is therefore \$42.50 $((\$50+\$35)/2)$. Shareholders capture this dilution, and the expected

⁹⁶Recall the fundamental identity principle that $\text{Assets} = \text{Liabilities} + \text{Equity}$. Because the decrease in the value of the firm's assets must equal the sum of the decrease in the value of the firm's debt and its equity, the decrease in the value of the firm's equity must be less than the decrease in the value of its assets.

⁹⁷One potential friction is the price at which the corporation's assets can be sold. In some cases, a corporation may only be able to sell its assets at a loss, making asset sales relatively less attractive to shareholders. However, even if assets are sold at a discount, managers and shareholders may capture private gains from inefficient decisions (Bulow and Shoven, 1978; White, 1980; Gertner and Scharfstein, 1991; Aghion et al., 1992; Hotchkiss et al., 2008; Admati et al., 2018).⁹⁸

In other cases, a corporation may be able to sell assets for more than they are worth to the corporation, making asset sales relatively attractive to both shareholders and creditors. This situation can result from reputational penalties following certain types of malfeasance (Karpoff and Lott Jr, 1993; Alexander, 1999; Karpoff et al., 2005). The potential for profit makes asset sales relatively more appealing to shareholders and to society more broadly as a means of paying liability. However, it would still be socially desirable for corporations to pay liability through equity issuances because of the difficulty of distinguishing between welfare-increasing asset sales and welfare-decreasing asset sales. If corporations are free to sell assets to pay liability, shareholders will profit from both welfare-increasing and welfare-decreasing asset sales, while others such as creditors, employees, and society more broadly will still suffer collateral consequences in the event of welfare-decreasing asset sales. If instead corporations are required to issue equity to pay liability, shareholders will bear the full incidence of liability and can then subsequently sell assets. Even after an equity issuance, shareholders will be incentivized to sell distressed assets, benefiting themselves as well as creditors.

value of equity from paying liability with cash is \$12.50. In the 50% of scenarios where the firm's asset returns its low estimate, the firm cannot meet all of its debt obligations and becomes insolvent.

As this example illustrates, while paying liability with cash does not directly affect the firm's productive assets, it can still have a negative effect on the firm's prospective solvency. When cash stores are depleted, the corporation has less of a buffer against unanticipated negative shocks.⁹⁹ Moreover, because the firm will be exposed to more risk following a cash payment, relative to the sale of a productive asset, paying liability with cash on hand can be less favorable from society's perspective than selling other assets. In sum, asset sales have a negative effect on employees, a negative effect on creditors, and a negative effect on shareholders. Yet the negative effect of asset sales is preferred by shareholders to the negative effect of equity issuances.

Of the various ways a corporation might pay liability, only an equity issuance will not contribute to financial distress and insolvency. However, because an equity issuance is the shareholders' least-preferred option, as compared to debt issuances or asset sales, it is unlikely to be implemented in the absence of governmental intervention. Shareholders instead will maximize their private values, even if doing so leads to financial distress. Concerns about financial distress arising from liability are therefore well-founded in corporate finance theory.

A final example illustrates the burden that corporations place on employees and society more broadly when they choose, in the shareholders' interest, to pay newly imposed liability through debt issuances or asset sales rather than with equity issuances. In 2010, while oil spilled from the Deepwater Horizon into the Gulf of Mexico, British Petroleum's share price rose as the company insisted publicly that it would not issue equity to cover the costs of liability. Instead, it issued billions of dollars of debt¹⁰⁰ and sold billions of dollars of assets.¹⁰¹ After the debt issuances and asset sales, BP's estimated ten-year cumulative default probability increased three-fold (van Deventer, 2015) and thousands of employees lost their jobs.¹⁰² Today BP is solvent, but its leverage remains considerably higher than before the Deepwater Horizon disaster, and significantly higher than those of its peers,¹⁰³

⁹⁹Campello et al. (2010) find that financially constrained firms that burn through cash on hand subsequently sell assets, cancel plans, and bypass attractive investments. Furthermore, because shareholders prefer risky assets, they will prefer to burn through cash before selling riskier assets.

¹⁰⁰2016 Annual Report. Note that BP did not collect any significant amount from insurance coverage to pay for its liability related to the Deepwater Horizon spill (Gyo Lee et al., 2018). Large businesses will frequently self-insure, meaning that instead of buying general-liability insurance, they pay losses themselves. Self-insurance can occur among large corporations that have the financial capacity to pay for small- to medium-sized liabilities, because finding insurers to bear large losses is difficult and expensive (Doherty and Smith Jr, 1993). While Directors and Officers insurance may provide entity coverage ("Side C"), this coverage typically only covers securities claims.

¹⁰¹See <https://www.theguardian.com/business/2015/jan/28/bp-sells-gulf-of-mexico-stakes-chevron-deepwater-horizon>.

¹⁰²2016 Annual Report.

¹⁰³Before Deepwater Horizon, BP's debt-to-equity ratio was 0.23, which was in line with the 0.24 average debt-to-equity ratio of the remaining five major oil companies (Royal Dutch Shell, Chevron, Exxon Mobil, Total, and ConocoPhillips). By March 31, 2020, BP had dramatically increased its debt-to-equity ratio to 0.71, whereas the average debt-to-equity ratio of the remaining five oil majors was just 0.33.

illustrating that the effects of corporate liability can have long-lasting impacts on firms' balance sheets.

5.1.3 The Incentives of Directors and Managers

This paper has assumed that decisions are made by shareholders (or in the interest of shareholders). However, while shareholders are the ultimate authorities, their control is largely delegated to elected directors who in turn delegate power to managers. In this Section, I relax this assumption to explore the benefits of mandatory equity issuances even in the presence of managerial agency conflicts.

Shareholders elect directors to manage the affairs of a corporation. Boards of directors do not manage the corporation, but instead advise and oversee the management of the corporation. In principle, directors have a duty to act in the interest of the corporation, but this is often interpreted in practice to mean that directors have a duty to act only in the interest of shareholders.¹⁰⁴ Directors frequently believe that they have a duty to maximize shareholder value, and a survey of directors of Fortune 200 companies found that almost all would condone the release of a harmful toxin to increase their firm's share price (Rose, 2007). Because directors generally must approve equity issuances,¹⁰⁵ they can be expected to oppose actions that will lead to equity issuances that are costly for shareholders. Mandating equity issuances ensures that directors cannot choose to pay liability in ways that benefit shareholders but are socially costly.

The Alcoa bribery scandal illustrates how a mandatory equity issuance could better align managerial incentives with social welfare more broadly. Alcoa has a stock incentive plan for executives designed to "link the interests of such individuals to the long-term interests of shareholders."¹⁰⁶ At the time liability was imposed on Alcoa in 2014, its CEO's pay was heavily dependent on the company's stock price: 70% of his 2013 target pay was equity compensation and 88% of total target compensation was based on performance.¹⁰⁷ Alcoa's compensation plan further required that the CEO hold six times his annual salary in Alcoa common stock until retirement in order to foster a long-term focus. This pay structure meant that the CEO had strong personal incentives to maximize the share price. Given that Alcoa's profits from its bribery were greater than the fine imposed, the long-term stock price likely increased net of the fine; both the company and its CEO profited. Mandating an equity issuance would have allowed the government to impose a fine without fear of collateral consequences and would have given the CEO stronger incentives to monitor for malfeasance.¹⁰⁸

¹⁰⁴For example, see *Revlon Inc. v. MacAndrews & Forbes Holdings, Inc.* 506 A.2d 173 (Del. 1985), in which the Delaware Supreme Court held that "[a] board may have regard for various constituencies in discharging its responsibilities, provided there are rationally related benefits accruing to the stockholders."

¹⁰⁵Delaware General Corporation Law §152.

¹⁰⁶Alcoa, 2013 Stock Incentive Plan, as Amended and Restated.

¹⁰⁷Alcoa, Annual Report (10-K) 2013.

¹⁰⁸In addition, a derivative suit was brought by an Alcoa shareholder, claiming that Alcoa's directors "caused or failed to prevent illegal bribes of foreign officials, failed to implement an internal controls system to prevent bribes from occurring and wasted corporate assets by paying improper bribes and incurring substantial legal liability" (Alcoa, Annual Report (10-K) 2013.). Alcoa indemnified the directors' costs, and the suit ultimately settled with a payment of \$3.75 million to plaintiff's counsel and the adoption of a

At the time of the liability payment, Alcoa’s CEO held stock options and restricted stock units valued at \$35.4 million.¹⁰⁹ If the incidence of the \$384 million fine that was imposed was fully borne by shareholders, it would have effectively cost the CEO \$1.7 million.¹¹⁰ Had the fine instead been payable with an equity issuance and set at the upper end of the guideline range, \$892 million, the fine would have cost the CEO \$3.9 million. While there are no allegations that the CEO was responsible in this case for Alcoa’s malfeasance, mandatory equity issuances will increase the costs borne by CEOs and can be expected to provide better incentives for monitoring and preventing corporate wrongdoing.

Alcoa’s emphasis on stock-based pay is not unique. In 2017, 60% of the average S&P 500 CEO’s total compensation was in the form of stock grants and stock options, with a further 25% through performance-based bonuses (Equilar, 2017). Given that managers’ compensation is closely tied to stock performance, managers can be expected to pay liability in a manner that benefits shareholders, and thereby their own compensation. Additionally, because much managerial pay is in the form of options, managers may have even stronger preferences for selling assets and increasing leverage than do typical shareholders.

In principle, deferred retirement could be used to partially align the interests of managers with creditors. Analyzing the retirement packages of the CEOs of 237 large firms, Sundaram and Yermack (2007) find that as CEOs approach retirement, the proportion of their pay in the form of pensions increases. However, even for the oldest CEOs, pensions make up only 13% of total compensation. Using much more comprehensive data on the pay of over 19,000 executives, Jackson and Honigsberg (2014) show that retirement pay does not in general align the interests of executives with creditors. Instead, retirement benefits are generally invested in company stock, payouts are made relatively quickly after retirement, and retirement benefits are often functionally equivalent to stock-based pay. In total, executives, like shareholders, prefer taking risky actions that increase the stock price. Because of this, mandating equity issuances improves managers’ incentives for monitoring and compliance ex ante, and ensures that collateral consequences do not arise ex post.¹¹¹

5.1.4 How Corporations Can Exploit Collateral Consequences Through Strategic Malfeasance and Financing

To achieve the twin goals of deterrence and victim compensation, shareholders who control corporations must bear the costs of malfeasance. However, shareholders’ bias towards asset sales and debt issuances as means of paying liability leads to financial distress and collateral

corporate compliance program. *Catherine Rubery, Derivative on Behalf of Alcoa Inc. v. Klaus Kleinfeld*. WD Pa. Case No. 2:12-cv-00844-DWA (Oct. 20, 2014). Even after the multiple settlements, “There was no allegation in the filings by the DOJ and there was no finding by the SEC that anyone at Alcoa Inc. knowingly engaged in the conduct at issue” (2013 Annual report). Even though Alcoa had clawback provisions, they were never exercised.

¹⁰⁹Alcoa, Notice of Annual Meeting of Shareholders and Proxy Statement, May 2, 2014.

¹¹⁰Alcoa had a market capitalization of \$8 billion, so a decrease in \$384 million is a 4.8% decrease in the value of a share. If the fine had been \$892 million, the decrease would be equal to 11.15%. These numbers represent best estimates, because the CEO’s actual return would depend on the strike price of the options and warrants.

¹¹¹The effectiveness of the mandatory equity issuance would further increase in closely-held firms or in dual-class firms where insiders obtain private benefits from control.

consequences. Acknowledging these risks, officials are often persuaded to reduce liability. This reluctance to impose liability can exacerbate corporate malfeasance, as corporations can expect to face fewer penalties when caught. In search of a method not to visit costs on guiltless third parties, officials undermine the work of deterrence and compensation.

