european corporate governance institute

ecgi

Can Stakeholder Orientation Improve Inventory Efficiency? Evidence from a Quasi-Natural Experiment

Finance Working Paper N° 664/2020
June 2020

Yunxiao Liu
Shanghai University SILC Business School
Woochan Kim
Korea University Business School, AICG and ECGI

© Yunxiao Liu and Woochan Kim 2020. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

This paper can be downloaded without charge from:
https://doi.org/10.67929/ecgi-fin-664-2020

european corporate governance institute

ECGI Working Paper Series in Finance

Can Stakeholder Orientation Improve Inventory Efficiency? Evidence from a Quasi-natural Experiment

Working Paper N° 664/2020

June 2020

Yunxiao Liu
Woochan Kim

© Yunxiao Liu and Woochan Kim 2020. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Abstract

This study investigates whether and how firms' stakeholder orientation affects their inventory efficiency as well as financial performance. Using U.S. state legislatures' staggered adoption of constituency statutes over a 24-year period (1984–2007) as a quasi-natural experiment, we show that greater stakeholder orientation significantly increases manufacturing firms' inventory efficiency. We also find that this result is stronger in firms that can benefit the most from stakeholder orientation: firms facing dynamic environments, high labor intensity, or low customer concentration. Further mediation analysis reveals that the improvement in inventory efficiency is an important channel through which stakeholder orientation enhances firm value, thus providing evidence that stakeholder orientation decreases optimal inventory level. Additional analyses show that the improvement in inventory efficiency after constituency statutes adoption also holds for retailing firms, although to a lesser extent. Finally, our results survive a battery of robustness tests.

Keywords: constituency statutes, stakeholder orientation, CSR, inventory efficiency, firm performance

JEL Classifications: G39, M11

Yunxiao Liu
Assistant Professor
Shanghai University SILC Business School
Jiading Campus, 20 Chengzhong Rd., Jia Ding District,
Shanghai, China
e-mail: liuyunxiao@shu.edu.cn

Woochan Kim*
Professor of Finance
Korea University Business School, Department of Finance
Anam, Seongbuk
Seoul 136-701, Korea
phone: +822 3290 2816
e-mail: wckim@korea.ac.kr

*Corresponding Author

Can Stakeholder Orientation Improve Inventory Efficiency?
Evidence from a Quasi-natural Experiment

by

Yunxiao Liu,[1] Woochan Kim,[2]

Abstract

This study investigates whether and how firms' stakeholder orientation affects their inventory efficiency as well as financial performance. Using U.S. state legislatures' staggered adoption of constituency statutes over a 24-year period (1984–2007) as a quasi-natural experiment, we show that greater stakeholder orientation significantly increases manufacturing firms' inventory efficiency. We also find that this result is stronger in firms that can benefit the most from stakeholder orientation: firms facing dynamic environments, high labor intensity, or low customer concentration. Further mediation analysis reveals that the improvement in inventory efficiency is an important channel through which stakeholder orientation enhances firm value, thus providing evidence that stakeholder orientation decreases optimal inventory level. Additional analyses show that the improvement in inventory efficiency after constituency statutes adoption also holds for retailing firms, although to a lesser extent. Finally, our results survive a battery of robustness tests.

Keywords: constituency statutes; stakeholder orientation; CSR; inventory efficiency; firm performance

[1] Assistant Professor, Shanghai University SILC Business School; e-mail: liuyunxiao@shu.edu.cn.
[2] Corresponding Author. Professor of Finance, Korea University Business School; Research Associate, European Corporate Governance Institute (ECGI); e-mail: wckim@korea.ac.kr.

Electronic copy available at: https://ssrn.com/abstract=3547940

1. Introduction

During the past few decades, lean thinking philosophy has garnered the most attention from both practitioners and academia in the field of operations management. An extensive body of literature based on surveys (e.g., Inman and Mehra, 1992; White, 1993; Callen et al., 2000; Fullerton et al., 2003) as well as secondary data (e.g., Chen et al., 2005; Rumyantsev and Netssine, 2007[b]; Swamidass, 2007; Capkun et al., 2009; Eroglu and Hofer, 2011) shows that lean practice (e.g., higher inventory efficiency) is associated with better firm performance (therefore higher shareholder value) as it eliminates waste and improves process efficiency.[1]

Given the importance of lean production, identifying strategies for improving leanness can lead to valuable managerial implications. We argue one such strategy is through socially responsible actions. The critical role of corporate social responsibility (CSR) in shaping firms' optimal inventory level stems from the fact that it shields firms from the negative influence of environmental dynamism---the most dominant force in the external environment that can shape firms' decision and performance (Keats and Hitt, 1988)[2]. As written by Goll and Rasheed (204):

> In fast, changing, and unpredictable environments, socially responsible behavior helps the organization to gain support from various external stakeholder groups. In such environments, firms more proactively seek social legitimacy, mainly because such legitimacy provides them with some protection from the unpredictabilities they face.

Specifically, as the resource dependence theory suggests, socially responsible actions help

[1] Several recent studies, including Chen et al. (2005) and Eroglu and Hofer (2011), have identified non-linearity in the relationship between inventory efficiency and firm performance.

[2] By making it difficult for firms to assess future changes, forecast their potential influence, and plan responses (Patel et al., 2013), highly dynamic environments have been widely accepted to have a negative association with firm performance. For example, Azadegan et al. (2013) find that environmental dynamism has a negative impact on the relationship between lean production and financial performance. Similarly, Kovach et al. (2015) show that, in an unstable environment, operational slack (the opposite of leanness) is associated with better performance.

Electronic copy available at: https://ssrn.com/abstract=3547940

the firm obtain critical resources from different stakeholders (e.g., employees, customers, and suppliers) in highly dynamic environments and reduce the risk of losing these resources amid unpredictable events that could hurt the interests of some stakeholder groups (e.g., product quality problems, stock-outs) (Wang et al., 2008). Facing negative shocks, some stakeholders are even willing to help firms with good CSR track record (Lins et al., 2017)[3]. In the context of operations management, this means such firms can reduce their need to hold just-in-case inventory: improved relationship with suppliers can enhance firms' resilience to negative supply chain shocks, and allow them to carry lower level of raw materials; better relationship with employees can attract skilled labor and increase production capability, therefore reduce the need to hold more work-in-process inventory (Lieberman et al., 1999; Chen et al., 2005); catering into customers' interest can increase customer loyalty, and enable firms to hold fewer finished goods even when facing higher uncertainty level (Cachon and Olivares, 2010).

In addition, it is well documented that stakeholder-friendly actions facilitate information exchange between firms and their various stakeholders (including customers and suppliers). This is especially valuable in a dynamic environment where information processing is difficult (Milliken, 1987). As argued theoretically by Milgrom and Robert (1988), communication with stakeholders such as suppliers and customers can serve as a substitute for stocking inventory. For example, improved communication can synchronize the scheduling of upstream and downstream production, thus reducing the need for inventory holdings.

Despite the strategic importance of stakeholder orientation in determining firms' inventory levels, the literature offers surprisingly little evidence related to this matter. Barcos et al. (2013) appears to be the only study that utilizes a comprehensive sample to examine the relationship between socially responsible actions and corporate inventory policy. However, the study treats

[3] Using the 2008-2009 financial crisis as a proxy for negative shock, the study shows that socially responsible firms experience better operational performance, raise more capital, and have superior stock performance.

Electronic copy available at: https://ssrn.com/abstract=3547940

these actions as a simple reflection of the interests of various stakeholder groups and examines whether the political processes among them affect corporate inventory holdings. It does not view stakeholder orientation as a strategic choice firms make to increase inventory efficiency, which is the focus of this study.

To empirically identify the influence of socially responsible actions on optimal inventory level, the most challenging task is to solve endogeneity problems, since the two are likely to be jointly determined during firms' decision-making process. For example, several unobservable firm characteristics, including higher managerial ability, could lead to both an efficient inventory level and more socially responsible actions. If this is the case, an apparently positive relation between the two could be spurious. A reverse causality issue could also occur in which higher inventory efficiency may lead to better firm performance, in turn enabling firms to devote more resources to the pursuit of stakeholders' interests.

To address the problems mentioned above, we exploit the staggered adoption of constituency statutes in 35 U.S. states, which allows firms' boards of directors to consider stakeholders' interests when making business decisions. This constitutes a quasi-natural experiment, wherein the variations in the levels of firms' devotion to stakeholders other than shareholders are exogenous. This empirical setting has two additional features that make it suitable for examining our research question. First, the staggered nature of the passage of constituency statutes in different states allows us to bypass the potential identification challenges when using a single-shock difference-in-differences; this is important because certain biases and noises could be confounded with the shock that directly influences inventory efficiency and thus contaminate the results (Roberts and Whited, 2013). Second and more importantly, constituency statutes, like many other corporate laws, are adopted at the state of incorporation. Thus, when a state passes constituency statutes, all the firms incorporated in that state are influenced, even if located in a different state. This unique feature helps to alleviate the concern that specific shocks to a state and year could

Electronic copy available at: https://ssrn.com/abstract=3547940

constitute an omitted factor that affects firms' socially responsible behavior and inventory efficiency simultaneously, given that many firms are incorporated in state different from the state of their headquarters (Bertrand and Mullainathan, 2003).[4] To ensure that the adoption of constituency statutes is exogenous to firms' inventory policy, we perform a validity test wherein we show that state-level average inventory efficiency does not predict the passage of the statutes, suggesting that neither the probability nor the timing of statutes adoption is driven by individual firms' inventory policy.

Focusing on a sample of 5,026 U.S. manufacturing firms from 1979 to 2012, we perform a difference-in-differences analysis in which the treatment sample consists of firms incorporated in states that adopted constituency statutes. To further alleviate endogeneity concerns, we conduct the analysis in a rigorous way by adding both industry × year and (operating) state × year fixed effects. The former controls for unobserved time-varying heterogeneity across industries, which is essential given that inventory management practices are industry-specific (Eroglu and Hofer, 2011). The latter controls for time-varying differences in local conditions (e.g., economic and political conditions).

Our baseline result shows that the enactment of the statutes leads to an economically significant 4.2% increase in inventory turnover for the treatment firms relative to firms incorporated in states that did not pass such statutes, indicating that stakeholder orientation improves inventory efficiency. Importantly, we demonstrate that the pre-treatment trends between the two firm groups are indistinguishable and that most of the constituency statutes' impact on inventory efficiency happens after the passage of the statutes, suggesting a causal influence of stakeholder orientation. Moreover, the result remains intact after a battery of robustness tests: when we use different measures of inventory efficiency, focus on different subsamples, control for different combinations

[4] According to Bertrand and Mullainathan (2003), about three-quarters of firms are not incorporated in the state in which they are headquartered.

Electronic copy available at: https://ssrn.com/abstract=3547940

of fixed effects, and consider the potential impact of other important law changes during our sample period.

Building on the baseline result, we next explore the impact of stakeholder attention on disaggregated components of inventories: raw materials, work-in-process, and finished goods. As mentioned earlier, we hypothesize that stakeholder-friendly provisions can have a universally positive influence on the efficiency of all the three components by catering to suppliers, employees, and customers. We find evidence supporting this argument. The passage of constituent statutes is shown to result in a higher turnover of raw material, work-in-process, and finished goods, although the impacts are heterogeneous. Finished goods inventory efficiency experienced the highest improvement, followed by work-in-process and raw materials in that order.

After confirming the impact of stakeholder orientation on inventory efficiency, we further examine the mechanisms underlying our findings: why and how stakeholder-friendly actions improve inventory performance. We conduct two tests. First, we investigate whether the effect stems from the role of stakeholder-friendly policies in alleviating environmental uncertainty by dividing our sample based on firms' level of environmental dynamism. Consistent with our prediction, the results show that the effect of stakeholder orientation comes mainly from the firms operating in a dynamic environment. Second, we evaluate the potential channels through which stakeholder attention can increase firms' resilience to dynamic environment, allowing them to improve inventory performance. We focus on two types of stakeholders: employees and customers.[5] If stakeholder-friendly actions increase inventory efficiency by improving employee engagement, we should observe a stronger effect of stakeholder attention in firms relying more on human capital (i.e., labor-intensive industries). Also, if customer relationship is an important channel, we should

[5] While it would also be interesting to investigate the effect of stakeholder orientation through the supplier relationship, we lack the data needed to perform an empirical test. We thus leave this question to future studies.

Electronic copy available at: https://ssrn.com/abstract=3547940

observe a stronger effect of stakeholder attention in firms in which relationships with customers are difficult to manage (i.e., firms with lower customer concentration). Our findings provide supporting evidence for these arguments. After the passage of constituency statutes, we find greater improvement in inventory efficiency for labor-intensive firms, as well as firms with lower customer concentration.

Before concluding the paper, one important question that remains is whether the improvement in inventory efficiency caused by constituency statues adoption is value-enhancing, or equivalently, whether the state-level law change leads to lower optimal inventory that firms need to hold. To answer this question, we perform a mediation analysis and the answer is yes: after confirming that stakeholder orientation increases manufacturing firms' financial performance, we show that one important channel for its value-enhancing role is through improvement in inventory efficiency. Specifically, more than 16% of the increase in firm value (Tobin's Q) after the statutes adoption can be explained by the reduction in inventory level.

As a final step, we investigate whether our main finding that stakeholder orientation improves inventory efficiency also holds for retailing firms, especially given the increased attention on the issue in recent years (Gaur et al., 2005; Koschat 2008; Chuang et al., 2019). We do identify an increased inventory efficiency level for retailers after the adoption of constituency statues, although to a lesser extent compared to their manufacturing counterparts.

Our study makes several contributions to the operations management literature. First, by using a quasi-natural experiment regarding constituency statutes adoption, we uncover the casual impact of stakeholder attention on optimal inventory efficiency, which is typically hard to identify due to the endogenous nature of stakeholder policy. In doing so, we address calls in the operations management literature for the study of "different efficiency enhancing alternatives to provide additional guidelines to firms" (Modi and Mishra, 2011). Additionally, while most of the studies on the factors that improve operational efficiency focus on internal factors like techniques, methods,

Electronic copy available at: https://ssrn.com/abstract=3547940

and organization (Fullerton and McWatters, 2001; Pajagopalan and Malhotra, 2001; Cachon and Terwiesch, 2009), we underscore the importance of external factors, such as constituency statutes.

Second, our study is related to the literature linking inventory efficiency to financial performance (e.g., Chen et al., 2005; Rumyantesv and Netssine, 2007; Swamidass, 2007; Capkun et al., 2009; Eroglu and Hofer, 2011; Azadegan et al., 2013; Eroglu and Hofer, 2014; Kovach et al., 2015). We contribute to this literature by showing that the linkage is stronger in firms with greater stakeholder orientation.

Our study is also related to the literature on the value-relevance of corporate social responsibility (CSR).[6] This literature has focused on various channels, including innovation (Flammer and Kacperczyk, 2016), access to finance (Cheng et al., 2014), cost of capital (Gao et al., 2019), and merger performance (Deng et al., 2013). Our study uncovers an alternative channel: while Cremers et al. (2019) confirms that constituency statutes adoption lead to improvement in firm value, our results show that one potential channel for this improvement is through the production process (i.e., by improving inventory efficiency).

The remainder of the paper is organized as follows. Section 2 reviews the literature and provides some institutional background about constituency statutes. Section 3 describes the data, sample, and empirical design. Section 4 presents and discusses our empirical results. Finally, Section 5 concludes the paper.

