NBER WORKING PAPER SERIES

COMPETITION LAWS, NORMS AND CORPORATE SOCIAL RESPONSIBILITY

Wenzhi Ding
Ross Levine
Chen Lin
Wensi Xie

Working Paper 27493
http://www.nber.org/papers/w27493

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
July 2020

Competition Laws, Norms and Corporate Social Responsibility
Wenzhi Ding, Ross Levine, Chen Lin, and Wensi Xie
NBER Working Paper No. 27493
July 2020
JEL No. K21,L4,M14,Z13

ABSTRACT

Theory offers differing perspectives and predictions about the impact of product market competition on corporate social responsibility (CSR). Using firm-level data on CSR from 2002 through 2015 and panel data on competition laws in 48 countries, we discover that intensifying competition induces firms to increase CSR activities. Analyses indicate that (a) intensifying competition spurs firms to invest more in CSR as a strategy for strengthening relationships with workers, suppliers, and customers and (b) the competition-CSR effect is stronger in economies where social norms prioritize CSR-type activities, e.g., treating others fairly, satisfying implicit agreements, protecting the environment, etc.

Wenzhi Ding
K.K. Leung Building
University of Hong Kong
Hong Kong SAR
wenzhi.ding@connect.hku.hk

Chen Lin
Faculty of Business and Economics
The University of Hong Kong
Hong Kong
chenlin1@hku.hk

Ross Levine
Haas School of Business
University of California at Berkeley
545 Student Services Building, #1900 (F685)
Berkeley, CA 94720-1900
and NBER
Ross_levine@haas.berkeley.edu

Wensi Xie
Department of Finance
Chinese University of Hong Kong
Hong Kong
wensixie@cuhk.edu.hk

I. Introduction

Investors and companies increasingly focus on corporate social responsibility (CSR). For example, on January 14, 2020, Larry Fink, the CEO of BlackRock, the world's largest asset manager, argued that, "… a company cannot achieve long-term profits without embracing … the needs of a broad range of stakeholders," such as customers, employees, suppliers, and the communities where the company operates. In August of 2019, the Business Roundtable, a group of CEOs from major U.S. corporations, committed to investing in their employees, dealing fairly and ethically with suppliers, and protecting the environment. As noted by Jamie Dimon, CEO of JP Morgan, "Major employers are investing in their workers and communities because they know it is the only way to be successful over the long term." The growing focus on CSR is global. As of 2018, about 1500 companies from around the world with almost $90 trillion of assets were signatories to the United Nations-supported Principles for Responsible Investing.[1] While many investors and CEOs highlight the importance of CSR, the actual implementation of CSR actions varies markedly across firms and countries, raising questions about its determinants.

In this paper, we focus on one potential determinant of CSR activities—product market competition—and evaluate differing views about the impact of product market competition on CSR. The stakeholder value maximization view holds that intensifying product market competition induces firms to (1) strengthen relationships with customers, workers, suppliers, and local communities as other firms increasingly compete for those stakeholders and (2) CSR activities are one strategy for strengthening those bonds (e.g., Porter and Kramer 2006; Deng, Kang, and Low 2013; Flammer 2015a). The stakeholder view is based on the conception of the firm as a nexus of explicit and implicit contracts between shareholders and other stakeholders (e.g., Coase 1937; Alchian and Demsetz 1972; Jensen and Meckling 1976). To the extent that CSR activities signal a firm's commitment to honor implicit agreements to ensure worker well-being, provide safe products and continuing

[1] For the Business Roundtable announcement and the statement by Jamie Dimon, see: http://nbr.com/2019/08/19/the-ceos-of-nearly-200-companies-just-said-shareholder-value-is-no-longer-their-main-objective/. For data from the UN-supported Principles for Responsible Investing, see: https://www.unpri.org/annual-report-2018/how-we-work/the-pri-in-numbers.

service to customers, fulfill informal agreements with suppliers, and protect the environment, CSR activities will help build loyalty and trust among stakeholders. The strengthening of relationships with stakeholders will, in turn, foster the retention of high-quality workers, stable supply chains, and customer loyalty (e.g., Flammer 2015b). In this regard, Flammer (2015a) explains that the stakeholder view offers a testable prediction about competition and CSR: intensifying product market competition creates stronger incentives for firms to bolster relationships with stakeholders by conducting more CSR activities. As a corollary, we argue that this view further implies that the CSR-boosting effect of competition will be greater in economies with social norms that place a higher priority on treating others fairly and mitigating environmental degradation, because in these economies, CSR activities are more likely to generate greater loyalty and trust with stakeholders.

The product differentiation view also stresses the positive effect of competition on CSR. As argued by Flammer (2015a) intensification of product market competition can spur firms to differentiate their products and CSR activities are one strategy for accomplishing that goal, as research suggests that CSR activities represent positive signals about firms and their products (e.g., Baron 2001; McWilliams and Siegel 2001; Bagnoli and Watts 2003; Siegel and Vitaliano 2007). Prior research also shows that firms engaging in more CSR activities increase customer loyalty and pricing power (e.g. Luo and Bhattacharya, 2009; Elfenbein and McManus 2010; Hilger et al., 2019). Thus, the product differentiation view of CSR predicts that greater competition induces firms to invest more in CSR to differentiate their products and create more pricing power, cushioning the adverse ramifications of intensifying competition on profits.