Take for example Alcoa Inc., which settled bribery charges with the Department of Justice and the Securities and Exchange Commission in 2014 for \$384 million. A common media narrative was that the corporation had been severely punished for its malfeasance; the settlement inspired article titles such as “Aluminum Giant Alcoa’s Costly Lesson on the Pitfalls of Corruption.”¹¹² However, headlines like these overlooked that government officials had reduced Alcoa’s fine in response to concerns about the company’s pending financial distress, and that ultimately the fine was *less* than Alcoa’s estimated profits from the bribery.¹¹³ Or consider Hynix Semiconductor’s 2005 settlement with the Department of Justice on price-fixing charges, which allowed for a reduced fine in response to concerns about the company’s pending financial distress. In 2019, a new complaint was brought against Hynix and its fellow alleged cartel members for another round of price-fixing, lending doubt to whether the company’s 2005 fine was sufficient to deter future malfeasance.¹¹⁴ Firms profiting from their malfeasance net of fines is potentially widespread (Atkinson, 2020b), and profit-maximizing corporations are left without reason to refrain from malfeasance when breaking the law is profitable even after being fined.

While I focus on how to structure liability to ensure that corporations do not profit from malfeasance, the literature on corporate *criminal* liability instead places a strong emphasis on how liability should be structured to induce corporations to cooperate with officials to find and prosecute responsible individuals (Arlen, 2012). However, while cooperation may be necessary to satisfy *mens rea* requirements in criminal cases, these are a small minority of the cases of corporate misconduct, and the need for cooperation is diminished in civil cases that depend on standards of strict liability or negligence. Moreover, the need for cooperation is further diminished in cases where malfeasance is profitable for the corporation. For example, Alcoa’s penalty was reduced partly because of the firm’s “substantial cooperation.”¹¹⁵ Yet no Alcoa officers or employees were ever convicted. Given that Alcoa’s penalties were less than its estimated profits, Alcoa’s cooperation had the effect of increasing shareholder profits from misconduct. In cases such as this, where corporations can profit from malfeasance, the manager-shareholder conflict is not the chief friction, and inducing cooperation is not the main goal. Instead, in these cases, the conflict is between profit-seeking firms and government officials that are reticent to impose liability.

Other corporations have structured their finances so as to limit liability, as in the case of Olympic Pipeline. The government reduced Olympic’s civil liability following a deadly pipeline explosion in 2003 after determining that “Olympic lack[ed] the economic ability to pay a larger penalty.”¹¹⁶ Olympic filed for bankruptcy shortly after the settlement,

¹¹²<https://knowledge.wharton.upenn.edu/article/aluminum-giant-alcoas-costly-lesson-pitfalls-corruption/>

¹¹³See Appendix A.

¹¹⁴*In re Dynamic Random Access Memory (DRAM) Indirect Purchaser Antitrust Litigation*. N.D. Cal. Case No. 4:18-cv-2518-JSW (Oct. 28, 2019).

¹¹⁵*U.S. v. Alcoa World Alumina LLC*, Case No. 2:14-cr-00007-DWA (W.D. Pa. 2014) January 9, 2014.

¹¹⁶*U.S. v. Shell Pipeline Company LP fka, Equilon Pipeline Company LLC, and Olympic Pipeline Com-*

listing assets of \$106 million and liabilities of \$401 million. On an initial glance, officials' concerns for the company's financial distress would appear reasonable. However, three elements of Olympic's financial structure undermined the case: (1) Olympic was a fully-owned subsidiary of British Petroleum and Shell Oil; (2) Olympic was funded 100% through debt financing; and (3) substantially all of Olympic's liabilities were owed to its parent companies or to subsidiaries of its parent companies. The ultimate effect of reducing Olympic's liability was therefore to increase its creditors' claims in bankruptcy, and Olympic's creditors were its own shareholders. In this case, Olympic's capital structure effectively protected its shareholders in the event that civil penalties resulting from malfeasance were reduced.

Further tools are also available for corporations intent on altering their capital structures to exploit those concerned for the collateral consequences of newly imposed liability. Studies show that the shareholders of financially distressed or indebted firms are able to extract surplus from other parties by exploiting fears of insolvency (Benmelech et al., 2012; Towner, 2016). Furthermore, firms strategically increase leverage in order to improve their bargaining position against workers (Matsa, 2010).

While existing covenants—including restricted payments covenants,¹¹⁷ asset sale covenants,¹¹⁸ and balance sheet / income statement covenants¹¹⁹—limit shareholders' actions, these covenants generally leave shareholders with substantial scope to pay liability in a socially harmful manner. More importantly, because creditors also benefit from fears of collateral consequences that result in reduced liability, they will not demand covenants that protect society more broadly. Too see this more clearly, consider Alcoa's two decades of profitably violating of the Foreign Corrupt Practices Act. During these years, Alcoa had substantial outstanding debt, including a 1998 issuance with a twenty-year maturity.¹²⁰ For the sixteen years from 1998 through 2014, creditors benefited from the company's bribery be-

pany. (Consent Decree) W.D. Wa. (Civil Action No. CV-02-1178R).

¹¹⁷A restricted payments covenant limits the ability of the corporation to issue dividends or repurchase shares. While a restricted payments covenant prevents shareholders from paying themselves dividends funded by excessive asset sales, it does not fully prevent shareholders from limiting their losses through asset sales and debt issuances when paying liability.

¹¹⁸Asset sale covenants are present in many public debt issuances (Reisel, 2014). However, these covenants do not generally explicitly prevent asset sales, but instead typically require that assets are sold at a fair market value and limit non-cash proceeds from asset sales. While restrictive asset sale covenants could limit creditor expropriation, restrictive covenants also limit the flexibility of managers to buy and sell assets that increase investors' joint surplus. While some asset sale covenants require that proceeds be used to pay back existing debt, other public debt issuances explicitly state that the issuing firm is "permitted to sell or lease substantially all of our assets," and that the corporation "may take these actions even if they result in a lower credit rating being assigned to the debt securities." (Form 424B5 Prospectus BP Capital Markets Plc. Published Oct. 31, 2014. Available at <https://sec.report/Document/0001193125-14-391678/d811140d424b5.htm>). After this \$2 billion issuance, BP sold tens of billions of dollars of assets and the 10-year cumulative default probability of BP increased three-fold (van Deventer, 2015).

¹¹⁹Ivashina and Vallee (2019) and Badawi and de Fontenay (2019) show that while covenants in principle restrict borrowers' actions, issuers successfully take steps to weaken the scope of these restrictions. Furthermore, over the past two decades there has been a significant rise in "covenant-lite" loans (Demiroglu and James, 2010; Mellow, 2017).

¹²⁰The bond was issued on October 5, 1998 and had a maturity date of June 15, 2018. The coupon rate was 6.5% and the reference treasury coupon was 0.875%. <https://www.macroaxis.com/invest/bond/AA/022249BA3>

cause Alcoa posted stronger earnings and faced a lower probability of default. However, even after the fine was imposed, these creditors—like Alcoa’s shareholders—benefited from the perception that Alcoa could not afford to pay its fine in full. When officials reduced the fine, creditors faced less risk than they otherwise would have. In principle, creditors could have avoided the risk entirely through a covenant that required Alcoa to pay liability through an equity issuance. However, this covenant would have mitigated officials’ fears of collateral consequences and would have resulted therefore in a much more substantial fine, harming shareholders. Anticipating this possibility, shareholders will instead compensate creditors *ex ante* by borrowing at a higher interest rate, thereby preserving their ability *ex post* to pay liability through asset sales and debt issuances.

In Atkinson (2020a), I analyze this debt-equity dynamic in a rational expectations model. I show that creditors leave shareholders with flexibility over how to pay the fine. While this could expose creditors to risk, the threat of default means that officials reduce liability to avoid collateral consequences. In equilibrium, it is society, not creditors, who are bearing the costs of corporate misconduct. So while existing covenants may incidentally limit shareholders’ choice over how to pay liability, these covenants are designed to maximize the joint surplus of investors, not social welfare more broadly. Unlike privately implemented covenants, mandatory equity issuances induce shareholders to internalize the full social costs of corporate misconduct.

5.2 The Financial Mechanics of Mandatory Equity Issuances

Mandatory equity issuances would be simple to implement. Officials need not calculate the price of new equity or the number of shares to be issued, and the government never needs to take possession of any shares. Instead, officials would need only to issue an order that the corporation raise a set amount of capital through an equity issuance. The corporation would then implement the equity issuance and submit proof to the government.

Because public corporations’ shares are already traded, pricing the equity issuance would be much simpler than pricing an initial public offering. The price for the issuance will effectively be set by the market. The prospect of an equity issuance will reduce the value of outstanding shares, as investors anticipate that the value of the shares will be diluted. For example, suppose there is a corporation worth \$100 that is entirely funded by 100 shares of equity. Therefore, each share is worth \$1. Now suppose that the market anticipates that the corporation will need to raise \$60 through an equity issuance to pay liability. The share price will drop to \$0.40 *before* any equity is issued. This price reflects the market’s understanding that initial shareholders will be diluted; the prospect of attracting new investors effectively allows the market to set the price of the mandatory equity issuance. At \$0.40 per share, the corporation will be able to issue 150 shares to raise \$60. After the issuance, there will be 250 shares outstanding at a price of \$0.40 per share, and the corporation’s value will remain at \$100. Initial shareholders, who see their holdings decrease in value by 60%, will bear the full incidence of the liability.

Share repurchases cannot undo the effects of a mandatory equity issuance. Returning to our example in which the corporation has issued 150 additional shares to raise \$60, initial shareholders hold only \$40 of value after the mandatory equity issuance, so even

fully liquidating the company and repurchasing all outstanding shares will only result in a payout of \$40 to initial shareholders, with the remaining \$60 going to new shareholders.¹²¹

Market forces would additionally discourage equity repurchases following a mandatory equity issuance. Under the trade-off theory of capital structure, firms' capital structures are determined by trading off the costs and benefits of more debt. Equity issuances have no effect on a firm's fundamental capital structure. If a firm's capital structure is optimal before new liability is imposed, that capital structure will remain optimal after the equity issuance, and there will be no new pressure for the shareholders to take action that would undermine that structure, no matter the extent of their dilution. Equity issuances are the only method of paying liability that leaves the firm's capital structure unchanged. Nonetheless, while an equity issuance would preserve the firm's capital structure, shareholders may still resist voluntary equity issuances. Admati et al. (2018) show that in a dynamic trade-off model, shareholders will resist issuing equity to recapitalize a firm, even when doing so would increase the value of the firm.

As an alternative to ex post share repurchases, corporations could attempt to subvert liability by repurchasing shares or paying dividends *before* liability is imposed (Che and Spier, 2008). In this manner, shareholders might strip the firm of all of its assets, occasioning many of the same collateral consequences equity issuances would be designed to avoid. However, shareholders stripping assets to pay dividends is a well-understood problem in the realm of corporate finance, and debt agreements generally contain *restricted payments* covenants that restrict payments to shareholders in anticipation of this very incentive. And even in the absence of a binding covenant to restrict payments, shareholders may have difficulty selling the "correct" level of assets. Courts nevertheless concerned about ex ante asset-stripping can easily protect their judgments from corporate manipulation by tailoring mandatory equity issuances to postdate the ex ante asset sales, thus rendering the sales ineffective at circumventing the court's judgment. This approach would be consistent with the guidance from agencies such as the National Highway Transportation Administration, which takes into account "whether the business has been deliberately undercapitalized" when determining how to levy corporate penalties.¹²² Finally, excessive ex ante asset-stripping to avoid liability may lead to judges piercing the corporate veil, which I discuss in Section 5.4.

Additional costs associated with the typical seasoned equity offering would not apply in the case of a mandatory equity issuance. Normally, underwriting fees in seasoned equity offerings can range between 3% and 8% of proceeds (Eckbo et al., 2007).¹²³ The flotation costs of debt are generally less than those for equity—Lee et al. (1996) find that costs are 7.1% for seasoned equity offerings as compared to 3.8% for convertible debt and 2.2% for

¹²¹If shareholders could profit from issuing debt or selling assets and repurchasing shares after liability is imposed through a mandatory equity issuance, the same would have been true before the mandate as well. Shareholders' incentives to loot a leveraged firm by selling assets to buy shares are *always* present. There is nothing intrinsic in an equity issuance that would increase shareholders' desires to loot.

¹²²49 C.F.R. §578.8(b)(7) Civil penalty factors under 49 U.S.C. Chapter 301.