2. Literature Review and Institutional Background

2.1 Literature Review

An extensive body of literature in the operations management field discusses the importance of inventory management (e.g., Metters, 1997; Anderson et al., 2006). For example, one strand of

[6] However, another strand of literature argues that CSR typically originates from agency problems and represents a wealth transfer from shareholders to stakeholders (e.g., Pagano and Volpin, 2005).

Electronic copy available at: https://ssrn.com/abstract=3547940

literature focuses on the underlying factors driving corporations' inventory investment, including gross margin, capital intensity, and sales surprise (Gaur et al., 2005), demand uncertainty and procurement lag (Rumyantsev and Netessine, 2007[b]), time relative to fiscal year end (Lai, 2008; Hoberg et al., 2017), competition (Olivares and Cachon, 2009), customer concentration (Ak and Patatoukas, 2016), and supplier concentration (Casalin et al., 2017).

Several studies also investigate the determinants of disaggregated inventory components. For example, Lieberman et al. (1999) show that certain managerial actions influence the three components of inventory holdings—raw materials, work-in-process, and finished goods—but in different ways. Specifically, they find that inventory-reducing methods (e.g., JIT) influence work-in-process and finished goods but not raw materials. On the other hand, they find that communications with suppliers and customers reduce raw materials and finished goods but not work-in-process. Focusing on firms in the automotive industry, Cachon and Olivares (2010) show that finished goods inventory is determined by production flexibility and the number of dealerships. Regarding the time trend of inventory holdings, several studies document a generally decreasing pattern in the overall inventory level of public U.S. firms over the past decades, but heterogeneous across different components. Most of the reduction is found to come from improvements in work-in-process inventories, followed by raw materials, while finished goods inventories barely change (Chen et al., 2005; Capkun et al., 2009).

Recently, a group of studies investigated the relationship between inventory performance and financial performance—that is, the value relevance of inventory efficiency. These studies generally find a positive relationship between inventory and financial performance, albeit a non-monotonic one. For example, Chen et al. (2005) examine the relationship between inventory efficiency and long-term stock returns for public U.S. manufacturing firms and find a curvilinear pattern: Firms with the highest inventory level exhibit the lowest returns, firms with the lowest inventory level exhibit ordinary returns, and firms with slightly below-average inventory exhibit

Electronic copy available at: https://ssrn.com/abstract=3547940

the best returns. Rumyantsev and Netessine (2007[a]) investigate the influence of responsive inventory management on firms' profitability and find a negative relation between a deviation from optimal inventory levels and ROA. Swamidass (2007) analyzes the influence of the Toyota Production System (TIP) on inventory performance, showing that firms with higher inventory turnover display better financial performance as measured by an updated version of Altman's Z-score. Eroglu and Hofer (2011) develop a new measure of inventory performance, the empirical leanness indicator (ELI), by taking into account industry-specific inventory management practices. Their study finds an inverted U-shaped relation between inventory efficiency level and ROA (return on sales (ROS)), suggesting the existence of an optimal inventory level. By contrast, Cannon (2008) finds no significant relationship between inventory turnover and financial performance using a hierarchical lineal regression model. In addition to overall inventory, a few studies examine the link between the efficiency of various inventory components and firm performance. For example, Capkun et al. (2009) find that all three components positively correlate with financial performance: The correlation is highest for raw materials, followed by finished goods and work-in-process.

A few other studies seek to identify the underlying mechanisms moderating the relationship between inventory efficiency and firm performance. One important factor is environmental dynamism. A concept originating in the management literature, "environmental dynamism" refers to changes in firms' external environments that are hard to predict and heighten uncertainty (Dess and Beard, 1984). Keat and Hitt (1988) argue that, among the three environment categories (munificence, dynamism, and complexity), dynamism has the dominant influence on firms' decisions and performance. Several studies find that a dynamic environment has a negative influence on performance (e.g., Keats and Hitt, 1988; Baum and Wally, 2003), since firms find it more challenging to make efficient decisions (e.g., to allocate resources) when facing a high level of environmental dynamism. Borrowing the concept from the management literature, Azadegan et al. (2013) investigate the moderating effect of dynamic environment on the relationship between

Electronic copy available at: https://ssrn.com/abstract=3547940

lean production and financial performance. They find that environmental dynamism weakens the benefit from lean production on financial performance. Similarly, Kovach et al. (2015) show that inventory slack (the opposite of leanness) is associated with better financial performance in an unstable environment. Focusing on retail firms, Chuang et al. (2019) examine the link between inventory efficiency and operational efficiency. Their results show that less leanness is associated with better performance amid high demand uncertainty levels. Contrariwise, Eroglu and Hofer (2014) find that demand uncertainty, an important aspect of environmental dynamism, has only a moderate influence on the relationship between inventory efficiency and financial performance. Recently, a few studies investigate the factors that attenuate the negative influence of environmental dynamism, thus improving inventory efficiency and firm performance. For example, Saldanha et al. (2013) find that in a volatile environment, manufacturing plants using information systems that facilitate collaboration with suppliers and customers display significantly higher inventory efficiency. Similarly, Mishra et al. (2013) argue that information technology can improve data accuracy, reduce speculative managerial behavior, and facilitate information coordination among partners, thus capturing market changes and leading to higher inventory efficiency and better stock performance.

Another strand of literature that analyzes the potential mechanism that weaken the influence of dynamic environment, although not directly tied to inventory efficiency, focuses on socially responsible actions. For example, building on resource dependence theory, Wang et al. (2008) argue that stakeholder engagement helps firms retain critical resources from various stakeholders (e.g., employees, customers, and supplier) in a highly dynamic environment (Frooman, 1999; Berman et al., 2005) and reduces the firm's risk of losing these resources when dealing with unpredictable events that could hurt the interests of some stakeholder groups (e.g., product quality problem and stock-outs; Godfrey, 2005). It is also well-documented that stakeholder-friendly behaviors facilitate information exchange among firm and its various stakeholders (including customers and suppliers;

Electronic copy available at: https://ssrn.com/abstract=3547940

e.g., Howard-Grenville and Hoffan, 2003; Branco and Rodrigues, 2006), which could be valuable in a dynamic environment where information processing is difficult (Milliken (1987). Goll and Rasheed (2004) provide significant evidence about the role of socially responsible actions in mitigating the negative influence of environmental dynamism.

Overall, given the importance of stakeholder orientation for firms in dynamic environments, we need a deeper understanding of its role in shaping firms' inventory efficiency and therefore financial performance. As mentioned earlier, our study tries to fill this gap in the literature by utilizing the exogenous adoption of state-level constituency statutes, which we discuss in more detail below.

2.2 Constituency Statutes

The introduction of state-level constituency statutes started in the 1980s (Ohio was the first state to adopt such a statute in 1984), when the hostile takeover wave revitalized the longstanding debate on the fundamental role of modern corporations: the "shareholder primacy view" verses the "stakeholder orientation view". The former argument originates from a famous article written by Adolf A. Berle in 1931. Its advocates, including Friedman (1970) and Jensen (2001), believe that the pursuit of shareholder value is the exclusive purpose of the corporation, because shareholders are the only residual claimers while other stakeholders are protected by contractual claims against the firm. Historically, the shareholder primacy argument received strong support from U.S. courts, such that boards of directors were legally required to perform their fiduciary duties with only the shareholders in mind.

However, the merger wave brought the shareholder view under scrutiny (Gao et al., 2019). These transactions, despite their positive influence on shareholders' interests, imposed substantial value loss on other stakeholders, including employees, suppliers, and customers. Against this background, the stakeholder orientation view, first proposed by Dodd (1932), attracted renewed

Electronic copy available at: https://ssrn.com/abstract=3547940

attention, as evidenced by the development of stakeholder theories in the 1980s (e.g., Freeman, 1984). In contrast to the shareholder primacy view, the stakeholder view emphasizes that the firm is also a nexus of explicit and implicit contracts with many different stakeholders, whose interests also need to be represented during the firm's decision-making process. The proponents of this argument sought to change corporate law to reflect their belief that corporations are more than just investment vehicles for the owners of financial capital (Bainbridge, 1992). As a result, 35 U.S. states passed constituency statutes between 1984 and 2007 (see Table 1).[7]

Although not universal across states, the core principle of the constituency statutes is that corporate leaders should run their firms in the interests of both shareholders and stakeholders. For example, Florida's statute states the following:

> In discharging his or her duties, a director may consider such factors as the director deems relevant, including the long-term prospects and interests of the corporation and its shareholders, and the social, economic, legal, or other effects of any action on the employees, suppliers, customers of the corporation or its subsidiaries, the communities and society in which the corporation or its subsidiaries operate, and the economy of the state and the nation.[8]

Though these statutes are only permissive in nature, they provide corporate directors with a solid legal foundation for incorporating stakeholders' interests when running the firm (Flammer and Kacperczyk, 2016; Gao et al., 2019; Cremers et al., 2019). For instance, as documented by Orts

[7] One state, Nebraska, passed constituency statutes in 1988; they were repealed in 1995 and then re-adopted in 2007.

[8] The 2018 Florida Statutes (607.0830): http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0600-0699/0607/Sections/0607.0830.html.

Electronic copy available at: https://ssrn.com/abstract=3547940

(1992) in the case of Baron v. Strawbridge & Clothier, the court upheld a board's defensive decision to reclassify its stock in response to the threat of a tender offer by applying Pennsylvania's statute. The court decided that "it was proper for the company to consider the effects the… tender offer would have, if successful, on the Company's employees, customers and community."

Several studies find evidence that firms increased their attentiveness to stakeholders after the passage of constituency statutes. For example, Luoma and Goodstein (1999) show that these statutes led to more board representation for stakeholders.

3. Data, Sample, and Methodology

3.1 Data and Sample

We obtain financial data from Compustat and stock price information from the Center for Research in Security Prices (CRSP). Information on firms' historical incorporation is acquired from two data sources: We use the Compustat-CRSP merged database for the period after 2008 and Bill McDonald's website for the period from 1994 to 2007.[9] These data contain all the information in the header section of 10-K/Qs obtained from the SEC-EDGAR website. For the period before 1994 (the first year for which EDGAR information is available), we assume firms did not change their state of incorporation.[10]

Given the importance of inventory policy for manufacturing firms, we focus on all the publicly listed U.S. firms in the manufacturing sector (SIC codes 2000–4999) following the previous literature. Our sample period spans from 1979, five years before the first adoption of constituency statutes (in Ohio in 1984) to 2012, five years after the re-enactment of the statutes by

[9] https://sraf.nd.edu/data/augmented-10-x-header-data/.

[10] We believe this is a valid assumption because changes of incorporation are rare. For example, none of the 587 Forbes 500 companies changed their state of incorporation between 1984 and 1991, as documented by Cheng et al. (2004).

Electronic copy available at: https://ssrn.com/abstract=3547940

Nebraska in 2007.[11] We exclude firm-year observations with negative total assets, sales, and cost of goods sold. To prevent our results from being driven by outliers, we winsorize all firm-level variables at the 1% and 99% levels. This leaves us with a final sample of 5,026 unique firms covering 1979 to 2012, with 63,604 firm-year observations.

Our primary variable of interest is a dummy variable, *Constituency Statutes*, which takes a value of one for firms incorporated in states that adopt constituency statutes, and zero otherwise. The key dependent variable is *Inventory Efficiency*, defined as the ratio between the cost of goods sold and average inventory.[12] Here, average inventory is the arithmetic mean of inventory levels at the current and previous fiscal year-end. If a firm uses LIFO accounting, we convert the firm's LIFO inventory into FIFO inventory by adding the LIFO reserve (available from Compustat) to the LIFO inventory (i.e., FIFO Inventory = LIFO Inventory + LIFO Reserve).

In contrast to several previous studies (e.g., Chen et al. 2005; Modi and Mishra, 2011; Mishra et al., 2013), we do not adjust our inventory efficiency measure at the industry level in our main analysis because, as will be described later, we control for industry × year fixed effects to address the fact that inventory management practices can be industry-specific (while at the same time controlling for other time-variant industry-specific shocks). Nonetheless, in one of our robustness tests, we use an alternative inventory efficiency measure that is standardized at the four-digit SIC code level.

In addition to inventory efficiency, we also investigate the value relevance of stakeholder orientation in terms of financial performance. We focus on two performance measures extensively used in the literature: *ROA*, computed as net income over total assets; and Tobin' *Q*, calculated as

[11] We also experiment with different sample periods, including three years before the first and three years after the last adoption of constituency statutes (1981–2010) and one year before the first and one year after the last adoption of constituency statutes (1983–2008). Our results (available upon request) remain intact.

[12] Unreported analyses (available upon request) show that the results remain intact if we scale inventory using sales instead of cost of goods sold, or use current fiscal year-end inventory instead of the average value.

Electronic copy available at: https://ssrn.com/abstract=3547940

the market valuation of the firm (proxied by the market value of equity plus the book value of debt) divided by its replacement costs (proxied by the book value of assets). Unlike ROA, which is based on realized earnings, Tobin's *Q* is a forward-looking measure accounting for future cash flows of the company.

We also control for a number of firm characteristics that are known determinants of inventory efficiency. Specifically, we control for firm size (logged total assets), leverage (total liability over total assets), gross margin (the difference in sales and cost of goods sold, scaled by sales), sales growth (the logged difference between current and lagged sales), and lead time (average number of days between ordering goods and receiving them). We include firm size to control for the potential effect of economies of scale or differing levels of inventory fluctuation between large and small firms (Carpenter el al., 1998, Eroglu and Hofer, 2011). Leverage is also a well-documented determinant of inventory holding (Kashyap et al., 1994; Carpenter et al., 1998). For example, high leverage might diminish firms' ability to finance inventory investments (Carpenter et al., 1998). Gross margin is used to account for inventory underage cost: The higher the gross margin, the greater the profit-loss due to insufficient inventory (Silver et al., 1998). We also control for sales growth which captures growth opportunity and lead time, another important indicator of higher inventory (Rumyantsev and Netessine, 2007[b]). Detailed definitions of the variables are reported in Appendix A.

The first four columns of Table 2 show the summary statistics for the variables. For example, the mean value of inventory efficiency is 5.287, meaning that the cost of goods sold is on average 5.287 times the average inventory level for our sample firms. Slightly more than a quarter of the firm years enter into the treatment sample, as evidenced by the mean value of Constituency Statutes. The sample firms have an average logged total assets of 4.662 (corresponding to a dollar value of 105.8 million) and a book leverage ratio of 0.546. In terms of financial performance, the mean ROA is negative (-0.065), while the firms' average market capitalization is about 1.72 times their book

Electronic copy available at: https://ssrn.com/abstract=3547940

value. The remaining columns provide the pairwise correlation matrix. As shown, there is a statistically significant -0.027 correlation between inventory efficiency and the constituency statutes dummy, which contradicts our argument that attentiveness to stakeholders leads to improved inventory efficiency. However, the magnitude of the coefficient is low, and it does not account for other underlying factors that might have a significant influence on inventory efficiency (e.g., firm-specific characteristics). Additionally, if we decompose inventory into its three separate components (raw materials, work-in-process, and finished goods), the results are highly inconsistent: While raw materials efficiency maintains a negative correlation with the constituency statutes indicator, work-in-process efficiency has a positive correlation. For finished goods, the correlation coefficient is insignificant. These results suggest that the simple correlation results could be spurious. Therefore, to tease out the marginal influence of stakeholder orientation, we use the multivariate regression design outlined below.