¹²³When a security is issued, investment banks raise money on behalf of the corporation. As an underwriter, the investment bank acquires the security from the corporation and sells it to the end investors. Because the underwriter takes the risk of selling the securities, the underwriter charges an "underwriting spread" between the price it pays the corporation and the price at which it sells the security.

straight debt. However, while flotation costs for debt are low, most debt has a life of less than 10 years (Eckbo et al., 2007), which means that a firm relying on debt to finance its operations will need to incur repeated rounds of flotation costs. A further cost of equity issuances is their negative effect on the corporation's share price, which can be expected to decrease between 2% and 3% upon the announcement that the firm intends to issue new equity (Eckbo et al., 2007). This empirical evidence is consistent with theories of information asymmetry and adverse selection. Myers and Majluf (1984) show that when managers have superior information, their choice to issue equity signals to investors about the future profitability of the corporation. If managers act in the interests of current shareholders, they will be reluctant to issue shares when they believe that the corporation is undervalued at market price. Instead, the firm will only issue new shares when managers believe that the firm is overvalued at market price. Understanding this asymmetry, new investors will drive down the share price upon the announcement of an equity issuance. Here, the equity offering's negative effect on the share price depends critically on the manager's free ability to choose whether to issue equity. But if the corporation is required to issue equity by a court judgment, there will be no signaling effect and investors will not read from the issuance that management believes the share price to be overvalued. The only decrease in the value of the shares will therefore be the desired liability imposed on shareholders.

Finally, courts should be aware that if the contemplated liability is greater than the malfeasant corporation's market capitalization, it will no longer be possible to impose the full incidence on shareholders through an equity issuance. In these cases, the government can either impose a lesser amount of liability equal to the market capitalization of the firm, or force insolvency by insisting on a judgment in the full amount of liability. The best choice will depend on the relative scope of collateral consequences the court hopes to avoid, and the importance of compensating the particular victims of the corporation's malfeasance.

5.3 The Legal Mechanics of Mandatory Equity Issuances

The simplest manner of mandating an equity issuance is through a settlement agreement. Most cases in which substantial corporate liability is imposed conclude in agreements between government agencies and the corporations they're tasked with overseeing, rather than with trials.¹²⁴ These agreements generally require judicial approval in order to take effect, but courts give agencies considerable deference in negotiating settlement agreements.¹²⁵ In the majority of cases that conclude in settlements, the mandatory equity issuance can

¹²⁴These can take the form of consent decrees, memoranda of agreement, memoranda of understanding, plea agreements, deferred-prosecution agreements, or non-prosecution agreements.

¹²⁵A court reviews settlement proposals based on whether the settlement is fair, reasonable, and adequate, not on the basis of what penalties the court would itself impose. See *S.E.C. v. Wang*, 944 F.2d 80, 85 (2d Cir.1991); *United States v. Cannons Engineering Corp.*, 899 F.2d 79, 84 (1st Cir.1990). When one of the settling parties is a public agency, its determinations about whether the settlement is in the public interest are entitled to deference. See *F.T.C. v. Standard Financial Management Corp.*, 830 F.2d 404, 408 (1st Cir.1987); *S.E.C. v. Randolph*, 736 F.2d 525, 530 (9th Cir.1984) ("The initial determination whether the consent decree is in the public interest is best left to the SEC and its decision deserves our deference.")

therefore be achieved simply by stipulation.

Mandatory equity issuances have already been included in at least one corporate settlement agreements with a government agency, namely, the 2003 securities action brought against WorldCom for massive accounting fraud. The initial settlement agreement between WorldCom and the SEC recognized that WorldCom could only afford to pay one third of the \$1.5 billion in damages for which it was responsible, given the other outstanding claims against the company (see Appendix A).¹²⁶ When Judge Jed Rakoff of the Southern District of New York expressed concern about the settlement figure being too low, the parties then increased the settlement amount to \$750 million, of which \$250 million would be paid through an equity issuance. Judge Rakoff approved of the new agreement.

In the WorldCom case, the potential costs and uncertainty of going to trial were so large that the corporation was willing to agree to an equity issuance when prodded by Judge Rakoff. But as I have argued, corporations will generally not issue equity voluntarily and can be expected to resist settlement agreements that require equity issuances. To address this resistance, agencies need to make equity issuances preferable to going to trial for defendant corporations. One way to achieve this pressure is by seeking large monetary judgments at trial; a second is to use courts' broad powers to tailor sentences and remedies.

There is substantial scope in criminal cases for courts to impose mandatory equity issuances as part of a restitution order. Courts have authority to consider restitution in almost all criminal cases,¹²⁷ and a restitution order may direct the defendant to make in-kind payments.¹²⁸ The Organizational Sentencing Guidelines similarly provide that a restitution order can be through in-kind payments.¹²⁹

There is also broad scope in civil cases to mandate equity issuances as part of the required equitable relief. Laycock (1993) concludes that a plaintiff "is entitled to choose either specific or substitutionary relief unless there is some articulable reason to override her choice." Regulatory plaintiffs are afforded the same choice, and "[i]n the majority of statutory or regulatory schemes in which Congress has granted at least some equitable powers (or remedies) to the courts, the courts have found the authority to impose the full panoply of equitable remedies" (Hall, 2009). Ample precedent makes clear that one such remedy is a mandatory equity issuance.¹³⁰

While courts generally have substantial scope to mandate equity issuances as relief, corporate directors may not always have the legal authority to issue equity. Under the Delaware General Corporation Law, directors can generally issue additional shares only so

¹²⁶*S.E.C. v. WorldCom, Inc.*, 273 F.Supp.2d 431, 435 (2003).

¹²⁷18 U.S.C. §3553.

¹²⁸18 U.S.C. §3664(f)(3)(A).

¹²⁹USSG §8B1.1(d).

¹³⁰Examples of equitable relief being offered (drawn from Hall (2009)) include actions brought by the Federal Trade Commission (*FTC v. General Merch. Corp.*, 87 F.3d 466 (11th Cir. 1996)) and the Securities and Exchange Commission (*S.E.C. v. First City Financial Corp.*, 890 F.2d 1215 (D.C. Cir. 1989)), as well as under the Commodity Exchange Act (*Commodities Futures Trading Comm'n v. Co Petro Marketing Group, Inc.* 680 F.3d 573 (9th Cir. 1982)), the Clean Water Act (*U.S. v. Alcoa Ind.*, 98 F. Supp 2d 1031 (N.D.Ind. 2000)), the Clean Air Act (*U.S. v Cinergy, Corp.*, 582 F. Supp 2d 1055, 2008 WL 4585421 (S.D. Ind. 2008)), and antitrust laws (*U.S. v All Star Industries*, 962 F.2d. 465 (5th Cir. 1992)).

long as those issuances have been authorized in the corporate charter.¹³¹ Corporate charters will therefore often specify a precise number of shares that the firm can issue without first obtaining shareholder authorization.¹³² However, corporations usually hold authorized but unissued shares (“excess shares”) over and above their outstanding shares. These excess shares are often used for executive compensation, for exercising poison pills to deter hostile acquisitions, and as top-up options for friendly acquirers. While a corporation must have authorized sufficient additional issuances in order to pay liability with new equity, the availability of authorized shares is unlikely to be a barrier in most cases.

Empirical studies have found that the average firm newly incorporated in Delaware has authorized 5.79 new shares to be issued for each share outstanding (Ganor, 2011), and that Delaware corporations amid stock splits can raise on average 2.91 shares for each share outstanding (Elliott and Songur, 2016). Using the more conservative ratio of 2.91 excess shares per outstanding share, we can calculate that the average firm could raise an additional 74.4% of its market capitalization to pay liability,¹³³ indicating that a paucity of authorized shares is unlikely to act as a barrier to equity issuances in all but the most extreme cases.

For example, at the time liability was imposed in 2005 upon Hynix Semiconductor as penalty for its price-fixing schemes, the corporation had only issued 5.4 billion of the 9 billion shares authorized in its corporate charter. Hynix’s directors could therefore have issued an additional 3.6 billion shares at any time. Given Hynix’s market capitalization of \$2.16 billion and its 5.4 billion outstanding shares, each single share was valued at \$0.40. Had Hynix issued its remaining 3.6 billion excess shares and used the proceeds to pay liability, its market capitalization would not have changed. However, the value of each share would have decreased to \$0.24 (\$2.16 billion / 9 billion). New shareholders would have held 40% of the total equity in the firm (3.6 billion of 9 billion shares), and the firm would have raised \$864 million (3.6 billion x \$0.24) to pay liability through an equity issuance.¹³⁴

In cases where the newly imposed liability is more than can be raised through an eq-

¹³¹ “The directors may, at any time and from time to time, if all of the shares of capital stock which the corporation is authorized by its certificate of incorporation to issue have not been issued, subscribed for, or otherwise committed to be issued, issue or take subscriptions for additional shares of its capital stock up to the amount authorized in its certificate of incorporation.” DGCL §161.

¹³²DGCL §242.

¹³³The amount that can be raised as a percent of the firm’s market capitalization is $\frac{\text{Excess Shares}}{\text{Authorized Shares}}$. Given the average excess share ratio of 2.91, a firm could therefore raise: $\frac{2.91}{1+2.91} = 0.744$. Firms with a greater ratio of excess shares can raise an even greater amount as measured against their market capitalization. Ganor (2011) looks at excess shares of newly incorporated firms and finds average excess shares of 4.55, 4.74, and 5.79 for the years 2003, 2008, and 2009. These ratios would result in the ability to raise 82%, 83%, and 85% of the average firm’s market capitalization in 2003, 2008, and 2009, respectively. The lowest excess share ratio observed by Ganor (2011) was 0.34. Even at this low ratio, a firm would still be able to raise 25.4% of its market capitalization ($\frac{0.34}{1+0.34} = .254$) through equity issuances.

¹³⁴Note that the amount that Hynix could have raised takes into account that the proceeds will be paid in liability instead of being retained by the firm. If the firm were to retain the proceeds of the equity issuance, then it could have raised \$1.44 billion (3.6 billion x \$0.40), resulting in a firm still worth \$3.6 billion (\$2.16 billion + \$1.44 billion) wherein new shareholders would hold 40% of the equity. The firm can raise more in this case because an equity issuance where the proceeds are retained by the firm does not dilute the value of individual shares.

uity issuance of authorized shares, the corporation's shareholders would need to vote on an increase in authorized shares before equity is issued. However, knowing that an equity issuance would be used to pay liability, shareholders may not support the necessary charter amendment.¹³⁵ To circumvent this issue, the government could attempt to encourage shareholders toward an increase in authorized shares. One possible method would be by making the value of the liability payment conditional on the firm issuing equity. Consider again the case of WorldCom. At the time of its settlement, WorldCom was in bankruptcy proceedings and investors greatly preferred Chapter 11 reorganization to Chapter 7 liquidation. Understanding the investors' preferences, Judge Rakoff made his remedy conditional on the corporation's decision: if the firm liquidated, the total penalty would be \$500 million in cash; if the firm reorganized, the total penalty would be \$750 million paid through a combination of equity and cash.¹³⁶ Because of the investors' preference to avoid liquidation, the firm consented to the increased penalty and equity issuance.

A final potential barrier to mandatory equity issuances is the explicit policy at some government agencies of not accepting stock to satisfy corporate penalties. For example, the Justice Manual states that "[c]orporate stock should generally not be accepted in settlement or payment of a claim in favor of the United States. Managing such stock holdings places unusual burdens on client agencies."¹³⁷ However, to enforce a mandatory equity issuance the government need not accept any corporate stock. The government instead only needs to verify that the firm has issued stock, which can easily be seen in the corporation's financial reports. The agency, in turn, accepts the cash raised from the equity issuances. Such policies should therefore not act as a barrier to mandating equity issuances.

5.4 Private Companies

So far I have discussed the dynamics of requiring equity issuances of public firms. But there may be more roadblocks to mandating equity issuances of private companies, whose stock is not actively traded on an open market and therefore exists in a different conceptual ecosystem. Nevertheless the advantages of equity issuances provide insights about how liability for private firms should be structured when these issuances aren't a feasible solution.¹³⁸

Many private companies are fully-owned subsidiaries of public companies. Government officials considering reducing fines against private companies would therefore do well to review the firm's ownership structure to determine whether liability could be structured to be borne by the upstream shareholders, thus avoiding collateral consequences.

Consider again Olympic's 2003 settlement agreement to resolve civil suits arising from a pipeline explosion that killed three boys. Olympic's civil fine was reduced because "settlement discussions demonstrat[ed] that Olympic lack[ed] the economic ability to pay a

¹³⁵Even if shareholders resist paying liability through equity issuances, there is always scope for a Pareto improvement in which shareholders agree to reduced liability that is paid through an equity issuance.

¹³⁶*S.E.C. v. WorldCom, Inc.*, 273 F.Supp.2d 431, 435 (2003).

¹³⁷Justice Manual 4-3.210.

¹³⁸My focus here is not on small owner-operated firms. Instead, my focus is on private firms that are professionally run.

larger penalty.”¹³⁹ Because Olympic was a privately owned LLC, a direct equity issuance could not be mandated. However, officials overlooked that Olympic was owned in its entirety by Royal Dutch Shell and British Petroleum, at that time the eighth and ninth most valuable publicly traded corporations in the world.¹⁴⁰ Moreover, according to subsequent bankruptcy filings, substantially all of Olympic’s debts were owed to these two parent companies. As I show in Appendix A, the ultimate effect of reducing Olympic’s fine was to reduce the fine on two multi-billion-dollar companies that had ample ability to pay. Officials likewise should have applied more scrutiny to Olympic’s argument that its insolvency would inflict collateral consequences on its business partners and the region more broadly. The company claimed that its continued viability was “critical to Western Washington’s economy, as it transports most of this region’s retail gasoline and is the only method of transporting jet fuel to Seattle Tacoma International Airport.” However, while the pipeline itself was critical, it was never under threat. As a fixed, revenue-generating asset, it is unlikely that the pipeline would cease to operate as a result of Olympic shouldering full liability. In fact, when Olympic subsequently went bankrupt, the pipeline continued to provide fuel.

In some cases, courts already blur the lines between private subsidiaries and their public parents. Consider once more the 2014 plea agreement entered into between the Department of Justice and Alcoa World Alumina LLC, a private subsidiary of Alcoa, to resolve a litany of bribery charges. Noting that a full fine “‘would pose an undue burden on’ the Defendant *and* Alcoa,”¹⁴¹ the agreement reduced liability for the subsidiary on account of collateral consequences that might have impacted upon the parent. The agreement continued:

“[A] fine of \$209,000,000 is the appropriate disposition based on . . . the financial condition of the Defendant’s majority shareholder, Alcoa, and its potential to ‘substantially jeopardiz[e]’ Alcoa’s ability to compete . . . including, but not limited to, its ability to fund its sustaining and improving capital expenditures, its ability to invest in research and development, its ability to fund its pension obligations, and its ability to maintain necessary cash reserves to fund its operations and meet its liabilities;”¹⁴²

The parties were right to include the parent company in their analysis of the subsidiary’s ability to pay liability. However, the specific claim that a full fine would have threatened the parent Alcoa’s viability appears spurious, given Alcoa’s \$8 billion market capitalization and \$13.5 billion book value.

As a second method of holding public parents accountable for the malfeasance of their private subsidiaries, government officials should also consider the possibility of piercing corporate veils, particularly in cases where private firms are deliberately under-capitalized

¹³⁹ *U.S. v. Shell Pipeline Company LP fka, Equilon Pipeline Company LLC, and Olympic Pipeline Company*. (Consent Decree) W.D. Wa. (Civil Action No. CV-02-1178R).

¹⁴⁰ “Global 500 2003,” *Financial Times*, available at <https://web.archive.org/web/20080910101006/http://specials.ft.com/spdocs/global5002003.pdf>.

¹⁴¹ *U.S. v. Alcoa World Alumina LLC*, Case No. 2:14-cr-00007-DWA (W.D. Pa. 2014) January 9, 2014 (emphasis added).

¹⁴² *Id.*

to avoid the consequences of liability.¹⁴³ Though courts rarely pierce a subsidiary's corporate veil to access the parent (Matheson, 2008), piercing may be necessary in some cases to impose sufficient liability on the ultimate principals. For example, Olympic Pipeline was funded 100% through debt financing, with the goal of avoiding liability.¹⁴⁴ Piercing the corporate veil would have allowed for the courts to impose liability on the responsible decision-makers.

Finally, in cases where collateral consequences remain a legitimate concern but equity issuances are not possible and veil-piercing is undesirable, officials should attempt to impose liability in a manner that imposes less of a threat to the defendant company's solvency. For example, the government could allow the firm to determine when to make payments, subject to two further stipulations.¹⁴⁵ First, the firm would not be allowed to pay shareholders any dividends until liability is fully repaid; second, the outstanding liability would continually accrue interest. This structure, of encouraging prompt compliance without fixing payment due dates, would have the effect of allowing government agencies to impose a high level of liability without increasing the firm's risk of financial distress.¹⁴⁶

6 Discussion

Corporate liability is meant to deter illegal behavior and to compensate victims of corporate misconduct. Unfortunately, in the pursuit of these goals, the imposition of civil or criminal liability can lead to a variety of collateral consequences that will ultimately be borne not only by the malfasant corporation but also by its employees and society more broadly. In this paper, I have explored the trade-off between the costs and benefits of imposing liability: large penalties may be necessary to adequately deter corporations and to provide compensation, but these large penalties may lead to undesirable consequences including financial distress and insolvency.

I have shown that firms' capital structures have important consequences for the incidence of liability related to corporate malfeasance. Indebted firms that act in the interest of shareholders will favor paying liability by issuing further debt and by selling assets, thereby increasing leverage and the probability of financial distress. Importantly, shareholders will only bear a portion of liability, meaning that standard fines will underdeter corporate malfeasance.

Others associated with the corporation are generally powerless to influence the needed

¹⁴³The veil-piercing test of *Lowendahl v. Baltimore and Ohio Railroad*, 247 App. Div. 144 (N.Y. App. Div. 1936), requires finding a shareholder who dominates corporate policy and who uses that control to commit a wrong. In practice, a court is unlikely to pierce a public corporation.

¹⁴⁴Olympic Pipeline Co., Wash. Util. & Transp. Comm'n., Order Granting Interim Relief, In Part, Docket No. TO-011472, at 7.

¹⁴⁵As I discussed in Section 2, settlement agreements that allow companies to pay liability through installment payments frequently result in firms paying far less liability than contemplated.

¹⁴⁶A similar method could be used in cases where publicly traded firms lack sufficient authorized shares to pay liability through an equity issuance. However, this method is still less desirable than an equity issuance. Even though the liability payment will not directly lead to financial distress, the debt will change shareholders' incentives. Shareholders will now prefer riskier investments because they will not be paid dividends until the firm pays off the liability. This problem does not arise with equity issuances.

change. Creditors have little incentive to demand covenants that would serve as a check on corporate behavior and protect society more broadly as a result. To the contrary, in many cases creditors can benefit from malfeasance if the liability imposed is less than the benefit to the firm. Meanwhile, there is little most employees can do to prevent corporate malfeasance or to protect themselves from the collateral consequences that might result from liability. While employees should, in principle, take actions to monitor the firm and to prevent corporate malfeasance, the majority of employees who will be adversely effected by the firm's financial distress are not in the position to anticipate the malfeasance before its public exposure. And while employment contracts provide a measure of protection against collateral consequences, most employees can be fired without much difficulty.

After malfeasance has occurred, those responsible for sanctioning the corporation often fail to do so effectively. Though agencies and officials have admirably developed an expansive legal basis for revising down corporate liability because of concerns about the public welfare and the potential adverse impact of collateral consequences, they often appear to misapply the doctrine, reducing liability even when collateral consequences are unlikely to occur. Because reductions in liability are not isolated events, but are instead a central part of the decision to impose corporate liability, this misunderstanding has widespread repercussions: the twin goals of deterrence and victim compensation are often going underserved.

In this paper, I have offered a simple solution to resolve the fear of collateral consequences resulting from corporate liability: in many cases officials should require that firms pay liability through equity issuances. This mandate would allow officials to impose higher levels of liability on malfeasant corporations without risking their financial distress and the attendant collateral consequences. By focusing liability on shareholders rather than employees, creditors, or the public, mandatory equity issuances can help better align the interests of corporations and society more broadly.¹⁴⁷ In cases where mandatory equity issuances are not possible, other options such as delayed liability payments may somewhat limit collateral consequences, but are generally inferior to mandatory equity issuances.

One of this paper's key messages is that firms' financing decisions have important implications outside of areas that are traditionally related to finance and corporate law. How firms are financed has implications for their propensity to engage in malfeasance and the effects of liability on guiltless third parties. In order for the increased academic and public focus on aligning corporate and societal interests to succeed, more research must be conducted on the effects of firms' financing decisions on society more broadly.

Similarly, the literature thus far on corporate liability has primarily been framed around

¹⁴⁷The careful reader may ask why the government does not require all corporate investments to be funded through equity issuances. While increased reliance on equity financing reduces insolvency risk, a restriction to financing only through equity would carry substantial costs. Debt financing can benefit firms in many ways, in particular by helping to overcome underinvestment problems arising from asymmetric information (Myers and Majluf, 1984) and by reducing agency costs (Hart and Moore, 1998). In general, firms should be allowed to choose their own financing structures. What makes the corporate-liability decision special is that debt issuances and asset sales do not serve a social purpose when the proceeds are being used to pay liability. In this case, shareholders can exploit the fears of collateral consequences to avoid liability. For a more detailed analysis of using capital-structure requirements in the imposition of corporate liability, see Che and Spier (2008) and Atkinson (2020a).

the principal-agent conflict between managers and shareholders. However, as I show, if the incidence of shareholder liability is less than the firm's profits from malfeasance, shareholders too may benefit from corporate malfeasance, complicating the conflict. Some research has been conducted on how malfeasance can be profitable even after liability has been imposed (Shapira and Zingales, 2017; Atkinson, 2020b), but more analysis into the profitability of corporate malfeasance is needed. In my view, shifting focus away from the manager-shareholder agency conflict, in order to focus instead on the conflict between corporations and society more broadly, is a fruitful path for future research.

A Case Studies

This appendix contains seven case studies of firms that received reductions in their fines because of perceptions of collateral consequences or inability to pay. These cases were chosen to highlight variation in fine amounts; civil and criminal fines; large and small firms; foreign and domestic firms; and public and private firms.

Hynix Semiconductor

In 2005, Hynix Semiconductor Inc. pled guilty to having engaged in price fixing for high-speed computer memory. The plea agreement with the Antitrust Division of the Department of Justice for \$185 million stated that:

The United States and the Defendant agree that the applicable Guidelines fine range exceeds the fine contained in the recommended sentence set out [above]. The United States agrees that, based on Defendant’s ongoing cooperation, the United States would have moved the court for a downward departure pursuant to U.S.S.G. §8C4.1, but for the fact that the amount of the fine that the United States would have recommended as a downward departure for substantial assistance provided still would have **exceeded Defendant’s ability to pay**. The parties further agree that the recommended fine is appropriate, pursuant to U.S.S.G. §8C3.3(a) and (b), **due to the inability of the Defendant to make restitution to victims and pay a fine greater than that recommended without substantially jeopardizing its continued viability**.¹⁴⁸

On first inspection, the fear of insolvency seems reasonable. As of January 1, 2005, Hynix had \$1.66 billion in current liabilities that were due within one year. But Hynix only had \$343 million in cash and cash equivalents and an additional \$552 million in short term financial instruments (e.g. savings deposits and financial instruments maturing in less than one year.). This meant that Hynix already had an expected shortfall of \$765 million for the year. According to the Federal Sentencing Guidelines, the fine should have amounted to \$265.5 million,¹⁴⁹ which would have added to this shortfall.

Hynix’s short-term finances were not as dire as the balance sheet would make them appear. Included in the firm’s current liabilities was an “allowance for the charges regarding the violation of antitrust laws currently being investigated by the U.S. Department of Justice.” In effect, the imposition of liability was already factored into the company’s short-term financial calculus, and it would be incorrect to assume that imposing liability of \$265.5 million would increase liabilities by the full \$265.6 million.

Moreover, focusing on Hynix’s short term financial position overlooks its relatively strong long-term financial position. The firm’s total assets were reported at \$6.7 billion and the firm’s total liabilities were reported at \$3.7 billion, for a book valuation of \$3 billion. The market value of outstanding equity was \$2.16 billion. So while the firm had current liabilities in excess of current liabilities, its balance sheet was firmly positive, and the firm should have been able to raise the full \$265.5 billion without jeopardizing its continued viability.