3.2 Empirical Design

We use the staggered adoption of constituency statutes across 35 different U.S. states to assess the impact of stakeholder orientation on corporate inventory efficiency; these states passed the statutes at different points in time. This process enables us to exploit the exogenous variation in stakeholder attention for firms incorporated in different states and thus to compare the before/after effect of statutes adoption in the treatment group and the before/after effect in the control group (firms incorporated in non-constituency-statutes-adopting states). Essentially, we closely follow Bertrand and Mullainathan (2003) and perform a difference-in-differences analysis with multiple treatment groups and multiple time periods by estimating the following regression:

Electronic copy available at: https://ssrn.com/abstract=3547940

$$Inventory\ Efficiency_{i,s,l,j,t}$$

$$= \alpha_0 + \alpha_i + \alpha_t + \alpha_l\alpha_t + \alpha_j\alpha_t + \beta Constituency\ Statutes_{s,t}$$

$$+ \theta' Firm\ Characteristics_{i,s,l,j,t} + \varepsilon_{i,s,l,j,t} \quad (1)$$

where i indexes firm, s indexes state of incorporation, l indexes state of operation, j indexes industry, and t indexes year. α_i, α_t, $\alpha_l\alpha_t$, and $\alpha_j\alpha_t$ denote the firm, year, state of operation × year, and industry × year fixed effects, respectively. $Firm\ Characteristics_{i,s,l,j,t}$ stands for a set of time-variant firm characteristics, namely Size, Leverage, Gross Margin, Sales Growth, and Lead Time. $\varepsilon_{i,s,l,j,t}$ denotes the error term. The standard errors are clustered at the incorporation state level to address the potential serial correlations among firms incorporated in the same state. The coefficient of interest is the difference-in-differences coefficient, β, which measures the impact of stakeholder orientation on inventory efficiency. Specifically, β is the estimate of within-firm differences between the years before and after the treatment (firms incorporated in adoption states) relative to the before/after difference without such a treatment (firms incorporated in non-adoption states) after controlling for all the fixed effects (Imbens and Wooldridge, 2009).

As illustrated by Bertrand and Mullainathan (2003), this type of specification possesses at least two appealing features that can help us identify the causal impact of constituency statutes adoption on inventory efficiency. First, given that different states passed the statutes at different times, we have multiple treatment and control groups in our analysis. For example, Florida adopted constituency statutes in 1989. In evaluating the influence of this law change on the inventory efficiency of Florida-incorporated firms (the treatment group), not only are firms incorporated in states that never passed the statutes entered into the control group, but firms incorporated in states that eventually passed the statutes (even if they had not done so as of 1989, such as North Carolina) are also in the control group. According to Angrist and Pischke (2009), this helps reduce the

Electronic copy available at: https://ssrn.com/abstract=3547940

potential bias and noise when relying on one static treatment/control group. Second, in addition to firm fixed effects (controlling for time-invariant, firm-specific characteristics), year fixed effects (controlling for time-variant macroeconomic conditions), and industry × year fixed effects (controlling for time-variant industry-specific shocks), we also include operating state × year fixed effects to address potential local political, social, economic conditions that may influence both inventory efficiency and the passage of constituency statutes. This is possible thanks to the incongruence between the state of incorporation and the state of operations (i.e., the headquarters location) for a large proportion of U.S. public firms (Bertrand and Mullainathan, 2013).

4. Empirical Results

4.1 Validity Test of Adopting Constituency Statutes

One critical assumption of our identification strategy is that the adoption of constituency statutes at the state level is not related to the prevailing inventory efficiency of firms incorporated in the adoption state. As highlighted earlier, constituency statutes were adopted primarily due to the rise of the stakeholder view in the 1980s rather than as a response to inventory efficiency at the firm level. Nevertheless, we conduct validity tests to formally address the potential reverse causality issue.

First, to verify that the pre-existing inventory efficiency level does not influence the probability of statutes adoption, we perform probit regression analyses at the state level wherein the dependent variable is an indicator capturing whether a U.S. state adopts constituency statutes in a specific year. Our variable of interest is one-year lagged inventory efficiency at the state level (i.e., the average of inventory efficiency across firms incorporated in the same state). We additionally control for a number of time-variant political, social, and economic factors at the state level: *Log State Real GDP*, *State Unemployment Rate*, *Log State Population*, *State Real GDP*

Electronic copy available at: https://ssrn.com/abstract=3547940

Growth, and *Republican Governor* (one if the state has a Republican governor and zero otherwise). The first two columns of Panel A in Table 3 show the results. The coefficients of the state-level inventory efficiency measure, *Average Inventory Efficiency*, are small in magnitude and statistically insignificant. Also, the pseudo R-squared in the probit regression is very low at 0.002 when *Average Inventory Efficiency* is the only independent variable, suggesting little explanatory power of prevailing inventory efficiency level. Second, we follow Acharya et al. (2014) and apply a Weibul hazard model to investigate the potential influence of inventory efficiency on the timing of constituency statutes adoption. The dependent variable is the log of the expected time to pass a constituency statute. As in the probit model, the sample consists of all the state-level observations for our sample period, except that a state is dropped from the sample once it passes the constituency statute. After controlling for a set of state characteristics, the results in Columns 3 and 4 of Panel A in Table 3 show that *Average Inventory Efficiency* enters insignificantly, suggesting that the timing of constituency statutes passage is also not affected by corporate inventory efficiency. Overall, these results suggest that the adoption of constituency statutes is not related to the prevailing inventory efficiency of firms incorporated in those states, therefore giving us more confidence that statutes adoptions are likely to be exogenous to local firms' inventory performance before the law change.

A second key presumption underlying our empirical design is that the passage of constituency statutes materially triggers changes in firm behavior in terms of stakeholder attention. One potential concern is that these statutes are only permissive in nature, and that there is no guarantee that firms will increase their attention to stakeholders after the passage of the law. Several previous studies investigate this issue. For example, Luoma and Goodstein (1999) find evidence that companies do increase stakeholder representation on their boards after the adoption of constituency statutes in their incorporation state. Flammer and Kacperczyk (2016) rely on the Kinder, Lydenberg, and Domini (KLD) database to examine the influence of the law change on

Electronic copy available at: https://ssrn.com/abstract=3547940

stakeholder-friendly actions. They find that, after the adoption of constituency statutes, the level of stakeholder attention, as measured by the KLD score, increases significantly. Given that their study focuses on all publicly traded firms, we follow their analyses to see if the same conclusion holds for the manufacturing firms in our sample. Specifically, the KLD database reports firm-level social ratings along several dimensions, of which we select the four that are closely related to our study: customers, employees, environment, and community. For each dimension, the KLD reports the number of strengths and concerns that correspond to the positive and negative actions the firm takes that might influence their stakeholders. Following the literature, we compute two types of stakeholder-friendly action measures using these data: *KLD-Score* and *KLD-Score (Strength)*. *KLD-Score* is computed by first obtaining the net score for each dimension (the difference between the number of strengths and concerns) and then summing it up across all the four dimensions. *KLD-Score* (Strength), on the other hand, focuses only on the number of strengths because of the concern that strengths and concerns might measure completely different things, which could undermine the validity of the net score-based measure. The sample starts in 1991, the first year for which KLD data are available, and ends in 2012, the last year of our sample period. We regress *KLD-Score* and *KLD-Score (Strength)* on *Constituency Statutes*, our treatment dummy, as well as a set of control variables. The results in Panel B of Table 3 show that the coefficients of *Constituency Statutes* are always positive and statistically significant, even if we use different stakeholder-friendly action measures and specifications. Thus, we confirm that constituency statutes enactment leads to a significant increase in stakeholder orientation levels for the manufacturing firms in our sample.

4.2 Stakeholder Orientation and Corporate Inventory Efficiency

4.2.2 Baseline Regression and Subsample Analysis

We start our main analyses by examining whether the adoption of constituency statutes affects firms'

Electronic copy available at: https://ssrn.com/abstract=3547940

inventory efficiency. However, before turning to the estimates of Equation (1), we first visually depict the influence of the passage of these statutes in adopting states relative to non-adopting states. Specifically, following Autor et al. (2006), Acharya et al. (2014), and Cremers et al. (2019), Figure 1 plots the point estimates and 90% confidence intervals of the β_τ parameters from the following regression:

$$Inventory\ Efficiency_{i,s,t} = \delta_i + \theta_t + \sum_{\tau=-5}^{\tau=5} \beta_\tau * Constituency\ Statutes_{s,t}^{\tau} + \varepsilon_{i,s,t} \quad (2)$$

where i, s, t index firm, incorporation state, and year, respectively. $Constituency\ Statutes_{s,t}^{\tau}$ is an indicator variable taking a value of one if year t is τ years apart from the year of constituency statutes adoption in state s. Standard errors are clustered at the incorporated stated level, and the dashed lines are confidence intervals. Essentially, the β_τs show the difference in inventory efficiency for firms incorporated in adopting states compared to firms in non-adopting states during the 11-year period (five years before and five years after) around the adoption of constituency statutes. The y-axis in the graph shows the level of inventory efficiency, and the x-axis shows the time relative to the year of adoption. The graph clearly shows that inventory efficiency increases after the passage of the statutes. Given the wide confidence interval, this jump is not statistically significant. However, it should be noted that this is a result from a regression with no control variables or additional fixed effects.

We present the formal regression results of Equation (1) in Table 4. In Column 1, we do not control for firm characteristics and include only year fixed effects, firm fixed effects, year × operation state fixed effects, and year × industry fixed effects. The coefficient of Constituency Statutes, the indicator of law change, is positive and statistically significant at the 1% level, which suggests that statutes adoption does improve inventory efficiency. Our baseline result is presented in Column 2. After controlling for firm characteristics (Size, Leverage, Gross Margin, Sales Growth, and Lead Time) as well as different fixed effects, the coefficient of Constituency Statutes is 0.219

Electronic copy available at: https://ssrn.com/abstract=3547940

and significant at the 1% level. More importantly, the economic magnitude of the result is also meaningful. Following the adoption of state-level constituency statutes, the inventory efficiency of firms incorporated in the adoption states increases by 4.2% at the mean value of 5.287, as shown in Table 2 (0.219/5.287), or 5.6% at the median value of 3.877 (0.219/3.877).

In the remaining columns of Table 4, we repeat the baseline regression to see if our results hold for different subsamples. Specifically, we first exclude firms incorporated in the state of Delaware from our initial sample. As shown in Column 3, more than half of our sample firms are incorporated in Delaware[13] (the firm-year observations drop from 63,604 to 26,095 if Delaware-incorporated firms are excluded). Since Delaware has never introduced constituency statutes, firms incorporated in that state enter into the control group. Accordingly, if Delaware firms are holding more inventories over time, then the main results shown in Column 2 could be spurious and simply reflect this Delaware trend. The result in Column 3 suggests that this is not the case: After we exclude Delaware-incorporated companies, the coefficient of Constituency Statutes remain positive and significant at the 5% level.

Second, as Table 1 shows, most of the constituency statutes (27 out of 35) were adopted before 1990. Given that our sample period ranges from 1979 to 2012, our sample is imbalanced as we have more "after" than "before" years. To alleviate the concern that our main results are driven by firms incorporated in states that adopted the statutes before 1990, we exclude them from our sample and re-estimate our baseline regression. Column 4 shows the results. After excluding the pre-1990-adoption states, we end up with 45,518 firm-year observations, or 68.4% of our initial sample. However, the coefficient of Constituency Statutes remains positive and highly significant (at the 5% level), suggesting that our results are not affected by the inclusion of the early-adoption states.

[13] This is consistent with the previous finding that more than half of public firms in the U.S. are Delaware-incorporated (Bebchuk and Cohen, 2003).

Electronic copy available at: https://ssrn.com/abstract=3547940

Third, firms may make re-incorporation decisions when facing the passage of constituency statutes; companies that are more stakeholder-friendly may re-incorporate in adoption states, and companies that care more about shareholders' interests may re-incorporate in non-adoption states, which may give rise to self-selection problems. We address this concern by dropping firms that made re-incorporation decisions during our sample period. We show the results in Column 5. Consistent with previous studies, firms that changed their state of incorporation represent a very small fraction of our sample (less than 6%). The coefficient of Constituency Statutes is 0.343 which is statistically significant at the 1% level, confirming that our initial result is not driven by the potential selection issue caused by re-incorporation.

Lastly, we address the potential concern that some of the states never passed constituency statutes during our sample period (i.e., that the firms incorporated in these states always stay in the control group); our results could thus be driven by the unobservable difference between the treatment and control groups. To alleviate this concern, we focus only on the subsample of firms that eventually get treated (i.e., that are incorporated in states that adopted constituency statutes during the sample period) following Bertrand and Mullainathan (2003). After re-estimating our baseline regression in Equation (1), the result in Column 6 shows that the coefficient of Constituency Statutes stays positive and significant, albeit the sample size shrinks by more than a half, indicating that our results are not sensitive to the unobservable differences between firms incorporated in adoption states and those incorporated in never-adoption states.

Taking a closer look at the results, we also see that the control variables generally show the expected effect. First, firm size has a negative and significant coefficient across all samples, suggesting that larger firms face greater inventory fluctuations (Ameer, 2010; Elsayed and Wahba, 2013). Second, leverage is negatively associated with inventory holdings, providing evidence that higher leverage may weaken firms' ability to finance inventory investment (Carpenter et al., 1998). Third, firms' profitability, as proxied by gross margin, shows a negative and significant coefficient.

Electronic copy available at: https://ssrn.com/abstract=3547940

This result is in line with the argument that firms with higher gross margin are more likely to experience larger profit-losses when failing to hold sufficient inventories (underage cost), and therefore use more inventories (Silver et al., 1998; Rumyantsev and Netessine, 2007[b]). Fourth, firms with higher growth opportunity are shown to have higher levels of inventory efficiency, as evidenced by the positive and significant coefficient of sales growth. Finally, as expected, more lead time, or delays, are shown to have a negative impact on inventory efficiency.

Overall, the results in Table 4 provide causal evidence that higher stakeholder orientation, as measured by the passage of constituency statutes, leads to higher levels of corporate inventory efficiency. These results, significant from both the statistical and economic perspectives, provide strong support for the main hypothesis of our study.

4.2.3 The Pre-treatment Trends

In gauging the causal influence of stakeholder orientation on inventory efficiency by utilizing the difference-in-differences research design, one critical identifying assumption is the parallel trends assumption, whereby the outcome variable (inventory efficiency) is expected to have similar trends in the treatment and control groups in the absence of the treatment (the adoption of constituency statutes). Therefore, to further examine the validity of the causal interpretation of stakeholder orientation's impact, we assess the dynamics of the treatment effect. Specifically, we re-estimate our baseline regression in Equation (1) by introducing two additional explanatory variables: Constituency Statutes^{-1} and Constituency Statutes^{-2}. These two variables are indicator variables capturing the years relative to the year of constituency statutes adoption. For example, Constituency Statutes^{-1} is set to one to indicate one year before the passage of the statutes and zero otherwise. To assess whether parallel trends exist, one should focus on the coefficients of these two variables: A significant coefficient of either one, or both, would indicate significant differences between the treatment and control groups even before the adoption years.

Electronic copy available at: https://ssrn.com/abstract=3547940

The results are presented in Table 5. Column 1 shows the results for the entire sample. While the coefficient of Constituency Statutes remains positive and significant, the coefficients of Constituency Statutes^{-1} and Constituency Statutes^{-2} are small in magnitude (-0.020 and 0.054, respectively) and statistically indistinguishable from zero. Therefore, no difference in inventory efficiency between the treatment and control groups is identified before the state-level law change, indicating that the parallel trend assumption is satisfied.

In Columns 2 to 5, we replicate the subsample analyses in Table 4, where we exclude Delaware-incorporated firms, firms incorporated in pre-1990-adoption states, re-incorporated firms, and firms incorporated in states that never passed constituency statues. The results are similar to those in Column 1. First, the coefficients of Constituency Statutes maintain their statistical significance (as in Table 4), and the magnitudes of the coefficients do not change much; second, the coefficients of Constituency Statutes^{-1} and Constituency Statutes^{-2} are not significantly different from zero across the subsamples, and the magnitudes of the coefficients are small.