Current Assets	895
Total Assets	6,700
Current Liabilities	1,660
Total Liabilities	3,700
Net Current Assets	(765)
Total Equity (Book Value)	3,000
Market Capitalization	2,160
Penalty Imposed (millions \$)	185
Effective Penalty Paid (millions \$)	143.8

¹⁴⁸ *U.S. v. Hynix Semiconductor Inc.* (Plea Agreement) N.D. Cal. Case No. CR 05-249 PJH. (Emphasis added)

¹⁴⁹ Semin Park, “Sanctions in Antitrust Cases.” (2016), OECD Competition Division.

In fact, while the DOJ imposed a fine of \$185 million, the fine was payable over five years without interest.¹⁵⁰ Discounting the firm’s payments to 2005 using the average U.S. firm’s weighted average cost of capital, results in a cost of \$143.8 million.¹⁵¹

In 2019 a complaint was once again filed against Hynix, Micron, and Samsung (two other firms that plead guilty in 2005) for a new round of price fixing.¹⁵²

Technicolor

In 2012, the European Commission imposed a fine on several companies for participating in a cartel in the sector of cathode ray tubes (CRT). The companies shared markets, fixed prices, and restricted output. One of the cartel members, Technicolor, was reportedly assessed a fine of €257.5 million.¹⁵³ However, Technicolor invoked its inability to pay the fine, which the Commission assessed under point 35 of the 2006 fines Guidelines, which allows fines to be reduced for inability to pay.¹⁵⁴ The commission reduced Technicolor’s fine by €219 million, or 85%, to €38.6 million that was reportedly reduced by €219 million from an initial fine of €257.5 million.

An assessment of Technicolor’s financial position at the time lends some support to reduction. Technicolor had a number of difficult years in the lead up to the fine. In 2009, the company filed for bankruptcy and subsequently underwent a debt restructuring plan. Technicolor made net losses of €69 million and in 2010 and net losses of €324 million in 2011.¹⁵⁵ In 2012, Technicolor reported a net profit of €4 million, including the €38.6 million fine.

On December 31, 2012 (three weeks after the fine was announced), Technicolor reported €1.42 billion in current assets (assets that can be quickly liquidated for cash) and €1.29 billion in current liabilities (including the €38.6 million fine).¹⁵⁶ At the same time, Technicolor reported total assets of €3.24 billion and total liabilities of €2.99 billion. This resulted in a book value of equity of €241 million.

Applying a fine of €257.5 million (after a 10% reduction for cooperation) would in principle lead to insolvency by increasing the firm’s liabilities above its assets.

However, focusing on the book value of equity obscures the higher market value of Technicolor. Technicolor’s market capitalization on the day that the

Technicolor	
Balance Sheet (millions €)	
Current Assets	1,420
Total Assets	3,240
Current Liabilities	1,290
Total Liabilities	2,990
Net Current Assets	130
Total Equity (Book Value)	241
Market Capitalization	415
Initial Penalty (millions €)	257.5
Penalty Imposed (millions €)	38.6

¹⁵⁰“The United States and the Defendant agree to recommend, in the interest of justice pursuant to 18 U.S.C. §3572(d)(1) and U.S.S.G. §8C3.2(b), that the fine be paid in the following installments: within 30 days of imposition of sentence – \$10 million; at the one-year anniversary of imposition of sentence (“anniversary”) – \$35 million; at the two-year anniversary – \$35 million; at the three-year anniversary – \$35 million; at the four-year anniversary – \$35 million; and at the five-year anniversary – \$35 million; provided, however, that the Defendant shall have the option at any time before the five-year anniversary of prepaying the remaining balance then owing on the fine.

¹⁵¹See Atkinson (2020b) for a description of how federal agencies use the weighted average cost of capital to calculate the benefit from delayed payments of fines.

¹⁵²*In re Dynamic Random Access Memory (DRAM) Indirect Purchaser Antitrust Litigation*. N.D. Cal. Case No. 4:18-cv-2518-JSW (Oct. 28, 2019).

¹⁵³Global Competition Review, 18 December 2012, “CRT Cartelist Obtains Record Inability To Pay Fine Cut.”

¹⁵⁴Commission Decision of 5 December 2012 (Case COMP/39.437 — TV and computer monitor tubes), available at https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1.39437.

¹⁵⁵Technicolor SA, Annual Report (*Document de Référence*) (March 27, 2012).

¹⁵⁶Technicolor SA, Annual Report (*Document de Référence*) (April 16, 2013).

fine was imposed was €415 million, which quickly rose in the months following the fine and reached €1.3 billion one year later. So while Technicolor’s book value was insufficient to pay the €257.5 million fine, its market value was high enough that it could have raised enough equity to pay the fine.¹⁵⁷

Beazer Homes

In 2009, Beazer Homes, one of the country’s largest home builders, settled civil and criminal charges with several state and federal agencies for a reported \$50 million. The U.S. Attorney’s Office justified the \$50 million settlement by stating that:

“the imposition of additional criminal penalties or the requirement of additional payment at this time would jeopardize the solvency of Beazer and put at risk the employment of approximately 15,000 employees and full-time contractors not involved in the criminal wrongdoing.”¹⁵⁸

On June 30 (the day before the settlement agreement), Beazer had total assets of \$2.1 billion and total liabilities of \$1.94 billion. The book value of equity was \$196 million. So while this indicates that it could have paid more than \$50 million, doing so may have threatened its continued viability. While Beazer had substantial long-term liabilities, it had only \$76 million of current liabilities, which could easily be covered by its \$495 million of cash and short term investments. Beazer’s long-term liabilities were staggered with some not falling due until 2036.¹⁵⁹

On the day that the settlement agreement was announced, Beazer had a market capitalization of \$71.8 million. However, this valuation likely factored in expectations about liability. Following the imposition of liability, Beazer’s market capitalization doubled by early August and tripled by mid-October 2008.

The settlement agreement with Beazer was in fact, not for an immediate \$50 million cash payment. Approximately \$2 million was paid to the North Carolina Commissioner of Banks, with the remaining \$48 million to be potentially contributed to a restitution fund:

Current Assets	495
Total Assets	2,100
Current Liabilities	76
Total Liabilities	1,940
Net Current Assets	495
Total Equity (Book Value)	196
Market Capitalization	71.8
Penalty Imposed (millions \$)	50
Penalty Paid (millions \$)	28.1

under these agreements, we were obligated to make payments equal to 4% of “adjusted EBITDA,” as defined in the agreements, until the earlier of (a) September 30, 2016 or (b) the date that a cumulative \$48.0 million had been paid pursuant to the DPA and the HUD Agreement. Accordingly, after making the fiscal year 2016 payments described below, our obligations under the HUD Agreement will expire. As of September 30, 2016, we have **paid a cumulative \$28.1 million related to the DPA and the HUD Agreement.**¹⁶⁰

EBITDA (Earnings before interest, tax, depreciation and amortization) is a measure of a company’s operating performance. The settlement agreement meant that Beazer would only pay the full \$50 million if it had a cumulative EBITDA of at least \$950 million over the period.¹⁶¹ Due to the financial difficulties

¹⁵⁷At a market capitalization of €415 million, raising €257.5 from new shareholders would have reduced the value of the initial shares by 62% to €157.5 million.

¹⁵⁸*U.S. v. Beazer Homes USA, Inc.* (Deferred Prosecution Agreement) W.D.N.C. (Jul. 1, 2009).

¹⁵⁹Beazer Homes, Quarterly Report (10-Q) 2009.

¹⁶⁰Beazer Homes, Annual Report (10-K) 2017 (emphasis added).

¹⁶¹The payment schedule stipulated that an additional \$10 million would be paid in the first year regardless of EBITDA, so after the first year, Beazer had potential payments of up to \$38 million, and $\frac{\$38,000,000}{4\%} = \$950,000,000$.

that home-builders faced following the financial crisis, Beazer had a negative EBITDA for a number of years, so only paid 56% of the reported liability.

Alcoa

For 20 years beginning in 1989, Alcoa and a subsidiary company engaged in bribes in violation of the Foreign Corrupt Practices Act that generated substantial profits. From 2005 to 2009 alone, Alcoa World Alumina is estimated to have earned \$446 million in gross profit “on the corruptly secured alumina-supply agreement.”¹⁶² In January 2014, Alcoa agreed to pay \$384 million in settlement agreements with the Department of Justice and the Securities and Exchange Commission.

□ **Department of Justice Settlement.** Under a violation of 15 U.S.C. §78dd-2, the statutory maximum sentence that the court could impose is \$2 million or twice the pecuniary gain or gross pecuniary loss resulting from the offense, whichever is greatest.¹⁶³ The investigation further found that the benefit was received was *more than \$400 million*. The guideline range for the violation was \$446 million to \$892 million. The fine was reduced to \$209 million for a number of reasons including cooperation with the Department of Justice and a commitment to maintain an anti-corruption compliance program. The first justification for the reduction was that:

“[A] fine of \$209,000,000 is the appropriate disposition based on . . . the impact of a penalty within the guidelines range on the financial condition of the Defendant’s majority shareholder, Alcoa, and its potential to ‘**substantially jeopardiz[e] Alcoa’s ability to compete**, see U.S.S.G. §8C3.3(b), **including, but not limited to, its ability to fund its sustaining and improving capital expenditures, its ability to invest in research and development, its ability to fund its pension obligations, and its ability to maintain necessary cash reserves to fund its operations and meet its liabilities**,”¹⁶⁴

Furthermore, the settlement agreement stipulated that “[b]ecause the immediate payment of the entire fine ‘would pose an undue burden on’ the Defendant and Alcoa,” the fine would be payable in five annual installments of \$41,800,000. Discounting the firm’s payments to 2014 using the average U.S. firm’s weighted average cost of capital, results in a discounted value of \$179.9 million—a full \$30 million less than the already-discounted fine.¹⁶⁵

To understand the fine and the reduction based on “the financial condition,” we first need to understand the ownership structure of the defendant. The DOJ settlement was with Alcoa World Alumina LLC (“AWA”) a limited liability company. It was wholly owned by Alcoa World Alumina and Chemicals (“AWAC”), which in turn was a joint venture between Alcoa Inc., which held a 60% stake, and Alcoa and Alumina Limited (“Alumina”), which held a 40% stake. Alumina is a holding company with its only asset being its 40% stake in AWAC.

At the time of the settlement, AWAC had current assets of \$1.79 billion and current liabilities of \$1.77 billion, which meant that its net current assets were only \$17 million—far less than the contemplated fine.¹⁶⁶ However, AWAC’s total assets of \$10 billion dwarfed its total liabilities of \$3.2 billion, meaning that it had a book value of \$6.8 billion. Therefore, while it may not have had the cash on hand to pay a fine in the guideline range, it could easily have tapped capital markets to pay the fine. Furthermore, because AWAC was a private company, it did not have an actively traded stock. However, because AWAC was the only investment of Alumina, we can impute the market value of AWAC from the market capitalization

¹⁶²Miller, John W., “Alcoa Affiliate Pleads Guilty to Bribery”, *Wall Street Journal* (Jan. 9, 2014).

¹⁶³18 U.S.C. §3571(c)(3) and (d).

¹⁶⁴*U.S. v. Alcoa World Alumina LLC*, Case No. 2:14-cr-00007-DWA (W.D. Pa. 2014) January 9, 2014 (emphasis added).

¹⁶⁵See Atkinson (2020b) for a description of how federal agencies use the weighted average cost of capital to calculate the benefit from delayed payments of fines.

¹⁶⁶Alumina, Annual Report (10-K) 2013.

of Alumina. At the time of the fine, the imputed market capitalization of AWAC was approximately \$7 billion.¹⁶⁷

However, the DOJ settlement agreement was chiefly concerned with “the financial condition of the defendant’s majority shareholder, Alcoa.” At the time of the fine, Alcoa was in a much-diminished financial position. While Alcoa’s stock was trading at less than one fifth of what it was trading at before the 2007-2009 financial crisis, the idea that Alcoa could not pay the entire fine strains credulity. At its most recent securities filing, Alcoa had current assets of \$6.9 billion and current liabilities of \$6.1 billion, so net current assets were a full \$800 million.¹⁶⁸ Alcoa’s total assets of \$35.7 billion and total liabilities of \$22.2 billion gave it a book value of \$13.5 billion. This implies that the firm could have tapped credit markets to raise the contemplated fine. Finally, Alcoa had a market capitalization of approximately \$8 billion, meaning that it had substantial scope to raise funds through equity issuances.