Overall, the results shown in Table 5 suggest that the parallel trends assumption that there is no pre-treatment difference in inventory efficiency between the treatment and control groups is satisfied, confirming that the influence of stakeholder orientation is causal.

4.2.4 Efficiency of Different Inventory Components

A typical manufacturer records three types of inventories: raw materials accounts for the materials and parts purchased from suppliers and used in the production process; work-in-process accounts for partially completed goods, thus reflecting both material costs and labor/overhead costs; and finished goods accounts for the stock of completed goods that are ready for delivery to customers.

While the existing literature generally documents a positive efficiency-to-value relationship for all three inventory components (e.g., Capkun et al., 2009; Eroglu and Hofer, 2011; Isaksson and Seifert, 2014), their determinants are different. For example, raw materials inventory is determined

Electronic copy available at: https://ssrn.com/abstract=3547940

by supplier relations, transaction cost, quality problems, and obsolescence, among others (Hopp and Spearman, 2001; Eroglu and Hofer, 2011); work-in-process inventory mainly relies on firms' production capabilities, including machine layout, employee skills, and process fragility (Hopp and Spearman, 2001; Heizer and Render, 2014); and finished goods inventory depends primarily on customer responsiveness, forecast errors, and production variability (Hopp and Spearman, 2001). As a result, while overall inventory efficiency improved over the past several decades, improvement levels differ across different inventory components. For example, Capkun et al. (2009) show that the decrease in inventory holdings from 1980 to 2005 is driven mainly by the reduction in work-in-process and, to a lesser extent, raw materials, while finished good inventory experienced little change.

Therefore, after the impact of stakeholder orientation on overall inventory efficiency is confirmed, it is worthwhile investigating whether stakeholder attention leads to improvements in efficiency for all three components of inventory. We argue that it does. While the reasons for holding the three types of inventories differ, they all serve as buffers against dynamic environments, albeit at different stages of the production process, with raw materials and finished goods representing technical core buffers, and work-in-process representing interdependent buffers (Bourgeois, 1981; Kovach et al., 2015). By catering to different categories of stakeholders, stakeholder-friendly policies could alleviate the negative influence of environmental dynamism from multiple dimensions, therefore lowering the need to hold all three types of inventory components. For example, improved relationships with suppliers can enhance firms' resilience to negative supply chain shocks, therefore reducing the need to hold more raw materials; improved relationships with customers can increase customer loyalty, therefore reducing the need to hold more just-in-case finished goods; and improved relationships with employees can enhance employee engagement, therefore increasing production capability and reducing the need to hold more work-in-process inventory.

Electronic copy available at: https://ssrn.com/abstract=3547940

To see if this is true, we re-estimate Equation (1) by replacing overall inventory efficiency with the efficiency measures of the three inventory components. Specifically, Raw Material Efficiency is computed as the ratio between cost of goods sold and the average raw materials value between the current and previous fiscal year, adjusted for LIFO inventory accounting; Work-in-Process Efficiency and Finished Goods Efficiency are computed using the same method.[14]

The results are shown in Table 6. One immediate observation from this table is that the sample size shrinks by almost a half. This is due to the fact that not all firms disclose the detailed information on inventory components, which is typically available from the notes to financial statements[15]. To ensure that our results are not driven by the reduction in sample size, we first replicate our baseline regression using this smaller sample. The results in Columns 7 and 8 show that the coefficients of Constituency Statutes are 0.213 and 0.182, which are fairly comparable to the results in the first two columns of Table 4, both in terms of magnitude and statistical significance.

After confirming that our initial results remain intact using this alternative samples, we turn to investigating the influence of constituency statutes adoption on raw material efficiency. As shown in Columns 1 and 2, the coefficients of Constituency Statutes are 0.706 and 0.677 (without and with the inclusion of control variables, respectively), and significant at the 5% level. Given the mean value of 13.133, this result indicates that raw materials efficiency improves by 5.2% after the state-level law change.

As for work-in-process, the coefficient of Constituency Statutes is 2.092 and significant at the 10% level in Column 4, after controlling for firm characteristics. This suggests that, relative to control firms, treatment firms' work-in-process efficiency increases by 6.6% (2.092/31.597) after the adoption of the statutes.

[14] Since LIFO reserve disclosures are not available for disaggregated inventory components, we follow Ak and Patatoukas (2016) and allocate the LIFO reserve based on the value of the three components relative to total inventory.

[15] To the contrary, total inventory are reported on the balance sheet.

Electronic copy available at: https://ssrn.com/abstract=3547940

Finally, we show the results for finished goods efficiency in Columns 5 and 6. After firm-level controls are included, the coefficient of Constituency Statutes is 2.254, suggesting a 14.9% (2.254/15.151) relative increase for firms incorporated in adoption states after the law passage. We argue that this is an important finding which could lead to a valuable managerial implication. Specifically, given the critical role of finished goods efficiency in improving profitability (Capkun et al., 2009; Eroglu and Hofer, 2011; Isaksson and Seifert, 2014) and reducing overhead cost (Andreou et al., 2016), a business strategy that enhances finished goods inventory efficiency may have high value relevance. As the results in Table 5 show, one such strategy is catering to stakeholders' interests.

Overall, the results in Table 5 indicate that the passage of constituent statutes results in a higher turnover of raw materials, work-in-process, and finished goods, though the effects are heterogeneous. Finished goods inventory efficiency experienced the highest improvement, followed by work-in-process and raw materials.

4.2.5 Robustness Tests

We conduct a number of robustness checks to further check the validity of our main result that stakeholder attention improves inventory efficiency. The results are reported in Table 7. In Column 1, we use an alternative measure of inventory efficiency: following Chen et al. (2005), Modi and Mishra (2011), and Mishra et al. (2013), we standardize our original inventory efficiency measure at the four-digit SIC code level to account for industry-specific inventory management practices.[16] Using this new measure of inventory efficiency, Constituency Statutes still has a positive and

[16] The new measure, Industry-adjusted Inventory Efficiency, is calculated as follows: $\frac{Inventory\ Efficiency - \mu_{Inventory\ Efficiency}}{\sigma_{Inventory\ Efficiency}}$, where $Inventory\ Efficiency$ is our original measure, and $\mu_{Inventory\ Efficiency}$ and $\sigma_{Inventory\ Efficiency}$, respectively, stand for the mean and the standard deviation of inventory efficiency for all firms in the same industry in a specific year.

Electronic copy available at: https://ssrn.com/abstract=3547940

significant (5% level) coefficient, suggesting that our results are not driven by a specific measure of inventory efficiency.

Columns 2 and 3 report the results of our baseline regression by sequentially dropping industry × year fixed effects and operating state × year fixed effects. Again, the coefficients of Constituency Statutes remain positive and significant (5% level), indicating that our results are not sensitive to the inclusion of certain fixed effects.

Finally, we also consider potential confounding events. During our sample period, 36 U.S. states adopted antitakeover related laws, namely Business Combination Law (BC Law), Fair Price Law (FP Law), and Control Share Acquisition Law (CSA Law). These laws weaken the market's corporate governance role by insulating managers from the threat of hostile takeovers (Bertrand and Mullainathan, 2003). Therefore, if governance plays a role in determining firms' inventory management policy (as argued by Tribo (2007), Ameer (2010), and Elsayed and Wahba (2013), among others), then our current results could be contaminated by the adoption of these antitakeover laws. To alleviate this concern, we explicitly include an indicator variable for the aforementioned law changes, one at a time, in our baseline regression to perform three horse race tests. As shown in the last three columns of Table 7, the coefficients of Constituency Statutes maintain their significance on at least the 5% level. More importantly, the magnitudes of the coefficients remain the same as those in the second column of Table 4, suggesting that the positive influence of constituency statutes on inventory efficiency is not affected by changes in antitakeover laws.

4.3 Channel Tests

After confirming the impact of stakeholder orientation on inventory efficiency, we explore the underlying mechanism through which the adoption of constituency statutes improves corporate inventory efficiency.

Electronic copy available at: https://ssrn.com/abstract=3547940

4.3.1 Environmental Dynamism and the Influence of Stakeholder Orientation

We argue that the underlying reason for the positive impact of stakeholder attention on inventory performance comes from its strategic function in attenuating the potential negative influence of the dynamic environment. In highly dynamic environments, stakeholder-friendly actions help firms to retain critical resources from various stakeholders—including employees, customers, and suppliers—and reduce their risk of losing these resources when dealing with unpredictable events that could hurt the interests of some stakeholder groups (e.g., product quality problems and stock-outs; Wang et al., 2008). As suggested by the resource dependence theory, this will lower the need to hold more inventories, which could offer a significant uncertainty-reduction benefit. Additionally, catering to different stakeholders can facilitate information exchange between these stakeholders (e.g., suppliers and customers) and the firm. Previous studies such as Milliken (1987) and Milgrom and Robert (1988) suggest that this can serve as a substitute for inventory, thus further increasing the level of inventory efficiency. If our argument holds, then stakeholder-friendly actions, as a strategic firm choice, should be more valuable for firms operating in a highly dynamic environment. Thus, the positive impact of constituency statutes adoption we identified in our main analysis should be stronger for such firms.

To verify the moderating role of dynamic environments on the relationship between stakeholder orientation and inventory efficiency, we employ the well-established measure of environmental dynamism following Dess and Beard (1984) and Pagell and Krause (2004). Specifically, we regress logged sales value at the four-digit SIC-code level on time (year) over a five-year period and obtain our measure of dynamism by taking the antilogarithm of the slope coefficient's standard error. As argued by Keats ad Hitt (1988), higher standard error proxies for greater instability or sales uncertainty: Increased variation in sales makes it more difficult to plan production (Pagell and Krause, 2004). Using this measure, we divide our full sample according to

Electronic copy available at: https://ssrn.com/abstract=3547940

the level of industry-wide environmental dynamism and perform a subsample analysis. Firms in industries with an average environmental dynamism measure that is higher than the global median during our sample period are placed into the higher environmental dynamism subsample; otherwise, they enter into the low environmental dynamism subsample.

Table 8 presents the results. As shown in the left half of the table, for firms operating in relatively stable environments (with low environmental dynamism), the coefficients of Constituency Statutes are still positive across different specifications and subsamples. However, the statistical significance is weaker, and the magnitudes of the coefficients are smaller than their corresponding coefficients in Table 4. However, we observe a completely different pattern for firms in highly dynamic environments. As shown in Columns 7 to 12, the coefficients of Constituency Statutes are highly significant on at least the 5% level. More importantly, the magnitudes of the coefficients in each column are almost twice the size of their counterparts in the low environmental dynamism group. For example, the coefficient of Constituency Statutes for the baseline regression is 0.409 for the high environmental dynamism subsample, which is 2.247 times the same coefficient for the low dynamism subsample. The economic magnitude is also stronger. Again, taking the baseline regression as an example, the coefficient of 0.409 corresponds to a 7.8% increase in inventory efficiency for firms in the high environmental dynamism group (0.409 divided by 5.241, the mean value of inventory efficiency for these firms), almost double the magnitude of the result shown in Table 4.

In summary, the results in Table 7 show that the influence of constituency statutes adoption is much stronger for firms operating in highly dynamic industries, providing supporting evidence for the view that stakeholder orientation increases inventory efficiency by strengthening firms' resilience against dynamic environments.

4.3.2 Role of Employees and Customers

Electronic copy available at: https://ssrn.com/abstract=3547940

If the adoption of constituency statutes increases inventory efficiency by catering to firms' multiple stakeholders, therefore reducing the negative impact of environmental dynamism, then another interesting and important question is what specific types of stakeholder matter. For example, can firms afford to hold lower inventory after the adoption of statutes because they have higher levels of employee engagement, customer loyalty, or supplier satisfaction? To uncover these detailed channels, we would need granular data on stakeholder relationships, which are unfortunately unavailable. Therefore, we try to provide some indirect evidence that some stakeholder groups do indeed matter.

Our argument is as follows. If increased attention to a certain type of stakeholder can lead to superior inventory efficiency, the relationship with this stakeholder type must be of critical importance to the firm and need better management. One can hardly imagine that catering more to stakeholders who have nothing to do with the firm's operation can result in a real change in corporate behavior, including inventory performance. Therefore, if improving relationships with certain types of stakeholders helps improve inventory efficiency, then we should observe a stronger impact of constituency statutes adoption for firms where this relationship is important and needs further attention.

Due to data limitations, we leave out suppliers and consider two types of stakeholders: employees and customers. First, if stakeholder-friendly actions increase inventory efficiency by improving employee engagement, then we should observe a stronger impact of stakeholder attention in firms that rely more on human capital, i.e. labor intensive firms (Barney et al., 2001; Flammer and Luo, 2017). To measure labor intensity, we follow Agrawal and Matsa (2013) and use the ratio of labor and pension expenses to sales (with data taken from Compustat). Specifically, we define as high (low) labor-intensity industries those industries with average labor intensity levels (computed as the arithmetic mean of labor intensity across all firms operating in the same industry in a specific year) that are higher (lower) than the global median during our sample period. We re-

Electronic copy available at: https://ssrn.com/abstract=3547940

estimate the first two regressions in Table 4 separately for high and low labor-intensity firms. The first four columns of Table 8 show the results.

As expected, we observe a sharp difference in the coefficients of Constituency Statutes between high and low labor-intensity firms. For firms operating in low labor-intensity industries, the coefficient of Constituency Statutes is 0.163 if we do not include any firm controls, and it decreases to only 0.037 if firm characteristics are controlled for. None of these coefficients is statistically different from zero. However, the corresponding coefficients for high labor-intensity firms are 0.472 and 0.451, which are significant at the 1% level. In sum, these results suggest that the positive influence of constituency statutes passage is driven mainly by high labor-intensity firms, where the management of human capital resources is likely to be more important, therefore providing indirect evidence that better employee engagement may be one of the underlying channels.

Second, if improved customer relationship is an important channel for the increase in inventory efficiency, then the influence of constituency statutes enactment should be stronger for firms whose relationships with their customers need more attention. One such type of firm may be those with a diversified group of customers, for which customer relationships are difficult to manage. For example, firms in B2C sector typically have larger customer base, therefore customer orientation is especially important for them in facing high level of demand uncertainties. On the other hand, it is easier for companies to build good relationships and achieve better coordination with their customers when the number of customers is limited (for example, B2B firms); this leads to higher inventory efficiencies by mitigating the negative influence of demand uncertainty (Ak and Patatoukas (2016). Thus, we divide our full sample based on firms' customer concentration levels and perform a subsample analysis. In measuring customer concentration, we follow Patatoukas (2012) and compute a Herfindahl–Hirschman index by taking into account two aspects of customer diversification: the number of major customers and their relative importance in the

Electronic copy available at: https://ssrn.com/abstract=3547940

firms' total revenue.[17] Firms with an average customer concentration level lower (higher) than the global median over our sample period are placed into the low (high) customer concentration subsample.

The results are shown in the last four columns of Table 8. Consistent with our predictions, the coefficients of Constituency Statutes appear to be positive and significant (at the 5% level) only for firms with low customer concentration, thus may face greater difficulty in bonding and cooperating with their customers. On the contrary, for firms with high customer concentration levels, we find no evidence of an improvement in inventory efficiency after the adoption of the statutes: The coefficients of Constituency Statutes are actually negative, although statistically insignificant.[18] Overall, these results suggest that, in addition to better employee engagement, improved customer relationships may be another channel through which the state-level law change leads to better inventory performance.