AWAC’s minority shareholder, Alumina, was in an even stronger financial position. Because Alumina’s only meaningful investment was AWAC, it had \$2.9 billion in total assets and only \$170 million in total liabilities, with a market capitalization of \$2.8 billion.¹⁶⁹ Alumina could easily cover any shortfalls through an equity issuance or borrowing against AWAC’s future dividends. However, Alumina’s exposure was considerably less than Alcoa’s because in a 2012 agreement, the owners agreed to split the costs with with 85% payable by Alcoa and 15%

Alcoa Inc.	
Balance Sheet (millions \$)	
Current Assets	6,900
Total Assets	35,700
Current Liabilities	6,100
Total Liabilities	22,200
Net Current Assets	800
Total Equity (Book Value)	13,500
Market Capitalization	8,000

Alumina Limited	
Balance Sheet (millions \$)	
Current Assets	47.8
Total Assets	2,900
Current Liabilities	61.4
Total Liabilities	170
Net Current Assets	(13.6)
Total Equity (Book Value)	2,730
Market Capitalization	2,820

Alcoa World Alumina and Chemicals	
(Ownership: 60% Alcoa, 40% Alumina)	
Balance Sheet (millions \$)	
Current Assets	1,790
Total Assets	10,072
Current Liabilities	1,773
Total Liabilities	3,211
Net Current Assets	13
Total Equity (Book Value)	6,861
Market Capitalization (Imputed)	7,050

□ **SEC Action.** A parallel SEC action found that Alcoa violated Sections 30A, 13(b)(2)(A), and 13(b)(2)(B) of the Securities Exchange Act of 1934. Alcoa was required to disgorge \$175 million of ill-gotten gains. The SEC settlement noted the

“impact of the disgorgement payment upon Respondent’s financial condition and its potential to substantially jeopardize Alcoa’s ability to fund its sustaining and improving capital expenditures, its ability to invest in research and development, its ability to fund its pension obligations, and its ability to maintain necessary cash reserves to fund its operations and meet its liabilities.”¹⁷¹

Because of this, the disgorgement payment was payable through five annual installments.¹⁷² Discount-

¹⁶⁷ Alumina owned 40% of AWAC, and AWAC was Alumina’s only meaningful investment. This implies that the imputed market valuation of AWAC is the market capitalization of Alumina (\$2.8 billion) divided by 40%.

¹⁶⁸ Alcoa, Annual Report (10-K) 2013.

¹⁶⁹ Alumina, Annual Report (10-K) 2013.

¹⁷⁰ Alumina, Annual Report (10-K) 2014.

¹⁷¹ *In the Matter of Alcoa Inc.*, SECURITIES EXCHANGE ACT OF 1934 Release No. 71261 / January 9, 2014.

¹⁷² \$46.2 million was due immediately, with the remaining to be paid in four installments of \$32.2 million.

ing the firm’s payments to 2014 using the average U.S. firm’s weighted average cost of capital, results in a discounted value of \$152.6 million, or a savings of roughly \$22.4 million.

Together, the DOJ and SEC settlements collected far less from Alcoa than Alcoa’s estimated profits from the bribery scheme.

Olympic Pipeline

In 1999, a gas pipeline owned by Olympic Pipeline ruptured, killing three young people in a public park. In 2003 Olympic entered into a consent decree to pay \$5 million in civil penalties (this was in addition to private settlements with the families of the children and other fines). The consent decree stated that:

“The United States **has substantially reduced Olympic’s civil penalty** and agreed to a payment schedule based on financial information that Olympic provided during settlement discussions demonstrating that **Olympic lacks the economic ability to pay a larger penalty.**”¹⁷³

While not in the consent decree, Olympic’s case may have been strengthened by claims that it was “critical to Western Washington’s economy, as it transports most of this region’s retail gasoline and is the only method of transporting jet fuel to Seattle Tacoma International Airport.” and that Without bankruptcy protection, Olympic would have to barge its fuel products at a much greater environmental risk.¹⁷⁴

The agreement further stipulated that the fine was payable in installments over five years.

The concerns about Olympic’s financial position seem reasonable—less than three months later Olympic filed for Chapter 11 bankruptcy protection. Olympic’s bankruptcy petition listed \$106 million in assets and \$401 million in liabilities. Under bankruptcy proceedings, prepetition regulatory fines are paid pro rata with other general unsecured creditors.

To properly understand the incidence of the liability, it is important to understand Olympic’s financing. Olympic was a joint venture that at the time was entirely owned by British Petroleum (62.5% stake) and Shell (37.5% stake). Olympic’s funding was also unique in that it was 100% funded through debt.¹⁷⁵ Of Olympic’s liabilities, \$148 were loans or loan guarantees from BP and Shell.¹⁷⁶ The vast majority of the remaining liabilities listed in the bankruptcy filing are claims made by oil companies for losses that they suffered when the pipeline shut down following the accident. Importantly, most of the claims come from a single company, Arco, which was a subsidiary of BP.

This financing structure meant that Olympic was entirely owned by BP and Shell. Furthermore, almost all of Olympic’s debts were owed to BP and Shell. In a typical bankruptcy, shareholders lose their investments and the value of the remaining assets pass to creditors. However, in this case, the shareholders and creditors are the same entities.¹⁷⁷ This means that the effect of reducing liability because “Olympic lack[ed] the economic ability to pay a larger penalty,” was to effectively reduce liability on Olympic’s two multi-billion dollar parents. These companies were able to avoid liability by exploiting the government’s perception that Olympic was unable to pay.

Olympic was a limited liability company. Since it was not publicly traded, an equity issuance would not have been an easy solution. However, the intuition of Section 5 still applies—the goal of the government

¹⁷³ *U.S. v. Shell Pipeline Company LP fka, Equilon Pipeline Company LLC, and Olympic Pipeline Company*. (Consent Decree) W.D. Wa. (Civil Action No. CV-02-1178R). Emphasis added.

¹⁷⁴ Miletich, Steve, “Olympic Pipeline seeks bankruptcy.” *The Seattle Times* (Mar. 28, 2003). This claim conflates financial distress with the firm ceasing all operations.

¹⁷⁵ Olympic Pipe Line Co., Wash. Util. & Transp. Comm’n., Order Granting Interim Relief, In Part, Docket No. TO-011472, at 7.

¹⁷⁶ Seattle Times article.

¹⁷⁷ Olympic Pipe Line Co., Wash. Util. & Transp. Comm’n., Order Granting Interim Relief, In Part, Docket No. TO-011472, at 7-8. (noting that near-100% debt financing is not unusual in the pipeline industry). For a description of the mechanics of this type of financing, see LoPucki (1996). However, federal law gives regulators the power to demand alternative financing structures, 49 U.S.C. §60111.

should be to impose liability on the firm’s shareholders. In this case, that is equivalent to imposing liability on the firm’s creditors. The public interest would likely have been better served by not reducing Olympic’s fine.

IAV GmbH

IAV GmbH is a German company that engineers and designs automotive systems. IAV worked with Volkswagen to design, test, and implement software to cheat the U.S. testing process.¹⁷⁸ On December 18, 2018 IAV plead guilty for its role in the Volkswagen emissions scandal and was fined \$35 million. Under the sentencing guidelines the base fine is the maximum of the pecuniary gain, the pecuniary loss, and the offense level table.¹⁷⁹ However in the case of IAV, the government never even calculated the base fine, because prosecutors determined “the Guidelines fine range would still be well beyond the Defendant’s ability to pay.”¹⁸⁰

The plea agreement explicitly states that the fine calculation should be based on the pecuniary loss caused by IAV’s actions, but that amount is not included. However, the plea agreement does explain that IAV had an offense level of 41, yielding a base fine of \$72,500,000. This means that the true pecuniary loss was more than this. Ultimately, the government determined that:

“It is readily ascertainable that **the Defendant cannot and is not likely to become able (even on an installment schedule) to pay the minimum guideline fine.** The Offices and the Defendant agree that, pursuant to U.S.S.G. §8C3.3(b), reducing the fine to \$35,000,000.00 based on Defendant’s inability to pay is not more than necessary to avoid substantially jeopardizing the continued viability of the Defendant.”¹⁸¹

Around the time of the fine, IAV had low earnings, making only \$12.6 million in earnings after tax in 2018. At this rate it would take three years to pay the \$35 million fine and could have taken considerably longer to pay a non-reduced fine from IAV’s earnings.¹⁸²

However, a closer look at IAV’s financials draws into question the determination if inability to pay. At the end of 2018 (two weeks after the fine was imposed), IAV had current assets of \$404.9 million and current liabilities of \$345.6 million.¹⁸³ This \$59.3 of net current assets meant that IAV did not have a very large asset buffer over the coming year.

However, looking at total assets, IAV’s financial position looks stronger, with the firm having a book valuation of \$266.5 million. Therefore, the \$35 million fine was a significant fraction of the firm’s book value (13%), but may not have risen to the level where any additional fine would be “substantially jeopardizing the continued viability of the Defendant.”

Looking at the value of IAV’s equity makes it appear more likely that IAV could have paid a larger fine. IAV is a private limited company under German law and is jointly owned by five manufacturers and suppliers from the automotive industry.¹⁸⁴ Using the financial reports of these shareholders, it is possible

IAV	
Balance Sheet (millions \$)	
Current Assets	404.9
Total Assets	682.8
Current Liabilities	345.6
Total Liabilities	416.3
Net Current Assets	59.3
Total Equity (Book Value)	266.5
Market Capitalization (imputed)	944.2
Penalty Imposed (millions \$)	35

¹⁷⁸ *U.S. v. IAV GmbH*. (Plea Agreement) E.D. Mi. 16-CR-20394 (Dec. 18, 2018).

¹⁷⁹ USSG §8C2.4.

¹⁸⁰ Under USSG §8C2.2, no precise determination of the fine is required if it is clearly beyond the means of the defendant to pay.

¹⁸¹ *U.S. v. IAV GmbH*. (Plea Agreement) E.D. Mi. 16-CR-20394 (Dec. 18, 2018). Emphasis added.

¹⁸² IAV GmbH, Sustainability Report, 2018.

¹⁸³ Continental Automotive GmbH, Annual Report, 2018.

¹⁸⁴ The ownership is: Volkswagen AG 50%, Continental Automotive GmbH 20%, Schaeffler Technologies AG & Co. KG 10%, Freudenberg SE 10%, and SABIC Innovative Plastics B.V. 10%.

to impute the market capitalization of IAV. At the end of 2018, Continental Automotive's 20% equity stake in IAV was valued at \$188 million.¹⁸⁵ This means that the imputed value of IAV two weeks after the fine was imposed was over \$944 million. This indicates that IAV could have paid a considerably larger fine.