4.4 Stakeholder Orientation, Firm Performance, and the Mediating Role of Inventory Efficiency

Up to this point, our results show that catering to the interests of stakeholders lower manufacturing firms' inventory level. An important question that remains is whether this improvement in inventory efficiency is value-enhancing, or equivalently, whether constituency statutes adoption leads to lower optimal inventory that firms need to hold. In this subsection, we try to answer this question by investigating the mediating role of inventory efficiency in the stakeholder orientation-financial performance relationship.

---

[17] Specifically, customer concentration is calculated using the following equation: $\text{Customer Concentration}_{it} = \sum_{j=1}^{J}(\frac{Sales_{ijt}}{Sales_{it}})^2$, where i, j, t index the focal firm, its customer, and year, respectively. $Sales_{ijt}$ reflects firm i's sale to customer j in year t, and $Sales_{it}$ represents firm i's total sales in year t. Major customer information is extracted from Compustat Segment files.

[18] Similarly, we divide our sample in to B2C and Non-B2C firms, assuming that customer relationship is difficult to manage for B2C firms. Results in Appendix B confirm that the improved inventory efficiency after the statues adoption mainly comes from the former group.

Electronic copy available at: https://ssrn.com/abstract=3547940

While several studies already identify a general positive relationship between stakeholder friendly actions and firms' financial performance (Flammer and Kacperczyk, 2016; Cremers et al., 2019), we first examine whether this finding holds for our manufacturing sample. We do this by regressing two extensively used financial performance measures, ROA and Tobin'Q, on *Constituency Statutes*. When ROA is the dependent variable, the results in the first column of Table 10 show that Constituency Statutes have a negative coefficient, albeit statistically insignificant. However, when Tobin's Q is used as dependent variable, the results in the second column show that the coefficient of *Constituency Statutes* is positive and significant (at the 5% level). These results are generally consistent with the findings of Flammer and Kacperczyk (2016). One possible explanation is that catering to stakeholders, while increasing firm value in the long run (Tobin's Q), could be associated with some costs and show a neutral impact on financial performance in the short term (ROA). Also, given that environmental dynamism moderates the influence of stakeholder orientation on inventory efficiency (as shown in Table 8), we divide our sample into low and high environmental dynamism subsamples and the results in the last four columns show that the coefficient of *Constituency Statutes* is positive and significant only for firms operate in dynamic environment. For these firms, statutes adoption leads to better financial performance even if performance is measure by ROA. Overall, the results in Table 10 suggest that the adoption of constituency statutes is value-enhancing for manufacturing firms, and most of the improvement in financial performance comes from firms facing dynamic environment.

Next, we use mediation analysis to evaluate whether the improved inventory efficiency we observe before serves as an important channel for the superior financial performance after the statutes adoption. As shown in the path diagram of Figure 3, we decompose the causal relation between stakeholder orientation and financial performance into two channels: an indirect, or mediated, channel of inventory efficiency improvement; and a direct channel that is not explained by the indirect one. The path arrows represent the assumed relations among variables. Specifically,

Electronic copy available at: https://ssrn.com/abstract=3547940

we estimate the following system of equations:

$$Inventory\ Efficiency_{i,s,l,j,t} = \alpha_0 + \alpha_i + \alpha_t + \alpha_l\alpha_t + \alpha_j\alpha_t + \beta Constituency\ Statutes_{s,t} + \theta' Firm\ Characteristics_{i,s,l,j,t} + \varepsilon_{i,s,l,j,t} \quad (3)$$

$$ROA\ (Tobin'sQ)_{i,s,l,j,t} = \alpha_0 + \alpha_i + \alpha_t + \alpha_l\alpha_t + \alpha_j\alpha_t + \lambda Constituency\ Statutes_{s,t} + \delta Inventory\ Efficiency_{i,s,l,j,t} + \theta' Firm\ Characteristics_{i,s,l,j,t} + \varepsilon_{i,s,l,j,t} \quad (4)$$

We focus on three situations where constituency statues adoption significantly improves firm performance measures in Table 10: the entire sample when performance is measured by Tobin's Q, the higher environmental dynamism subsample when performance is measured by either ROA or Tobin's Q. The indirect effect of the inventory efficiency channel can be calculated as the product of β and δ, and the magnitude of the direct effect can be measured by λ. The sum of the two equals to the total effect of statues adoption on financial performance.

The results are shown in Table 11. To save space, we only report the results of Equation (4)[19]. The first thing we observe from the table is that the direct effect, as measured by the coefficients *Constituency Statutes* (λ), is statistically significant in all three columns, suggesting that the causal influence of stakeholder orientation on financial performance does not depend on inventory reduction exclusively. However, the coefficients of Inventory Efficiency (δ) are also positive and significant. Combined with the statistically significant coefficients of *Constituency Statutes* in Equation (3) (β) and Sobel test statistics, this result suggests the existence of the indirect (inventory efficiency improvement) channel. For example, in Colum (1) inventory reduction explains more

[19] The results of Equation (3) is available upon request.

Electronic copy available at: https://ssrn.com/abstract=3547940

than 16% of the increase in financial performance (measured by Tobin's Q) caused by statutes adoption for the entire sample. If we focus on the high environmental dynamism subsample, the percentage of indirect effect over total effect is around 13%, either when performance is measured by ROA or Tobin's Q[20].

In sum, the results in Table 10 and 11 substantiate the argument that the improvement of inventory efficiency after statutes adoption is value-enhancing, suggesting that stakeholder orientation lowers firms' optimal inventory level. The results also confirm that inventory efficiency is an important (although not dominant) channel through which stakeholder friendly actions can increase firm performance.

4.5 Additional Analysis: Influence of Stakeholder Orientation on Retailers' Inventory Efficiency

While the main analysis of this study focuses on manufacturing firms, inventory leanness for retail firms and its performance relevance also received lots of attention in recent years (Gaur et al., 2005; Koschat 2008; Chuang et al., 2019). Thus, in the last part of our study, we investigate whether our main finding that stakeholder orientation improve inventory efficiency holds for retailers. Specifically, we replicate the analysis of Table 4, but using the retailer sample (SIC Code: 52-59).

The results are shown in Appendix C. Like the results in Table 4, the coefficients of *Constituency Statutes* are always positive, and statistically significant in most specifications. The only exception is in Column 6, when we focus only on the eventually treated sample. While the coefficient is positive and comparable in magnitude (1.773) with other columns, it loses significance with this smaller sample[21]. Overall, the results suggest that the positive influence of stakeholder orientation on inventory level also holds for retailing firms, despite their weaker robustness compared to those

[20] One should note that the lower percentage of indirect effect in the high environment dynamism subsample is not due to lower indirect effect per se, but because of a significantly higher total effect.
[21] This could be the potential reason we observe an insignificant coefficient.

Electronic copy available at: https://ssrn.com/abstract=3547940

of manufacturing firms.

5. Conclusion

Does stakeholder orientation meaningfully influence corporate inventory efficiency, one of the most important concepts in operations management? To shed some light on this issue, this study exploits the exogenous shocks arising from the staggered adoption of constituency statutes in 35 U.S. states. Employing a difference-in-differences approach on a primary sample of U.S. public manufacturing firms, we find a significant increase in inventory efficiency for firms incorporated in states that passed constituency statutes relative to firms incorporated in states without such statutes. The results are robust to the inclusion of multilevel fixed effects and a variety of firm-specific controls. They are also not sensitive to alternative dependent variables or changes in sample composition. Supporting a causal interpretation of our finding, the pre-treatment analysis suggests that inventory efficiency changes only after statutes adoption, not before. Further analysis performed by decomposing total inventory into three disaggregated components suggests that stakeholder attention has a universally positive impact on the efficiency of raw materials, work-in-process, and finished goods, albeit finished goods inventory gains the greatest efficiency. Our channel tests show that the positive influence of constituency statutes adoption comes from its role in mitigating the negative impact of environmental dynamism. Better employee engagement and customer relationships may contribute to this positive influence. Finally, our mediation analysis reveals that the improvement in inventory efficiency is an important channel through which stakeholder orientation enhances firm value, thus providing evidence that stakeholder orientation decreases optimal inventory level. Overall, these findings support the notion that catering to stakeholders' interests leads to higher inventory efficiency, which increases firm performance.

To the best of our knowledge, this study provides the first piece of empirical evidence on the relationship between stakeholder orientation and inventory efficiency. In particular, by making

Electronic copy available at: https://ssrn.com/abstract=3547940

use of a quasi-natural experiment, we identify that greater stakeholder attention improves inventory efficiency. Our study also contributes to the literature that links inventory efficiency to financial performance by showing that the linkage strengthens in firms with greater stakeholder orientation. Finally, we contribute to the literature on the value-relevance of corporate social responsibility by discovering a new channel through which socially responsible actions can enhance firm value. Specifically, we find that these actions can increase firm value through the production process channel—by improving inventory efficiency.

Electronic copy available at: https://ssrn.com/abstract=3547940

References

Acharya, Viral V, Ramin P Baghai, and Krishnamurthy V Subramanian, 2014, Wrongful discharge laws and innovation, *The Review of Financial Studies* 27, 301-346.

Agrawal, Ashwini K, and David A Matsa, 2013, Labor unemployment risk and corporate financing decisions, *Journal of Financial Economics* 108, 449-470.

Ak, B Korcan, and Panos N Patatoukas, 2016, Customer-base concentration and inventory efficiencies: Evidence from the manufacturing sector, *Production and Operations Management* 25, 258-272.

Ameer, Rashid, 2010, The role of institutional investors in the inventory and cash management practices of firms in Asia, *Journal of Multinational Financial Management* 20, 126-143.

Anderson, Eric T, Gavan J Fitzsimons, and Duncan Simester, 2006, Measuring and mitigating the costs of stockouts, *Management Science* 52, 1751-1763.

Andreou, Panayiotis C, Christodoulos Louca, and Photis M Panayides, 2016, The impact of vertical integration on inventory turnover and operating performance, *International Journal of Logistics Research and Applications* 19, 218-238.

Angrist, Joshua D, and Jörn-Steffen Pischke, 2008. *Mostly harmless econometrics: An empiricist's companion* (Princeton University Press).

Autor, David H, John J Donohue III, and Stewart J Schwab, 2006, The costs of wrongful-discharge laws, *The Review of Economics and Statistics* 88, 211-231.

Azadegan, Arash, Pankaj C Patel, Abouzar Zangoueinezhad, and Kevin Linderman, 2013, The effect of environmental complexity and environmental dynamism on lean practices, *Journal of Operations Management* 31, 193-212.

Bainbridge, Stephen M, 1991, Interpreting nonshareholder constituency statutes, *Pepperdine Law Review* 19, 971.

Barcos, Lucía, Alicia Barroso, Jordi Surroca, and Josep A Tribo, 2013, Corporate social responsibility and inventory policy, *International Journal of Production Economics* 143, 580-588.

Barney, Jay, Mike Wright, and David J Ketchen Jr, 2001, The resource-based view of the firm: Ten years after 1991, *Journal of Management* 27, 625-641.

Bebchuk, Lucian Arye, and Alma Cohen, 2003, Firms' decisions where to incorporate, *Journal of Law and Economics* 46, 383-425.

Electronic copy available at: https://ssrn.com/abstract=3547940

Berman, Shawn L, Robert A Phillips, and Andrew C Wicks, 2005, Resource dependence, managerial discretion and stakeholder performance, Academy of Management Proceedings (Academy of Management Briarcliff Manor, NY 10510).

Bertrand, Marianne, and Sendhil Mullainathan, 2003, Enjoying the quiet life? Corporate governance and managerial preferences, *Journal of Political Economy* 111, 1043-1075.

Bourgeois III, L Jay, 1981, On the measurement of organizational slack, *Academy of Management Review* 6, 29-39.

Branco, Manuel Castelo, and Lúcia Lima Rodrigues, 2006, Corporate social responsibility and resource-based perspectives, *Journal of Business Ethics* 69, 111-132.

Cachon, Gérard P, and Marcelo Olivares, 2010, Drivers of finished-goods inventory in the US automobile industry, *Management Science* 56, 202-216.

Cachon, Gerard, and Christian Terwiesch, 2006, Matching supply with demand: An introduction to operations management (McGraw-Hill).

Callen, Jeffrey L, Chris Fader, and Itzhak Krinsky, 2000, Just-in-time: A cross-sectional plant analysis, *International Journal of Production Economics* 63, 277-301.

Cannon, Alan R, 2008, Inventory improvement and financial performance, *International Journal of Production Economics* 115, 581-593.

Capkun, Vedran, Ari-Pekka Hameri, and Lawrence A Weiss, 2009, On the relationship between inventory and financial performance in manufacturing companies, *International Journal of Operations & Production Management* 29, 789-806.

Carpenter, Robert E, Steven M Fazzari, and Bruce C Petersen, 1998, Financing constraints and inventory investment: A comparative study with high-frequency panel data, *Review of Economics and Statistics* 80, 513-519.

Casalin, Fabrizio, Gu Pang, Sara Maioli, and Ting Cao, 2017, Inventories and the concentration of suppliers and customers: Evidence from the Chinese manufacturing sector, *International Journal of Production Economics* 193, 148-159.

Chen, Hong, Murray Z Frank, and Owen Q Wu, 2005, What actually happened to the inventories of American companies between 1981 and 2000? *Management Science* 51, 1015-1031.

Cheng, Beiting, Ioannis Ioannou, and George Serafeim, 2014, Corporate social responsibility and access to finance, *Strategic Management Journal* 35, 1-23.

Electronic copy available at: https://ssrn.com/abstract=3547940

Cheng, Shijun, Venky Nagar, and Madhav V Rajan, 2004, Identifying control motives in managerial ownership: Evidence from antitakeover legislation, *The Review of Financial Studies* 18, 637-672.

Chuang, Howard Hao-Chun, Rogelio Oliva, and Gregory R Heim, 2019, Examining the link between retailer inventory leanness and operational efficiency: Moderating roles of firm size and demand uncertainty, *Production and Operations Management*.

Cremers, K.J. Martijn, Scott B. Guernsey, Simone M. Sepe, 2019, Shareholder orientation and firm value, Working paper.

Deng, Xin, Jun-koo Kang, and Buen Sin Low, 2013, Corporate social responsibility and stakeholder value maximization: Evidence from mergers, *Journal of Financial Economics* 110, 87-109.

Dess, Gregory G, and Donald W Beard, 1984, Dimensions of organizational task environments, *Administrative Science Quarterly* 52-73.

Dodd Jr, E Merrick, 1931, For whom are corporate managers trustees, *Harvard Law Review* 45, 1145.

Elsayed, Khaled, and Hayam Wahba, 2013, Reinvestigating the relationship between ownership structure and inventory management: A corporate governance perspective, *International Journal of Production Economics* 143, 207-218.

Eroglu, Cuneyt, and Christian Hofer, 2011, Lean, leaner, too lean? The inventory-performance link revisited, *Journal of Operations Management* 29, 356-369.

Eroglu, Cuneyt, and Christian Hofer, 2014, The effect of environmental dynamism on returns to inventory leanness, *Journal of Operations Management* 32, 347-356.

Flammer, Caroline, and Aleksandra Kacperczyk, 2015, The impact of stakeholder orientation on innovation: Evidence from a natural experiment, *Management Science* 62, 1982-2001.

Flammer, Caroline, and Jiao Luo, 2017, Corporate social responsibility as an employee governance tool: Evidence from a quasi-experiment, *Strategic Management Journal* 38, 163-183.

Freeman, R Edward, 2010. *Strategic management: A stakeholder approach* (Cambridge University Press).

Friedman, Milton, 2007, The social responsibility of business is to increase its profits, in *Corporate ethics and corporate governance* (Springer).

Frooman, Jeff, 1999, Stakeholder influence strategies, *Academy of Management Review* 24, 191-205.

Electronic copy available at: https://ssrn.com/abstract=3547940

Fullerton, Rosemary R, and Cheryl S McWatters, 2001, The production performance benefits from JIT implementation, *Journal of Operations Management* 19, 81-96.

Fullerton, Rosemary R, Cheryl S McWatters, and Chris Fawson, 2003, An examination of the relationships between JIT and financial performance, *Journal of Operations Management* 21, 383-404.

Gao, Huasheng, Kai Li, and Yujing Ma, 2019, Stakeholder orientation and the cost of debt: Evidence from a natural experiment, Working Paper.

Gaur, Vishal, Marshall L Fisher, and Ananth Raman, 2005, An econometric analysis of inventory turnover performance in retail services, *Management Science* 51, 181-194.

Godfrey, Paul C, 2005, The relationship between corporate philanthropy and shareholder wealth: A risk management perspective, *Academy of Management Review* 30, 777-798.

Goll, Irene, and Abdul A Rasheed, 2004, The moderating effect of environmental munificence and dynamism on the relationship between discretionary social responsibility and firm performance, *Journal of Business Ethics* 49, 41-54.

Heizer, J, and B Render, 2014, *Operations management.* England (Pearson Education, Inc).

Hoberg, Kai, Florian Badorf, and Lars Lapp, 2017, The inverse hockey stick effect: An empirical investigation of the fiscal calendar's impact on firm inventories, *International Journal of Production Research* 55, 4601-4624.

Hopp, Wallace J, and Mark L Spearman, 2011. *Factory physics* (Waveland Press).

Howard-Grenville, Jennifer A, and Andrew J Hoffman, 2003, The importance of cultural framing to the success of social initiatives in business, *Academy of Management Perspectives* 17, 70-84.

Imbens, Guido W, and Jeffrey M Wooldridge, 2009, Recent developments in the econometrics of program evaluation, *Journal of Economic Literature* 47, 5-86.

Inman, R Anthony, and Satish Mehra, 1993, Financial justification of JIT implementation, *International Journal of Operations & Production Management* 13, 32-39.

Isaksson, Olov HD, and Ralf W Seifert, 2014, Inventory leanness and the financial performance of firms, *Production Planning & Control* 25, 999-1014.

Jensen, Michael C, 2001, Value maximization, stakeholder theory, and the corporate objective function, *Journal Of Applied Corporate Finance* 14, 8-21.

Electronic copy available at: https://ssrn.com/abstract=3547940

Kashyap, Anil K, Owen A Lamont, and Jeremy C Stein, 1994, Credit conditions and the cyclical behavior of inventories, *The Quarterly Journal of Economics* 109, 565-592.

Keats, Barbara W, and Michael A Hitt, 1988, A causal model of linkages among environmental dimensions, macro organizational characteristics, and performance, *Academy of Management Journal* 31, 570-598.

Kovach, Jeremy J, Manpreet Hora, Andrew Manikas, and Pankaj C Patel, 2015, Firm performance in dynamic environments: The role of operational slack and operational scope, *Journal of Operations Management* 37, 1-12.

Lai, Richard K, 2008, Is inventory's fiscal year end effect caused by sales timing? A test using a natural experiment from Germany, *A test using a natural experiment from Germany (January 26, 2008). Harvard Business School Technology & Operations Mgt. Unit Research Paper*.

Lieberman, Marvin B, Susan Helper, and Lieven Demeester, 1999, The empirical determinants of inventory levels in high-volume manufacturing, *Production and Operations Management* 8, 44-55.

Lins, Karl V, Henri Servaes, and Ane Tamayo, 2017, Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis, *Journal of Finance* 72, 1785-1824.

Luoma, Patrice, and Jerry Goodstein, 1999, Stakeholders and corporate boards: Institutional influences on board composition and structure, *Academy of Management Journal* 42, 553-563.

Metters, Richard, 1997, Quantifying the bullwhip effect in supply chains, *Journal of Operations Management* 15, 89-100.

Milgrom, Paul, and John Roberts, 1988, Communication and inventory as substitutes in organizing production, *The Scandinavian Journal of Economics* 275-289.

Milliken, Frances J, 1987, Three types of perceived uncertainty about the environment: State, effect, and response uncertainty, *Academy of Management Review* 12, 133-143.

Mishra, Saurabh, Sachin B Modi, and Animesh, 2013, The relationship between information technology capability, inventory efficiency, and shareholder wealth: A firm-level empirical analysis, *Journal of Operations Management* 31, 298-312.

Modi, Sachin B, and Saurabh Mishra, 2011, What drives financial performance–resource efficiency or resource slack? Evidence from us based manufacturing firms from 1991 to 2006, *Journal of Operations Management* 29, 254-273.

Olivares, Marcelo, and Gérard P Cachon, 2009, Competing retailers and inventory: An empirical

Electronic copy available at: https://ssrn.com/abstract=3547940

investigation of general motors' dealerships in isolated us markets, *Management Science* 55, 1586-1604.

Orts, Eric W, 1992, Beyond shareholders: Interpreting corporate constituency statutes, *George Washington Law Review* 61, 14.

Pagell, Mark, and Daniel R Krause, 2004, Re-exploring the relationship between flexibility and the external environment, *Journal of Operations Management* 21, 629-649.

Patatoukas, Panos N, 2011, Customer-base concentration: Implications for firm performance and capital markets: 2011 American accounting association competitive manuscript award winner, *The Accounting Review* 87, 363-392.

Patel, Pankaj C, Arash Azadegan, and Lisa M Ellram, 2013, The effects of strategic and structural supply chain orientation on operational and customer-focused performance, *Decision Sciences* 44, 713-753.

Rajagopalan, Sampath, and Arvind Malhotra, 2001, Have us manufacturing inventories really decreased? An empirical study, *Manufacturing & Service Operations Management* 3, 14-24.

Robert Baum, J, and Stefan Wally, 2003, Strategic decision speed and firm performance, *Strategic Management Journal* 24, 1107-1129.

Roberts, Michael R, and Toni M Whited, 2013, Endogeneity in empirical corporate finance1, in *Handbook of the Economics of Finance* (Elsevier).

Rumyantsev, Sergey, and Serguei Netessine, 2007[a], Should inventory policy be lean or responsive? Evidence for US public companies, Working Paper.

Rumyantsev, Sergey, and Serguei Netessine, 2007[b], What can be learned from classical inventory models? A cross-industry exploratory investigation, *Manufacturing & Service Operations Management* 9, 409-429.

Saldanha, Terence JV, Nigel P Melville, Ronald Ramirez, and Vernon J Richardson, 2013, Information systems for collaborating versus transacting: Impact on manufacturing plant performance in the presence of demand volatility, *Journal of Operations Management* 31, 313-329.

Silver, Edward Allen, David F Pyke, and Rein Peterson, 1998. *Inventory management and production planning and scheduling* (Wiley New York).

Swamidass, Paul M, 2007, The effect of TPS on US manufacturing during 1981–1998: Inventory increased or decreased as a function of plant performance, *International Journal of Production Research* 45, 3763-3778.

Electronic copy available at: https://ssrn.com/abstract=3547940

Tribó, Josep A, 2007, Ownership structure and inventory policy, *International Journal of Production Economics* 108, 213-220.

Wang, Heli, Jaepil Choi, and Jiatao Li, 2008, Too little or too much? Untangling the relationship between corporate philanthropy and firm financial performance, *Organization Science* 19, 143-159.

White, Richard E, 1993, An empirical assessment of JIT in US manufacturers, *Production and Inventory Management Journal* 34, 38.

Electronic copy available at: https://ssrn.com/abstract=3547940

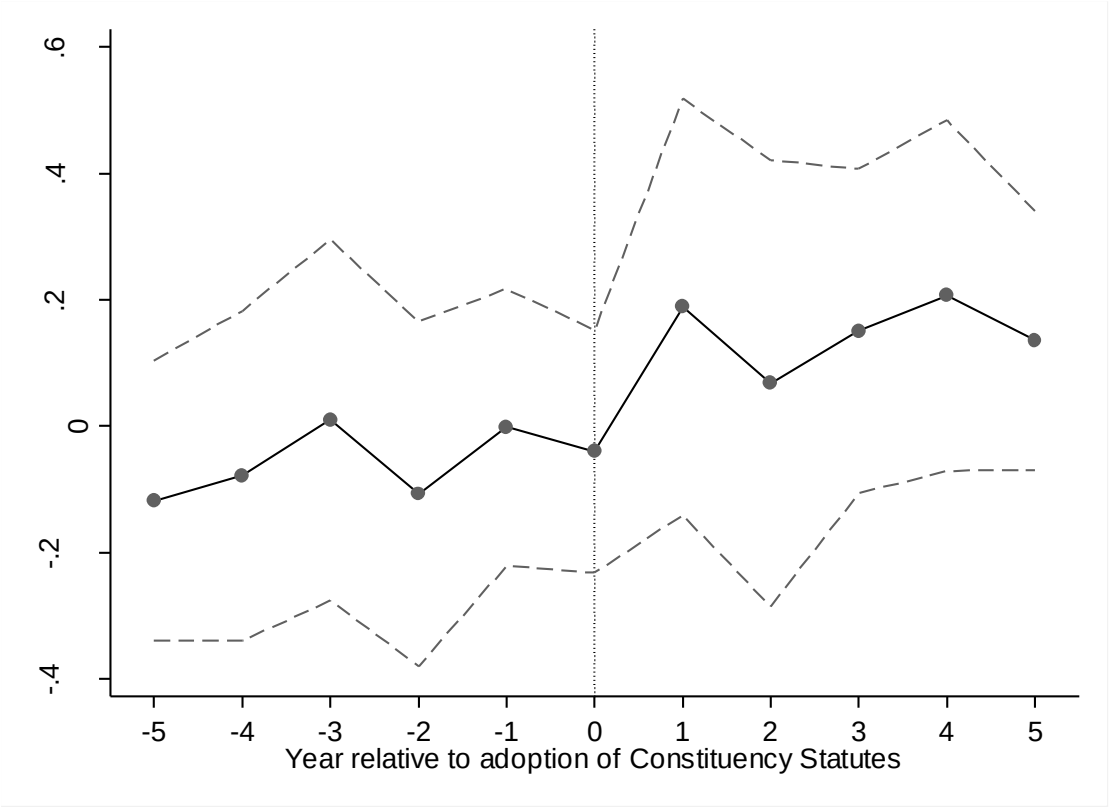


Figure 1. Effect of Adopting Constituency Statutes on Inventory Efficiency

This figure shows firms' inventory efficiency in adopting states relative to non-adopting states over an 11-year period (5 years before and 5 years after the adoption of constituency statutes). More specifically, the graph plots the point estimates (β_τs) and their 90% confidence intervals from the following regression:

$$Inventory\ Efficiency_{i,s,t} = \delta_i + \theta_t + \sum_{\tau=-5}^{\tau=5} \beta_\tau * Constituency\ Statutes_{s,t}^{\tau} + \varepsilon_{i,s,t}$$

where $Constituency\ Statutes_{s,t}^{\tau}$ is an indicator variable taking a value of one if year t is τ years apart from the year of constituency statutes adoption in state s. Standard errors are clustered at incorporated state level and dashed lines are confidence intervals.

Electronic copy available at: https://ssrn.com/abstract=3547940

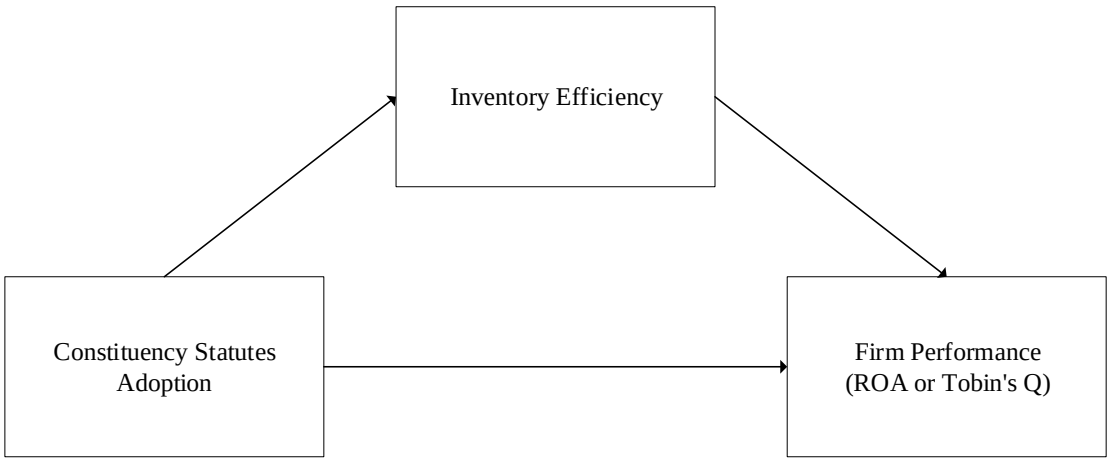


Figure 2. Mediation Analysis

This figure visualizes our mediation analysis that decomposes the influence of stakeholder orientation on firm performance into: an indirect (mediated) channel through improvement in inventory efficiency, and a direct channel that is not explained by the indirect channel.

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 1. List of Constituency Statutes Adoption by U.S. States

This table shows the effective year of constituency statutes in different U.S. states based on Karpoff and Wittry (2017).

State	Year
Ohio	1984
Illinois	1985
Maine	1985
Indiana	1986
Missouri	1986
Arizona	1987
Minnesota	1987
New Mexico	1987
New York	1987
Wisconsin	1987
Connecticut	1988
Idaho	1988
Kentucky	1988
Louisiana	1988
Nebraska	1988, 2007
Tennessee	1988
Virginia	1988
Florida	1989
Georgia	1989
Hawaii	1989
Iowa	1989
Massachusetts	1989
New Jersey	1989
Oregon	1989
Mississippi	1990
Pennsylvania	1990
Rhode Island	1990
South Dakota	1990
Wyoming	1990
Nevada	1991
North Carolina	1993
North Dakota	1993
Vermont	1998
Maryland	1999
Texas	2006

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 2. Summary Statistics

This table shows the summary statistics and pair-wise correlations of the variables examined in this study. For detailed variable definitions, please refer to Appendix A.