WorldCom

On July 21, 2002, WorldCom filed for bankruptcy after an enormous accounting fraud came to light. By mid-2003 creditors were seeking compensation in the bankruptcy courts, shareholders and employees were engaged in private class actions, and the Department of Justice was criminally investigating those who perpetrated the fraud. While these other cases were being pursued, the Securities and Exchange Commission (SEC) entered into a settlement agreement with WorldCom to resolve securities fraud charges. The settlement agreement was approved by Judge Jed Rakoff who summarized the key issues:

“This case raises fundamental questions about how market regulators, and the courts, should respond when criminals use the vehicle of a public company to commit a massive fraud. While the persons who perpetrated the fraud can be criminally prosecuted, the exposure of the fraud often creates liquidity pressures that can drive the company into bankruptcy, leaving unsecured creditors with little and shareholders with nothing. Innocent employees may find their jobs in jeopardy, and, if the company is very large, entire segments of the market may be disrupted. In a situation where immense financial suffering is therefore likely, is there nothing government regulators can do to restore equilibrium?”¹⁸⁶

Unlike the other cases that I have discussed, WorldCom was already going through bankruptcy proceedings at the time that the SEC fine was being determined. Judge Rakoff wanted to ensure that the firm would be reorganized through Chapter 11 proceedings instead of being liquidated through Chapter 7 proceedings. With this in mind, he characterized the trade-off as follows:

“What, then, is the proper monetary penalty? From the Commission's standpoint, it must be one large enough to reflect the magnitude of the fraud and yet not so large as to force the company into liquidation and thereby undercut the Commission's own intensive efforts to reform the company through injunctive relief”

What also makes the case unique is that Judge Rakoff mandated that the fine be paid partially through an equity issuance in the reorganized company:

“WorldCom's obligations under the Commission's judgment shall be deemed to be satisfied by the company's payment of \$500,000,000 in cash and by its transfer of common stock in the reorganized company having a value of \$250,000,000 to a distribution agent to be appointed by the District Court. The supplemental relief, if approved, would allow victims of the fraud to share in the potential upside of owning WorldCom common stock when it emerges from bankruptcy . . . Under the terms of the proposed settlement, the funds paid and the common stock transferred by WorldCom to satisfy the Commission's judgment will be distributed to victims of the company's fraud, pursuant to Section 308 (Fair Funds For Investors) of the Sarbanes-Oxley Act of 2002.”¹⁸⁷

The WorldCom ruling remained contentious. Section 308(a) of the Sarbanes-Oxley Act gives the SEC the opportunity to pay any penalty that it receives to shareholder victims instead of the SEC. But because WorldCom's bankruptcy was certain, any money transferred to shareholders took money out of the pockets of creditors. Many argued that WorldCom should be “punished” and liquidated. The Senate Judiciary Committee held hearing on the WorldCom bankruptcy in which committee members discussed, among other things, the collateral consequences of bankruptcy and liquidation. Senator Chuck Schumer pressed

¹⁸⁵Continental Automotive GmbH, Annual Report, 2018.

¹⁸⁶S.E.C. v. WorldCom, Inc., 273 F.Supp.2d 431 (2003)

¹⁸⁷S.E.C. v. WorldCom, Inc., Release No. 1810 (2003)

the witnesses on the relative culpability of shareholders, creditors, and workers and asked who should bear the costs:

“[N]obody is saying the creditors committed the fraud, encouraged the fraud, [or] participated in the fraud. But these are all these bankruptcy proceedings, and all of these are very difficult balancing acts, and in the law **we often hold that somebody who is not fully to blame, but might have been more in a position to do something to stop it, not being fully culpable, but not being fully removed, should suffer more than somebody who is totally removed . . . I guess a stockholder would be more directly involved, per se, even if it is a small little stockholder, than a debtor, [or] a worker . . . what about all the workers who lose their jobs and things like that, their pensions, et cetera?”**¹⁸⁸

¹⁸⁸The WorldCom Case: Looking at Bankruptcy and Competition Issues. United States Senate Committee on the Judiciary, July 22, 2003.

B Federal Policies on Collateral Consequences

This appendix contains a sampling of policies that allow or mandate that officials take firms' financial conditions into account when assessing penalties. This list is far from comprehensive, as there are many laws and regulations that I have found that are not on the list. My goal in this appendix is to show that policies around firms' financial positions span a wide variety of federal departments and agencies.

To understand the coverage of the policies of the agencies and departments below, I collected data from Good Jobs First's Violation Tracker, which has data on fines imposed by governmental agencies. Examination reveals that most of the monetary value of fines are imposed by a small number of agencies. The one hundred largest fines imposed since 2000 were imposed by just 11 agencies.¹⁸⁹ Each of these 11 agencies has policies that allow or mandate that firms' financial positions are taken into account when imposing penalties.

Because the largest fines are outliers, I consider smaller fines as well. I therefore sum the monetary value of fines imposed by agency. I find that 94.7% of the monetary value of all fines imposed were imposed by just eleven agencies,¹⁹⁰ that have policies to take collateral consequences into account. Extending the analysis to all of the agencies on the list that follows, I find that over 96.3% of the total monetary value of all fines imposed at the federal level were imposed by agencies, departments, or commissions with policies in place to take into account collateral consequences.

This does not imply that all, or even the majority, of violations take collateral consequences into account. Agencies are vast enterprises, and different policies guide different aspects of agency decision making. Nonetheless, the list below indicates that the consideration of the financial consequences of imposing liability is widely spread throughout the federal government.

¹⁸⁹These agencies are Department of Justice, Environmental Protection Agency, Federal Housing Finance Agency, Federal Trade Commission, Food and Drug Administration, Office of the Comptroller of the Currency, Consumer Financial Protection Bureau, Bureau of Industry and Security, Commodity Futures Trading Commission, National Highway Traffic Safety Administration, and Securities and Exchange Commission.

¹⁹⁰In descending order of the total monetary value of fines imposed: Department of Justice (48.6%), Environmental Protection Agency (15.3%), Federal Housing Finance Agency (8.9%), Securities and Exchange Commission (6%), Food and Drug Administration (4.3%), Office of the Comptroller of the Currency (2.8%), Commodity Futures Trading Commission (2.6%), Consumer Financial Protection Bureau (1.9%), Federal Trade Commission (1.8%), Federal Reserve (1.3%), and National Highway Traffic Safety Administration (0.7%). The data from violation tracker also includes fines levied by state governments, so these 11 agencies in fact make up more than 94.7% of total federal fines. The high proportion of fines attributed to the Department of Justice is in part explained by multiagency referrals.

Table 3: A Selection of Policies Dealing with Collateral Consequences

Agency / Department	Policy
Department of Justice	<i>The U.S. Attorney’s Manual</i> , 9-28.300 – Principles of
Department of Justice (Antitrust)	Federal Prosecution of Business Organizations
Department of Justice (Tax)	15 U.S.C. §16(e)(1)
Department of Justice (Civil)	<i>Department of Justice, Criminal Tax Manual</i> . ¹⁹¹
United States Sentencing Commission	28 C.F.R. §0.160(a)(2)
Environmental Protection Agency	United States Sentencing Guidelines §8C3.3
	Clean Air Act Stationary Source Civil Penalty Policy,
	Environmental Protection Agency, October 25, 1991.
	§II(A)(3)b
Consumer Financial Protection Bureau	12 U.S.C. §5565(3); 15 U.S.C. §1607(3); 15 U.S.C.
	§1717(a)
Securities and Exchange Commission	15 U.S.C. §78u-2(d)
Commodity Futures Trading Commission	17 C.F.R. §143.5
Federal Reserve	“Civil Money Penalties and the Use of the Civil
	Money Penalty Assessment Matrix.” ¹⁹²
Federal Trade Commission	15 U.S.C. §45(m)(1)(C)
Federal Housing Finance Agency	12 U.S.C. §4636(c)(2)
Federal Deposit Insurance Corporation	12 U.S.C. §1818(i)(2)(G)
Department of Health and Human Services	45 C.F.R. §160.408(d)
Mining Safety and Health Administration	30 C.F.R. §100.3(a)(vi); 30 C.F.R. §100.3(h)
Department of Defense	32 C.F.R. §767.25
Consumer Product Safety Commission	15 U.S.C. §2069(b)
Department of Energy	10 C.F.R. Pt. 824, App. A (VII)(2)(d)
Department of Homeland Security	33 C.F.R. §159.321(c)
Food and Drug Administration	21 U.S.C. §335b(b)(2)
Department of Transportation (National	49 C.F.R. §578.8(b)(7) Civil penalty factors under 49
Highway Transportation Administration)	U.S.C. Chapter 301
Department of the Treasury (Office of the	“OCC Policies and Procedures Manual” 5310-3 p. 6
Comptroller of the Currency)	
Department of Commerce (Bureau of Indus-	15 U.S.C. §5408(b)(2)
try and Security)	

¹⁹¹ Available at <https://www.justice.gov/sites/default/files/tax/legacy/2006/02/28/05ctax.pdf>.

¹⁹² Available at: <https://www.federalreserve.gov/boarddocs/srletters/1991/SR9113.HTM>.

References

- Admati, A. and M. Hellwig (2014). *The Bankers' New Clothes: What's Wrong with Banking and What to Do about It-Updated Edition*. Princeton University Press.
- Admati, A. R. (2014). The compelling case for stronger and more effective leverage regulation in banking. *The Journal of Legal Studies* 43(S2), S35–S61.
- Admati, A. R., P. M. DeMarzo, M. F. Hellwig, and P. Pfleiderer (2018). The leverage ratchet effect. *The Journal of Finance* 73(1), 145–198.
- Aghion, P., O. Hart, and J. Moore (1992). The economics of bankruptcy reform. Technical report, National bureau of economic research.
- Agrawal, A. K. and D. A. Matsa (2013). Labor unemployment risk and corporate financing decisions. *Journal of Financial Economics* 108(2), 449–470.
- Alexander, C. R. (1999). On the nature of the reputational penalty for corporate crime: Evidence. *The Journal of Law and Economics* 42(S1), 489–526.
- Alexander, C. R., J. Arlen, and M. A. Cohen (1999). Regulating corporate criminal sanctions: Federal guidelines and the sentencing of public firms. *The Journal of Law and Economics* 42(S1), 393–422.
- Alexander, C. R., J. Arlen, and M. A. Cohen (2000). Evaluating trends in corporate sentencing: How reliable are the us sentencing commission's data. *Fed. Sent'g Rep.* 13, 108.
- Alexander, C. R. and M. A. Cohen (2015). The evolution of corporate criminal settlements: An empirical perspective on non-prosecution, deferred prosecution, and plea agreements. *Am. Crim. L. Rev.* 52, 537.
- Altman, E. I. (1984). A further empirical investigation of the bankruptcy cost question. *the Journal of Finance* 39(4), 1067–1089.
- Andrade, G. and S. N. Kaplan (1998). How costly is financial (not economic) distress? evidence from highly leveraged transactions that became distressed. *The journal of finance* 53(5), 1443–1493.
- Ang, J. S., J. H. Chua, and J. J. McConnell (1982). The administrative costs of corporate bankruptcy: A note. *The Journal of Finance* 37(1), 219–226.
- Arlen, J. (2012). Corporate criminal liability: Theory and evidence. *Research Handbook on the Economics of Criminal Law* 144, 152–53.
- Arlen, J. and R. Kraakman (1997). Controlling corporate misconduct: An analysis of corporate liability regimes. *NYUL Rev.* 72, 687.
- Asquith, P., R. Gertner, and D. Scharfstein (1994). Anatomy of financial distress: An examination of junk-bond issuers. *The Quarterly Journal of Economics* 109(3), 625–658.
- Atkinson, N. (2020a). Avoiding corporate liability through strategic capital structure.
- Atkinson, N. (2020b). Do corporations profit from breaking the law? evidence from environmental violations.
- Atkinson, N. (2020c). If not the index funds, then who? *Berkeley Business Law Journal* 17(1), 44–90.
- Badawi, A. B. and E. de Fontenay (2019). Contractual complexity in debt agreements: The case of ebitda. *Available at SSRN 3455497*.