	Obs.	Mean	Median	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Inventory Efficiency	63604	5.287	3.877	5.089	1															
2. Constituency Statutes	63604	0.257	0.000	0.437	**-0.027**	1														
3. Size	63604	4.662	4.579	2.312	**0.084**	**-0.046**	1													
4. Leverage	63604	0.546	0.478	0.455	**0.084**	**0.010**	**-0.116**	1												
5. Gross Margin	63604	0.319	0.346	0.489	**-0.281**	**0.008**	**0.100**	**-0.125**	1											
6. Sales Growth	63604	0.102	0.078	0.394	**0.064**	**-0.032**	**-0.009**	**-0.117**	**0.095**	1										
7. Lead Time	63604	3.763	3.723	0.720	**-0.169**	**-0.008**	**-0.147**	**0.259**	**0.119**	**0.080**	1									
8. Raw Material Efficiency	37444	13.133	9.886	10.488	**0.517**	**-0.024**	**0.251**	**0.098**	**-0.183**	**0.030**	**-0.107**	1								
9. Work-in-Process Efficiency	37444	31.597	17.513	39.189	**0.392**	**0.037**	**0.063**	**0.072**	**-0.110**	**0.011**	**-0.079**	**0.199**	1							
10. Finished Goods Efficiency	37444	15.151	9.734	15.417	**0.501**	0.004	**-0.105**	0.007	**-0.211**	**0.091**	**-0.071**	**0.068**	**0.023**	1						
11. Industry-adjusted Inventory Efficiency	63604	-0.005	-0.254	0.941	**0.660**	**-0.036**	-0.003	**0.054**	**-0.240**	**0.105**	**-0.138**	**0.339**	**0.237**	**0.376**	1					
12. Business Combination Law	63604	0.702	1.000	0.457	**0.055**	**0.186**	**0.173**	**0.072**	**-0.017**	**-0.027**	**0.075**	**0.080**	**0.089**	**-0.016**	**-0.008**	1				
13. Control Share Acquisition Law	63604	0.186	0.000	0.389	-0.005	**0.558**	**-0.065**	**-0.012**	0.005	**-0.008**	**-0.021**	**-0.034**	**0.024**	**0.019**	**-0.008**	**0.102**	1			
14. Fair Price Law	63604	0.198	0.000	0.399	0.001	**0.599**	**0.041**	**0.010**	-0.007	**-0.043**	**-0.063**	0.008	**0.035**	-0.002	**-0.019**	**0.234**	**0.322**	1		
15. ROA	63604	-0.065	0.036	0.386	**-0.020**	**-0.015**	**0.359**	**-0.515**	**0.284**	**0.105**	**-0.355**	**0.072**	-0.001	0.005	-0.005	**-0.058**	**-0.013**	**0.047**	1	
16. Tobin's Q	59807	1.720	1.164	1.727	**0.024**	-0.007	**-0.191**	**0.081**	**-0.036**	**0.209**	**0.260**	**-0.035**	**-0.020**	**0.020**	**0.049**	**0.039**	**0.020**	**-0.069**	**-0.280**	1

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 3. Validity Tests for the Adoption of Constituency Statutes

This table shows the results of validity tests for the passage of constituency statutes laws. Panel A tests whether pre-existing state level of inventory efficiency predicts the probability and time of constituency statutes adoption using two models: Probit Model (Columns 1 and 2) and Weibul Hazard Model (Columns 3 and 4). In Columns 1 and 2, dependent variable is an indicator variable that takes one for states adopted constituency statutes, and zero otherwise. In Columns 3 and 4, dependent variable is the log of the time until the passage of the law. Once a state passes the law, it is dropped from the sample. In addition to average inventory efficiency at the state level, we also control for a number of state variables: GDP, unemployment rate, population, GDP growth, and political environment ("Republican Governor" equals one for states with a Republican governor, and zero otherwise). In Panel B, we examine the impact of constituency statutes adoption on firms' social performance, as measured by *KLD-score* and *KLD-score (Strength)*. Detailed variable definitions can be found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Time of Passing Constituency Statutes and Pre-existing Inventory Efficiency

	(1)	(2)	(3)	(4)
	Probit Model		Duration Model	
Average Inventory Efficiency	0.022	0.017	-0.059	-0.037
	[0.028]	[0.030]	[0.085]	[0.073]
Log State Real GDP		2.290***		-7.025***
		[0.623]		[1.631]
State Unemployment Rate		-0.072*		-0.298*
		[0.043]		[0.159]
Log State Population		-2.178***		7.889***
		[0.720]		[1.833]
State Real GDP Growth		-3.649**		3.104
		[1.445]		[6.058]
Republican Governor		0.244		-0.748*
		[0.182]		[0.421]
Constant	-0.217	6.144	-8.759***	-47.071***
	[0.176]	[4.240]	[0.669]	[9.435]
Observations	1,442	1,442	805	805
Pseudo R2	0.00222	0.179	.	.

Panel B: Constituency Statutes and Stakeholder Satisfaction

	(1)	(2)	(3)	(4)
	KLD-Score		KLD-Score (Strength)	
Constituency Statutes	0.062***	0.047**	0.066***	0.054**
	[0.017]	[0.023]	[0.024]	[0.022]
Size	-0.016*	-0.016**	0.020***	0.024***
	[0.008]	[0.007]	[0.007]	[0.007]
Leverage	-0.029	-0.040**	0.006	0.011
	[0.017]	[0.019]	[0.019]	[0.023]
Gross Margin	-0.001	-0.002	0.020*	0.012
	[0.011]	[0.009]	[0.010]	[0.008]
Sales Growth	0.014**	0.014***	-0.007	-0.002
	[0.006]	[0.004]	[0.006]	[0.005]
Lead Time	-0.001	0.000	-0.015**	-0.015**
	[0.007]	[0.006]	[0.007]	[0.006]
Constant	0.540***	0.544***	0.055	0.034
	[0.061]	[0.059]	[0.066]	[0.062]
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year × State FE	No	Yes	No	Yes
Observations	12,258	12,258	12,258	12,258
R-squared	0.575	0.607	0.669	0.704

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 4. Stakeholder Orientation and Inventory Efficiency

This table reports the results of the DiD tests investigating the impact of constituency statutes on manufacturing firms' investment efficiency from 1979 to 2012. The dependent variable is Inventory Efficiency, measured by COGS over average inventory. Control variables include firm size, leverage, gross margin, sales growth, and lead time. In Columns 1 and 2, we focus on the full sample; in Column 3, we exclude firms incorporated in Delaware; in Column 4, we exclude states that passed constituency statutes before 1990; in Column 5, we exclude firms that change their state of incorporation during our sample period; in Column 6, we keep only firms in states that eventually adopted constituency statutes. Detailed variable definitions can be found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
				Inventory Efficiency		
		Full Sample		Exclude Delaware	Exclude Pre-1990	Exclude Re-Incorp.	Eventually Treated
Constituency Statutes	0.283***	0.219***	0.363**	0.586**	0.343***	0.466**
	[0.078]	[0.081]	[0.171]	[0.245]	[0.083]	[0.233]
Size		-0.143***	-0.147**	-0.112***	-0.151***	-0.003
		[0.021]	[0.071]	[0.026]	[0.032]	[0.085]
Leverage		0.452***	0.457***	0.543***	0.429***	0.484**
		[0.061]	[0.140]	[0.065]	[0.055]	[0.233]
Gross Margin		-2.341***	-2.065***	-2.603***	-2.375***	-3.156***
		[0.157]	[0.284]	[0.101]	[0.141]	[0.372]
Sales Growth		1.311***	1.280***	1.292***	1.334***	2.984***
		[0.055]	[0.146]	[0.057]	[0.049]	[0.402]
Lead Time		-0.965***	-0.800***	-1.091***	-0.938***	-0.525***
		[0.080]	[0.066]	[0.056]	[0.074]	[0.099]
Constant	5.215***	9.890***	8.740***	10.531***	9.769***	7.583***
	[0.021]	[0.320]	[0.358]	[0.228]	[0.233]	[0.546]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	63,604	63,604	26,095	43,518	59,988	21,575
R-squared	0.764	0.798	0.833	0.800	0.801	0.786

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 5. Pre-treatment Analysis

This table reports the results of examining the pre-treatment trend between adopting and non-adopting state firms. The dependent variable is Inventory Efficiency, measured by COGS over average inventory. The explanatory variable, Constituency Statutes, equals one if a state has adopted a constituency statute by year t, and zero otherwise. Control variables include firm size, leverage, gross margin, sales growth, and lead time. Constituency Statutes^{-1} (Constituency Statutes^{-2}) equals one if the year is one year (two years) before the year of constituency statutes adoption, and zero otherwise. Detailed variable definitions can be found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
			Inventory Efficiency		
	Full Sample	Exclude Delaware	Exclude Pre-1990	Exclude Re-Incorp.	Eventually Treated
Constituency Statutes	0.223***	0.396**	0.614**	0.380***	0.501*
	[0.079]	[0.197]	[0.264]	[0.088]	[0.293]
Constituency Statutes^{-1}	-0.020	0.133	0.118	0.078	0.075
	[0.081]	[0.142]	[0.317]	[0.079]	[0.262]
Constituency Statutes^{-2}	0.054	-0.030	0.126	0.142	0.055
	[0.177]	[0.193]	[0.350]	[0.192]	[0.245]
Size	-0.143***	-0.148**	-0.112***	-0.151***	-0.003
	[0.021]	[0.071]	[0.026]	[0.032]	[0.086]
Leverage	0.452***	0.457***	0.543***	0.430***	0.484**
	[0.061]	[0.140]	[0.065]	[0.055]	[0.233]
Gross Margin	-2.341***	-2.065***	-2.603***	-2.375***	-3.156***
	[0.157]	[0.284]	[0.101]	[0.141]	[0.372]
Sales Growth	1.311***	1.280***	1.292***	1.334***	2.984***
	[0.055]	[0.146]	[0.057]	[0.049]	[0.402]
Lead Time	-0.964***	-0.801***	-1.091***	-0.938***	-0.525***
	[0.080]	[0.066]	[0.056]	[0.074]	[0.099]
Constant	9.888***	8.720***	10.529***	9.756***	7.554***
	[0.319]	[0.361]	[0.228]	[0.230]	[0.542]
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	63,604	26,095	43,518	59,988	21,575
R-squared	0.798	0.833	0.800	0.801	0.786

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 6. Stakeholder Orientation and the Efficiency of Different Inventory Components

This table reports the results of the DiD tests that investigate the impact of constituency statutes on the efficiency of different inventory components: raw materials (Columns 1 and 2), work-in-process (Columns 3 and 4), and finished goods (Columns 5 and 6). For comparison purposes, the results for total inventory holding are also reported using the smaller sample (Columns 7 and 8). Detailed variable definitions can be found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Raw Material Efficiency		Work-in-process Efficiency		Finished Goods Efficiency		Inventory Efficiency	
Constituency Statutes	0.706**	0.677**	2.320*	2.092*	2.254***	2.095***	0.213***	0.182***
	[0.321]	[0.332]	[1.223]	[1.202]	[0.568]	[0.556]	[0.072]	[0.065]
Size		0.225		0.077		-0.728***		-0.088**
		[0.155]		[0.536]		[0.148]		[0.040]
Leverage		1.013***		2.315*		-0.414		0.216***
		[0.188]		[1.203]		[0.365]		[0.049]
Gross Margin		-7.407***		-19.111***		-10.757***		-3.111***
		[0.587]		[1.453]		[0.642]		[0.193]
Sales Growth		2.650***		4.754***		4.548***		1.131***
		[0.195]		[0.674]		[0.428]		[0.095]
Lead Time		-1.487***		-4.066***		-1.929***		-0.542***
		[0.146]		[0.272]		[0.227]		[0.026]
Constant	12.957***	19.461***	31.032***	51.415***	14.584***	29.144***	4.198***	7.569***
	[0.081]	[1.165]	[0.312]	[2.876]	[0.137]	[0.912]	[0.019]	[0.132]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	37,444	37,444	37,444	37,444	37,444	37,444	37,444	37,444
R-squared	0.763	0.777	0.745	0.751	0.721	0.736	0.801	0.829

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 7. Stakeholder Orientation and Inventory Efficiency: Robustness Tests

This table reports the results of a set of robustness tests for the impact of constituency statutes on firms' inventory efficiency. In Column 1, instead of using just COGS over average inventory holding as the measure of inventory efficiency, its industry-year adjusted value is used; in Column 2, Industry × Year fixed effects are dropped from the regression; in Column 3, Year × State fixed effects are dropped from the regression; In Columns 4 to 6, in addition to the control variables used in the main regression, the potential impacts of other corporate laws are controlled for one at a time: Column 4 for Business Combination Law; Column 5 for Control Share Acquisition Law; and Column 6 for Fair Price Law. Detailed variable definitions are found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
			Inventory Efficiency			
	Industry-adjusted Inventory Efficiency	No Industry × Year FE	No Year × State FE	BC Law	CSA Law	FP Law
Constituency Statutes	0.039**	0.274**	0.242**	0.223***	0.211**	0.210**
	[0.019]	[0.129]	[0.103]	[0.082]	[0.100]	[0.083]
Size	-0.060***	-0.046	-0.027	-0.140***	-0.140***	-0.140***
	[0.006]	[0.053]	[0.034]	[0.023]	[0.023]	[0.022]
Leverage	0.086***	0.367***	0.295***	0.400***	0.399***	0.400***
	[0.011]	[0.081]	[0.099]	[0.065]	[0.065]	[0.065]
Gross Margin	-0.321***	-3.229***	-3.205***	-2.250***	-2.250***	-2.250***
	[0.008]	[0.227]	[0.221]	[0.194]	[0.193]	[0.193]
Sales Growth	0.333***	3.373***	3.316***	1.266***	1.267***	1.267***
	[0.014]	[0.243]	[0.232]	[0.059]	[0.059]	[0.059]
Lead Time	-0.195***	-0.469***	-0.531***	-0.966***	-0.966***	-0.966***
	[0.016]	[0.134]	[0.095]	[0.071]	[0.070]	[0.070]
Business Combination Law				-0.105		
				[0.088]		
Control Share Acquisition Law					0.059	
					[0.181]	
Fair Price Law						0.041
						[0.122]
Constant	1.007***	8.277***	8.485***	9.955***	9.878***	9.880***
	[0.072]	[0.740]	[0.462]	[0.278]	[0.282]	[0.294]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	No	Yes	Yes	Yes
Year × Industry FE	Yes	No	Yes	Yes	Yes	Yes
Observations	63,604	63,604	63,604	63,604	63,604	63,604

Electronic copy available at: https://ssrn.com/abstract=3547940

R-squared	0.685	0.691	0.726	0.801	0.801	0.801

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 8. Why Stakeholder Orientation Increases Inventory Efficiency: The Role of Environmental Dynamism

This table examines the role of environmental dynamism in the relationship between stakeholder orientation and firms' inventory efficiency by dividing the full sample based on the level of environmental dynamism in the firm's industry. Environmental dynamism is calculated using the method proposed by Dess and Beard (1984). Industries with average dynamism levels smaller (larger) than the global median over the sample period (1979–2012) are placed into the low (high) environmental dynamism subsample. Detailed variable definitions are found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
						Inventory Efficiency						
		Low Environmental Dynamism						High Environmental Dynamism				
	Full Sample	Exclude Delaware	Exclude Pre-1990		Exclude Re-Incorp.	Eventually Treated	Full Sample	Exclude Delaware	Exclude Pre-1990		Exclude Re-Incorp.	Eventually Treated
Constituency Statutes	0.223*	0.182	0.190	0.516	0.272**	0.187	0.478***	0.409***	0.710**	0.915**	0.566***	0.782**
	[0.120]	[0.127]	[0.280]	[0.339]	[0.123]	[0.303]	[0.137]	[0.108]	[0.269]	[0.420]	[0.078]	[0.355]
Size		-0.196***	-0.154	-0.361***	-0.207***	-0.185**		-0.042	-0.143	-0.192***	-0.025	-0.132
		[0.042]	[0.102]	[0.102]	[0.041]	[0.088]		[0.040]	[0.108]	[0.048]	[0.056]	[0.135]
Leverage		0.376***	0.609***	1.010***	0.312***	0.429***		0.443***	0.304	1.039***	0.509***	0.622
		[0.079]	[0.171]	[0.114]	[0.075]	[0.138]		[0.093]	[0.211]	[0.098]	[0.091]	[0.400]
Gross Margin		-2.399***	-2.002***	-2.291***	-2.487***	-2.526***		-2.191***	-2.363***	-3.009***	-2.167***	-2.810***
		[0.203]	[0.280]	[0.282]	[0.178]	[0.475]		[0.191]	[0.512]	[0.187]	[0.199]	[0.465]
Sales Growth		1.203***	1.178***	0.246***	1.254***	0.913***		1.428***	1.326***	0.088	1.407***	1.194***
		[0.054]	[0.169]	[0.076]	[0.053]	[0.252]		[0.091]	[0.157]	[0.079]	[0.078]	[0.176]
Lead Time		-0.956***	-0.833***	-1.414***	-0.959***	-0.791***		-1.012***	-0.826***	-1.539***	-0.949***	-1.165***
		[0.074]	[0.103]	[0.089]	[0.080]	[0.116]		[0.088]	[0.133]	[0.073]	[0.073]	[0.303]
Constant	5.256***	10.221***	9.012***	12.756***	10.287***	9.206***	5.119***	9.450***	8.621***	12.642***	8.975***	9.820***
	[0.032]	[0.434]	[0.540]	[0.561]	[0.374]	[0.498]	[0.033]	[0.269]	[0.771]	[0.427]	[0.305]	[1.266]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	36,496	36,496	15,082	25,008	34,428	12,622	27,108	27,108	11,013	18,510	25,560	8,953
R-squared	0.787	0.820	0.855	0.785	0.825	0.883	0.760	0.790	0.835	0.738	0.793	0.864