- Bank, S. A., B. R. Cheffins, and H. Wells (2016). Executive pay: What worked. *J. Corp. L.* 42, 59.
- Bebchuk, L. A. and J. M. Fried (2003). Executive compensation as an agency problem. *Journal of economic perspectives* 17(3), 71–92.
- Bebchuk, L. A., R. Kraakman, and G. Triantis (2000). Stock pyramids, cross-ownership, and dual class equity: the mechanisms and agency costs of separating control from cash-flow rights. In *Concentrated corporate ownership*, pp. 295–318. University of Chicago Press.
- Becker, G. S. (1968). Crime and punishment: an economic approach. *Journal of political economy* 76(2), 169–217.
- Benmelech, E., N. K. Bergman, and R. J. Enriquez (2012). Negotiating with labor under financial distress. *The Review of Corporate Finance Studies* 1(1), 28–67.
- Bentham, J. (1789). *An introduction to the principles of morals and legislation*. Clarendon Press.
- Berle, A. A. and G. G. C. Means (1932). *The modern corporation and private property*. Transaction publishers.
- Bernstein, S., E. Colonnelli, X. Giroud, and B. Iverson (2018). Bankruptcy spillovers. *Journal of Financial Economics*.
- Bernstein, S., E. Colonnelli, and B. Iverson (2019). Asset allocation in bankruptcy. *The Journal of Finance* 74(1), 5–53.
- Borisova, G., K. John, and V. Salotti (2013). The value of financing through cross-border asset sales: Shareholder returns and liquidity. *Journal of Corporate Finance* 22, 320–344.
- Brav, A., W. Jiang, F. Partnoy, and R. Thomas (2008). Hedge fund activism, corporate governance, and firm performance. *The Journal of Finance* 63(4), 1729–1775.
- Bris, A., I. Welch, and N. Zhu (2006). The costs of bankruptcy: Chapter 7 liquidation versus chapter 11 reorganization. *The journal of finance* 61(3), 1253–1303.
- Bulow, J. I. and J. B. Shoven (1978). The bankruptcy decision. *The Bell Journal of Economics*, 437–456.
- Burgard, S. A., J. E. Brand, and J. S. House (2007). Toward a better estimation of the effect of job loss on health. *Journal of health and social behavior* 48(4), 369–384.
- Calomiris, C. W., A. Orphanides, and S. A. Sharpe (1997). Leverage as a state variable for employment, inventory accumulation and fixed investment. In *Asset Prices and the Real Economy*, pp. 169–196. Springer.
- Campello, M., J. R. Graham, and C. R. Harvey (2010). The real effects of financial constraints: Evidence from a financial crisis. *Journal of financial Economics* 97(3), 470–487.
- Charles, K. K. and M. Stephens, Jr (2004). Job displacement, disability, and divorce. *Journal of Labor Economics* 22(2), 489–522.
- Che, Y.-K. and K. E. Spier (2008). Strategic judgment proofing. *The RAND Journal of Economics* 39(4), 926–948.
- Coffee, J. C. J. (1980). Making the punishment fit the corporation: The problems of finding an optimal corporation criminal sanction. *N. Ill. UL Rev.* 1, 3.
- Davis, S., T. W. VON, et al. (2011). Recessions and the costs of job loss. *Brookings papers on economic activity* 2011(2), 1–72.

- Davis, S. J., R. J. Faberman, and J. Haltiwanger (2012). Labor market flows in the cross section and over time. *Journal of Monetary Economics* 59(1), 1–18.
- Davydenko, S. A., I. A. Strebulaev, and X. Zhao (2012). A market-based study of the cost of default. *The Review of Financial Studies* 25(10), 2959–2999.
- deHaan, E., D. Larcker, and C. McClure (2019). Long-term economic consequences of hedge fund activist interventions. *Review of Accounting Studies* 24(2), 536–569.
- Demiroglu, C. and C. M. James (2010). The information content of bank loan covenants. *The Review of Financial Studies* 23(10), 3700–3737.
- Doherty, N. A. and C. W. Smith Jr (1993). Corporate insurance strategy: The case of british petroleum. *Journal of Applied Corporate Finance* 6(3), 4–15.
- Dyck, A. and L. Zingales (2004). Private benefits of control: An international comparison. *The journal of finance* 59(2), 537–600.
- Eckbo, B. E., R. W. Masulis, and Ø. Norli (2007). Security offerings. In *Handbook of empirical corporate finance*, pp. 233–373. Elsevier.
- Eckbo, E. B. and M. Kissner (2015). Does tradeoff theory explain high-frequency debt issuers?
- Economist, T. (2019, Mar). Should the world worry about america’s corporate-debt mountain? *The Economist*.
- Elliott, W. B. and H. Songur (2016). Authorized shares: To limit, or not to limit, that is the question. Technical report, Working Paper.
- Elsby, M. W., B. Hobijn, and A. Sahin (2010). The labor market in the great recession. Technical report, National Bureau of Economic Research.
- Equilar (2017). Ceo pay trends.
- Falato, A. and N. Liang (2016). Do creditor rights increase employment risk? evidence from loan covenants. *The Journal of Finance* 71(6), 2545–2590.
- Farber, H. S. et al. (2005). What do we know about job loss in the united states? evidence from the displaced workers survey, 1984–2004. *Economic Perspectives* 29(2), 13–28.
- Ganor, M. (2011). The power to issue stock. *Wake Forest L. Rev.* 46, 701.
- Garoupa, N. (2000). Corporate criminal law and organization incentives: a managerial perspective. *Managerial and Decision Economics* 21(6), 243–252.
- Gertner, R. and D. Scharfstein (1991). A theory of workouts and the effects of reorganization law. *The Journal of Finance* 46(4), 1189–1222.
- Gibbons, R. and L. F. Katz (1991). Layoffs and lemons. *Journal of labor Economics* 9(4), 351–380.
- Giroud, X. and H. M. Mueller (2015a). Capital and labor reallocation within firms. *The Journal of Finance* 70(4), 1767–1804.
- Giroud, X. and H. M. Mueller (2015b). Firm leverage and unemployment during the great recession. Technical report, National Bureau of Economic Research.
- Giroud, X. and H. M. Mueller (2018). Firm leverage and regional business cycles. Technical report, National Bureau of Economic Research.
- Gordon, J. N. (2006). The rise of independent directors in the united states, 1950-2005: Of shareholder value and stock market prices. *Stan. L. Rev.* 59, 1465.
- Graham, J. R., H. Kim, S. Li, and J. Qiu (2019). Employee costs of corporate bankruptcy. Technical report, National Bureau of Economic Research.

- Grossman, S. J. and O. D. Hart (1980). Takeover bids, the free-rider problem, and the theory of the corporation. *The Bell Journal of Economics*, 42–64.
- Gruber, J. (1997). The consumption smoothing benefits of unemployment insurance. *The American Economic Review* 87(1), 192.
- Grullon, G., Y. Larkin, and R. Michaely (2019). Are us industries becoming more concentrated? *Review of Finance* 23(4), 697–743.
- Gyo Lee, Y., X. Garza-Gomez, and R. M. Lee (2018). Ultimate costs of the disaster: Seven years after the deepwater horizon oil spill. *Journal of Corporate Accounting & Finance* 29(1), 69–79.
- Hall, R. F. (2009). Remedies of disgorgement and restitution. In J. T. O’Reilly, J. P. Hanlon, R. F. Hall, E. Lewis, and S. L. Jackson (Eds.), *Punishing Corporate Crime: Legal Penalties for Criminal and Regulatory Violations*. Oxford University Press.
- Hanka, G. (1998). Debt and the terms of employment. *Journal of Financial Economics* 48(3), 245–282.
- Hansmann, H. and R. Kraakman (2001). The end of history for corporate law. *Georgetown Law Journal* 89(2), 439.
- Hart, O. and J. Moore (1998). Default and renegotiation: A dynamic model of debt. *The Quarterly Journal of Economics* 113(1), 1–41.
- Helliwell, J. F. (2003). How’s life? combining individual and national variables to explain subjective well-being. *Economic modelling* 20(2), 331–360.
- Hölmstrom, B. (1979). Moral hazard and observability. *The Bell journal of economics*, 74–91.
- Hotchkiss, E. S. (1995). Postbankruptcy performance and management turnover. *The Journal of Finance* 50(1), 3–21.
- Hotchkiss, E. S., K. John, R. M. Mooradian, and K. S. Thorburn (2008). Bankruptcy and the resolution of financial distress. In *Handbook of Empirical Corporate Finance*, pp. 235–287. Elsevier.
- Hsu, J. W., D. A. Matsa, and B. T. Melzer (2018). Unemployment insurance as a housing market stabilizer. *American Economic Review* 108(1), 49–81.
- Ivashina, V. and B. Vallee (2019). Weak credit covenants. *Available at SSRN 3218631*.
- Jackson, R. J. J. and C. Honigsberg (2014). The hidden nature of executive retirement pay. *Virginia Law Review*, 479–522.
- John, K., L. H. Lang, and J. Netter (1992). The voluntary restructuring of large firms in response to performance decline. *The Journal of Finance* 47(3), 891–917.
- Kang, J.-K. and A. Shivdasani (1997). Corporate restructuring during performance declines in japan. *Journal of Financial Economics* 46(1), 29–65.
- Karpoff, J. M., J. R. Lott, Jr, and E. W. Wehrly (2005). The reputational penalties for environmental violations: Empirical evidence. *The Journal of Law and Economics* 48(2), 653–675.
- Karpoff, J. M. and J. R. Lott Jr (1993). The reputational penalty firms bear from committing criminal fraud. *The Journal of Law and Economics* 36(2), 757–802.
- Katz, L. F. and B. D. Meyer (1990). Unemployment insurance, recall expectations, and unemployment outcomes. *The Quarterly Journal of Economics* 105(4), 973–1002.
- Korteweg, A. (2010). The net benefits to leverage. *The Journal of Finance* 65(6), 2137–

2170.

- Laycock, D. (1993). The triumph of equity. *Law and Contemporary Problems* 56(3), 53–82.
- Lee, I., S. Lochhead, J. Ritter, and Q. Zhao (1996). The costs of raising capital. *Journal of Financial Research* 19(1), 59–74.
- LoPucki, L. M. (1996). The death of liability. *Yale LJ* 106, 1.
- Matheson, J. H. (2008). The modern law of corporate groups: An empirical study of piercing the corporate veil in the parent-subsidiary context. *NCL Rev.* 87, 1091.
- Matsa, D. A. (2010). Capital structure as a strategic variable: Evidence from collective bargaining. *The Journal of Finance* 65(3), 1197–1232.
- Matsa, D. A. (2018). Capital structure and a firm’s workforce. *Annual Review of Financial Economics* 10, 387–412.
- Mellow, C. (2017, Nov). The incredible shrinking bond covenant. *Institutional Investor*.
- Modigliani, F. and M. H. Miller (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review* 48(3), 261–297.
- Myers, S. C. and N. S. Majluf (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics* 13(2), 187–221.
- Newman, H. A. and D. W. Wright (1990). Strict liability in a principal-agent model.
- Ofek, E. (1993). Capital structure and firm response to poor performance: An empirical analysis. *Journal of financial economics* 34(1), 3–30.
- Opler, T. C. and S. Titman (1994). Financial distress and corporate performance. *The Journal of finance* 49(3), 1015–1040.
- Philippson, T. (2019). *The Great Reversal: How America Gave Up on Free Markets*. Harvard University Press.
- Polinsky, A. M. and S. Shavell (1993). Should employees be subject to fines and imprisonment given the existence of corporate liability? *International Review of Law and Economics* 13(3), 239–257.
- Reindl, J., N. Stoughton, and J. Zechner (2017). Market implied costs of bankruptcy. Available at SSRN 2324097.
- Reisel, N. (2014). On the value of restrictive covenants: Empirical investigation of public bond issues. *Journal of Corporate Finance* 27, 251–268.
- Rose, J. M. (2007). Corporate directors and social responsibility: Ethics versus shareholder value. *Journal of Business Ethics* 73(3), 319–331.
- Shapira, R. and L. Zingales (2017). Is pollution value-maximizing? the dupont case. Technical report, National Bureau of Economic Research.
- Sharpe, S. A. (1994). Financial market imperfections, firm leverage, and the cyclicity of employment. *The American Economic Review* 84(4), 1060–1074.
- Shavell, S. (1986). The judgment proof problem. *International review of law and economics* 6(1), 45–58.
- Shavell, S. (1997). The optimal level of corporate liability given the limited ability of corporations to penalize their employees. *International Review of Law and Economics* 17(2), 203–213.
- Stevens, A. H. and J. Schaller (2011). Short-run effects of parental job loss on children’s academic achievement. *Economics of Education Review* 30(2), 289–299.

- Sullivan, D. and T. Von Wachter (2009). Job displacement and mortality: An analysis using administrative data. *The Quarterly Journal of Economics* 124(3), 1265–1306.
- Sundaram, R. K. and D. L. Yermack (2007). Pay me later: Inside debt and its role in managerial compensation. *The Journal of Finance* 62(4), 1551–1588.
- Sykes, A. O. (1983). The economics of vicarious liability. *Yale LJ* 93, 1231.
- Towner, M. (2016). Debt and bargaining outcomes: Evidence from us hospitals. *Available at SSRN 2600660*.
- van Deventer, D. (2015, Apr). Bp: Default probabilities have risen and the implied rating is at its lowest level in a decade.
- Weiss, L. A. (1990). Bankruptcy resolution: Direct costs and violation of priority of claims. *Journal of Financial Economics* 27(2), 285–314.
- White, M. J. (1980). Public policy toward bankruptcy: Me-first and other priority rules. *The Bell Journal of Economics*, 550–564.