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 9. How Stakeholder Orientation Increases Inventory Efficiency: The Role of Employees and Customers

This table investigates the potential role of employees and customers in shaping the relationship between stakeholder orientation and inventory efficiency. Labor intensity is measured as labor and pension expenses divided by sales. Industries with average labor intensity levels smaller (larger) than the global median over the sample period (1979–2012) are placed into the low (high) labor intensity subsample. Customer concentration for a firm is calculated following Patatoukas (2012). Firms with average customer concentration measure lower (higher) than the global median over the sample period (1979–2012) are placed into the low (high) customer concentration subsample. Detailed variable definitions are found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Inventory Efficiency							
	Low Labor Intensity		High Labor Intensity		High Customer Concentration		Low Customer Concentration	
Constituency Statutes	0.163	0.037	0.472***	0.451***	-0.296	-0.377	0.290**	0.253**
	[0.112]	[0.108]	[0.145]	[0.152]	[0.215]	[0.246]	[0.131]	[0.123]
Size		-0.027		-0.211***		-0.147		-0.119**
		[0.037]		[0.039]		[0.093]		[0.046]
Leverage		0.595***		0.354***		0.710***		-0.046
		[0.096]		[0.092]		[0.191]		[0.096]
Gross Margin		-2.649***		-2.305***		-2.449***		-2.774***
		[0.283]		[0.139]		[0.185]		[0.605]
Sales Growth		1.324***		1.298***		1.446***		1.592***
		[0.118]		[0.051]		[0.081]		[0.112]
Lead Time		-0.799***		-1.084***		-1.398***		-0.638***
		[0.037]		[0.138]		[0.213]		[0.050]
Constant	5.518***	9.062***	4.901***	10.292***	5.493***	11.707***	4.710***	8.553***
	[0.028]	[0.209]	[0.036]	[0.523]	[0.052]	[1.177]	[0.033]	[0.338]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	31,020	31,020	32,584	32,584	13,637	13,637	19,210	19,210
R-squared	0.764	0.792	0.784	0.822	0.711	0.772	0.790	0.803

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 10. Shareholder Orientation, Environmental Dynamism, and Firm Performance

This table examines firms' performance after the adoption of constituency statutes, as well as the moderating role of environmental dynamism. We consider two performance measures: the accounting information-based ROA and market information-based Tobin's Q. Environmental dynamism is calculated using the method proposed by Dess and Beard (1984). Industries with average dynamism levels smaller (larger) than the global median over the sample period (1979–2012) are placed into the low (high) environmental dynamism subsample. Detailed variable definitions are found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Entire Sample		Low Environmental Dynamism		High Environmental Dynamism	
	ROA	Tobin's Q	ROA	Tobin's Q	ROA	Tobin's Q
Constituency Statutes	-0.002	0.058**	-0.013	-0.016	0.025**	0.089**
	[0.007]	[0.028]	[0.010]	[0.053]	[0.010]	[0.042]
Size	0.047***	-0.276***	0.050***	-0.219***	0.045***	-0.272***
	[0.004]	[0.032]	[0.005]	[0.020]	[0.003]	[0.039]
Leverage	-0.331***	-0.204***	-0.337***	-0.122**	-0.305***	-0.141
	[0.008]	[0.046]	[0.010]	[0.051]	[0.016]	[0.087]
Sales Growth	0.102***	0.606***	0.091***	0.542***	0.116***	0.658***
	[0.006]	[0.025]	[0.006]	[0.032]	[0.013]	[0.058]
Gross Margin	0.177***	0.068	0.143***	0.056	0.250***	0.296***
	[0.019]	[0.076]	[0.021]	[0.077]	[0.026]	[0.087]
Lead Time	-0.043***	0.157***	-0.045***	0.121***	-0.031***	0.115***
	[0.004]	[0.019]	[0.006]	[0.024]	[0.007]	[0.034]
Constant	-0.008	2.383***	0.009	2.247***	-0.087**	2.301***
	[0.014]	[0.136]	[0.030]	[0.098]	[0.042]	[0.166]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	63,604	59,807	36,496	34,443	27,108	25,364
R-squared	0.739	0.618	0.76	0.639	0.697	0.649

Electronic copy available at: https://ssrn.com/abstract=3547940

Table 11. Shareholder Orientation and Firm Performance: The Mediating Role of Inventory Efficiency

This table examines the mediating role of inventory efficiency in the stakeholder orientation-firm performance relationship. We focus on three situations where constituency statues adoption significantly improves firm performance measures in Table 10: the entire sample when performance is measured by Tobin'Q, the higher environmental dynamism subsample when performance is measured by either ROA or Tobin's Q. Environmental dynamism is calculated using the method proposed by Dess and Beard (1984). Industries with average dynamism levels larger than the global median over the sample period (1979–2012) are placed into the high environmental dynamism subsample. Detailed variable definitions are found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
	Entire Sample	High Environmental Dynamism	
	Tobin's Q	ROA	Tobin's Q
Constituency Statutes	0.048*	0.022**	0.078*
	[0.029]	[0.010]	[0.043]
Inventory Efficiency	0.025***	0.009***	0.025***
	[0.002]	[0.001]	[0.002]
Size	-0.274***	0.046***	-0.272***
	[0.032]	[0.003]	[0.040]
Leverage	-0.213***	-0.309***	-0.145*
	[0.043]	[0.016]	[0.087]
Sales Growth	0.555***	0.104***	0.600***
	[0.024]	[0.013]	[0.055]
Gross Margin	0.017	0.274***	0.249***
	[0.077]	[0.027]	[0.084]
Lead Time	0.186***	-0.023***	0.145***
	[0.019]	[0.007]	[0.034]
Constant	2.086***	-0.170***	2.017***
	[0.144]	[0.041]	[0.177]
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes
Observations	59,807	27,108	25,364
R-squared	0.621	0.700	0.652
Indirect Effect	0.01	0.003	0.012
Direct Effect	0.048	0.022	0.078
Total Effect	0.058	0.025	0.089
Mediated Total Effect	0.166	0.129	0.131
Sobel Test Statistic	3.345 (p-value: 0.001)	3.714(p-value: 0.000)	3.838(p-value: 0.000)

Electronic copy available at: https://ssrn.com/abstract=3547940

Appendix A. Variable Definitions

This table presents definitions of the main variables examined in this study.

Variable	Definition
Inventory Efficiency	Inventory Efficiency of firm i in year t = $Cost\ of\ Goods\ Sold_{i,t}/[\frac{1}{2}(FIFO\ Inventory_{i,t} + FIFO\ Inventory_{i,t-1})]$. For firms using LIFO inventory accounting, $FIFO\ Inventory = LIFO\ Inventory + LIFO\ Reserve$.
Constituency Statutes	An indicator variable that takes a value of 1 for firms incorporated in states adopting constituency statutes, and 0 otherwise.
Size	Size of firm i in year t = $\ln(Total\ Assets_{i,t})$.
Leverage	Leverage of firm i in year t = $(Total\ Liabilities_{i,t}/Total\ Assets_{i,t})$.
Gross Margin	Gross Margin of firm i in year t = $(\text{Sales}_{i,t} - Cost\ of\ Goods\ Sold_{i,t})/Sales_{i,t}$.
Sales Growth	Sales Growth of firm i in year t = $ln\ (Sales_{i,t}/Sales_{i,t-1})$.
Lead Time	Lead Time of firm i in year t = $ln\ (365/(Cost\ of\ Goods\ Sold_{i,t}/Accounts\ Payable_{i,t}))$.
Raw Material Efficiency	Raw Material Efficiency of firm i in year t = $Cost\ of\ Goods\ Sold_{i,t}/[\frac{1}{2}(Raw\ Material_{i,t} + Raw\ Material_{i,t-1})]$. For firms using LIFO inventory accounting, LIFO reserve is allocated based on the value of raw materials relative to total inventory.
Work-in-process Efficiency	Work-in-Process Efficiency of firm i in year t = $Cost\ of\ Goods\ Sold_{i,t}/[\frac{1}{2}(Work-in-Process_{i,t} + Work-in-Process_{i,t-1})]$. For firms using LIFO inventory accounting, LIFO reserve is allocated based on the value of work-in-process relative to total inventory.
Finished Goods Efficiency	Finished Goods Efficiency of firm i in year t = $Cost\ of\ Goods\ Sold_{i,t}/[\frac{1}{2}(Finished\ Goods_{i,t} + Finished\ Goods_{i,t-1})]$. For firms using LIFO inventory accounting, LIFO reserve is allocated based on the value of finished goods relative to total inventory.
Industry-adjusted Inventory Efficiency	Industry-adjusted Inventory Efficiency of firm i in year t = $\frac{Inventory\ Efficiency_{i,t} - (\mu_{Inventory\ Efficiency})_{i,t}}{(\sigma_{Inventory\ Efficiency})_{i,t}}$, where $Inventory\ Efficiency$ is our original measure, and $(\mu_{Inventory\ Efficiency})_{i,t}$ $(\sigma_{Inventory\ Efficiency})_{i,t}$ are respectively the mean and the standard deviation of inventory efficiencies for all firms in the same four-digit SIC code industry.
Business Combination Law	An indicator variable taking a value of 1 for firms incorporated in states that adopted business combination law, and 0 otherwise.
Control Share Acquisition Law	An indicator variable taking a value of 1 for firms incorporated in states that adopted a control share acquisition law, and 0 otherwise.

Electronic copy available at: https://ssrn.com/abstract=3547940

Variable	Definition
Fair Price Law	An indicator variable taking a value of 1 for firms incorporated in states that adopted a fair price law, and 0 otherwise.
ROA	ROA of firm i in year $t = Net\ Income_{i,t}/Total\ Assets_{i,t}$.
Tobin's Q	Tobin's q for firm i in year $t = (MVE_{i,t} + PS_{i,t} + DEBT_{i,t})/TA_{i,t}$, where MVE is the market value of common stocks, PS is the market value of preferred stocks, $DEBT$ is the book value of total debt, and TA is the book value of total assets.

Electronic copy available at: https://ssrn.com/abstract=3547940

Appendix B. Stakeholder Orientation and Inventory Efficiency: B2C vs Non-B2C Sectors

This table compares the influence of stakeholder orientation on inventory efficiency between B2C and Non-B2C sectors. The classification of B2C industries is obtained from Lev et al. (2010). Detailed variable definitions are found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	Inventory Efficiency			
	B2C Sector		Non-B2C Sector	
Constituency Statute	0.778***	0.558**	0.068	0.048
	[0.263]	[0.247]	[0.144]	[0.146]
Size		-0.192*		-0.085**
		[0.096]		[0.033]
Leverage		0.548***		0.467***
		[0.148]		[0.102]
Gross Margin		-4.116***		-1.950***
		[0.205]		[0.171]
Sales Growth		1.797***		1.292***
		[0.320]		[0.055]
Lead Time		-1.412***		-0.856***
		[0.144]		[0.063]
Constant	6.094***	13.068***	4.887***	8.773***
	[0.073]	[0.789]	[0.036]	[0.241]
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes
Observations	27,766	27,655	35,875	35,756
R-squared	0.752	0.799	0.737	0.766

Electronic copy available at: https://ssrn.com/abstract=3547940

Appendix C. Stakeholder Orientation and Inventory Efficiency: Retailing Firms

This table reports the results of the DiD tests investigating the impact of constituency statutes on retailing firms' investment efficiency from 1979 to 2012. The dependent variable is Inventory Efficiency, measured by COGS over average inventory. Control variables include firm size, leverage, gross margin, sales growth, and lead time. In Columns 1 and 2, we focus on the full sample; in Column 3, we exclude firms incorporated in Delaware; in Column 4, we exclude states that passed constituency statutes before 1990; in Column 5, we exclude firms that change their state of incorporation during our sample period; in Column 6, we keep only firms in states that eventually adopted constituency statutes. Detailed variable definitions can be found in Appendix A. Numbers in brackets are robust standard errors clustered at the incorporated state level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
			Inventory Efficiency			
	Full Sample	Exclude Delaware		Exclude Pre-1990	Exclude Re-Incorp.	Eventually Treated
Constituency Statute	1.857**	1.808**	3.053**	2.805*	2.703***	1.773
	[0.700]	[0.716]	[1.122]	[1.519]	[0.864]	[3.127]
Size		-1.633***	-0.584	-1.802*	-1.817***	-2.037
		[0.578]	[0.460]	[0.905]	[0.619]	[1.847]
Leverage		0.357	5.105***	1.057	1.457	1.526
		[1.605]	[1.705]	[0.973]	[1.497]	[5.376]
Gross Margin		-29.157***	-35.249***	-37.340***	-29.663***	1.310
		[4.796]	[4.807]	[8.669]	[4.517]	[10.048]
Sales Growth		-1.369**	-2.306*	-1.511*	-0.943*	-1.547
		[0.532]	[1.333]	[0.804]	[0.549]	[1.480]
Lead Time		-3.939***	-4.213*	-2.778**	-4.104***	-5.424**
		[0.692]	[2.181]	[1.343]	[0.661]	[2.440]
Constant	18.443***	49.333***	43.294***	48.762***	50.325***	52.420***
	[0.182]	[4.099]	[7.686]	[11.536]	[4.310]	[16.732]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,034	10,034	4,001	6,844	9,364	3,414
R-squared	0.907	0.913	0.929	0.923	0.918	0.926

Electronic copy available at: https://ssrn.com/abstract=3547940

european corporate governance institute

about ECGI

The European Corporate Governance Institute has been established to improve *corporate governance through fostering independent scientific research and related activities.*

The ECGI will produce and disseminate high quality research while remaining close to the concerns and interests of corporate, financial and public policy makers. It will draw on the expertise of scholars from numerous countries and bring together a critical mass of expertise and interest to bear on this important subject.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

www.ecgi.global

european corporate governance institute

ECGI Working Paper Series in Finance

Editorial Board

Editor	Mike Burkart, Professor of Finance, London School of Economics and Political Science
Consulting Editors	Franklin Allen, Nippon Life Professor of Finance, Professor of Economics, The Wharton School of the University of Pennsylvania
	Julian Franks, Professor of Finance, London Business School
	Marco Pagano, Professor of Economics, Facoltà di Economia Università di Napoli Federico II
	Xavier Vives, Professor of Economics and Financial Management, IESE Business School, University of Navarra
	Luigi Zingales, Robert C. McCormack Professor of Entrepreneurship and Finance, University of Chicago, Booth School of Business
Editorial Assistant	Úna Daly, ECGI Working Paper Series Manager

https://ecgi.global/content/working-papers