Other theories of corporate behavior, however, suggest that intensifying product market competition can reduce long-run value maximizing investments, including those in CSR activities. In a textbook model with liquidity constraints, competition can compel firms to focus on short-term survival and therefore forgo expenditures with payoff in the long-run, such as CSR activities that increase stakeholders' welfare. For example, investing in workplace safety could build loyalty over the long-run, but the combination of large fixed costs to improving workplace safety, binding liquidity constraints, and shrinking profit

margins due to intensifying competition could limit investments in workplace safety and other CSR activities. Focusing on ethical behavior, Shleifer (2004) argues that competitive pressures can lead firms to engage in unethical conduct to survive. For example, Shleifer (2004) notes that an increase in competition could induce some firms to hire child labor to reduce costs, other firms would face pressures to follow or be forced out of business. From this perspective, intensifying product market competition encourages firms to focus less on ethical considerations—and associated CSR activities—and more on short-run survival.[2]

To evaluate these views, we assess the impact of competition laws on CSR activities using a cross-firm, cross-country panel dataset on CSR activities (firm-level) and competition laws (country-level) that covers the 2002-2015 period for about 1,800 firms across 47 countries. By competition laws, we refer to the rules regulating competition among firms, such as the laws concerning mergers and acquisitions, anticompetitive agreements, the ability of firms to exploit dominant positions in markets. To measures these laws, we use a new, comprehensive dataset developed by Bradford and Chilton (2018) and Bradford et al. (2019). They codified data on the competition laws for 123 countries going back to the 19th century. From the individual laws, they create an overall index, *Competition Law Index*, such that higher values indicate laws that more stringently foster competition. We examine the relationship between the *Competition Law Index* and CSR activities. By CSR, we refer to (1) corporate treatment of non-shareholder stakeholders, including employees (e.g., occupational safety, worker training, flexible work hours, etc.), customers, suppliers, and the communities in which firms operate, (2) corporate efforts to mitigate environmental degradation, including by reducing emissions, fostering sustainable resource use, and engaging in green innovation, and (3) governance over socially responsible actions. We use time-series data on firms' CSR activities, which Thomson Reuters compiles from annual reports, stock exchange filings,

[2] Some agency models also suggest how intensifying product market competition can reduce CSR. In particular, some argue that corporate executives receive private benefits from CSR activities, such as enhancing their reputations with politicians, foundations, charitable organizations, and other associations (e.g., Tirole 2001; Pagano and Volpin 2005; Benabou and Tirole 2010; Krüger 2015; and Masulis and Reza 2015). From this perspective, executives seek to invest *more* than the shareholder value-maximizing amount in CSR. Thus, to the extent that intensifying product market competition compels firms to more effectively maximize shareholder value (e.g., Shleifer and Vishny 1997), competition will reduce the private benefits of control and expenditures on CSR activities.

CSR reports, the news media, etc. We test (1) whether more stringent competition laws increase or decrease CSR activities, (2) the corollary that the CSR-boosting effect of competition depends on social norms, and (3) and predictions from the stakeholder value and product differentiation views of how firm financial constraints and market power shape the impact of competition on CSR.

By focusing on competition laws across countries, our work both contributes to and is distinct from Flammer's (2015a) research on international trade and CSR activities. Flammer (2015a) uses import tariff reductions to proxy for shocks to competition and shows that U.S. firms that were more exposed to imports boosted CSR activities more than otherwise similar firms. Rather than using tariff shocks and examining U.S. firms, we exploit time-series variations in competition laws across almost 50 countries and assess how competition shapes CSR activities. We also evaluate (a) the prediction that the CSR-boosting effects of competition will be greater in economies with social norms that place a higher priority on treating others fairly and protecting the environment and (b) predictions concerning the differential impact of competition on CSR activities across firms facing different financial constraints and industries with different degrees of monopolistic power.

We find that intensifying the stringency of competition laws is associated with an increase in CSR activities. In our baseline analyses, we regress firm-year measures of CSR on the *Competition Law Index* while controlling for firm fixed effects, industry-year fixed effects, lagged time-varying firm characteristics (e.g., size, leverage, and profitability), and time-varying country traits (e.g., Gross Domestic Product (GDP) per capita). By including firm fixed effects, we condition out all time-invariant country factors. The estimates indicate that a one standard deviation increase in the *Competition Law Index* is associated with one-quarter of a standard deviation increase in CSR activity. We then expand the control variables to include measures of stock market development, credit market development, institutional quality (e.g., political voice and accountability, regulatory quality, political stability, rule of law, government effectiveness, and control of corruption), and the degree of economic freedom. The estimated relationship between the intensity of competition law stringency and CSR changes varies little when conditioning on these additional variables. Given these

controls and our findings that changes in CSR activities do not predict changes in competition laws, we interpret these firm-level analyses as providing initial, suggestive evidence that more stringent competition laws spur increases in CSR.

We next examine a corollary of the stakeholder view of how competition boosts CSR activities. The stakeholder view suggests that by investing in the well-being of workers, customers, suppliers, and local communities, CSR activities build loyalty and trust with those stakeholders. Thus, when an intensification of competition induces firms to compete for resources and markets, they respond by investing more in CSR activities. A natural corollary is that competition will have a bigger effect on CSR when firms expect CSR activities to generate greater loyalty and trust with stakeholders. To evaluate this corollary, we develop and use a proxy measure of the likely impact of CSR on stakeholders. We use data from the World Value Survey on the degree to which individuals in a country prioritize the types of activities associated with CSR (e.g., social attitudes toward the environment, worker and human rights, and individual voice and accountability) to construct a *Social Norms* index. We posit that the CSR-enhancing effects of competition are stronger in societies with stronger preferences for such norms. Furthermore, assessing this corollary enhances identification by providing evidence on one potential mechanism linking competition and CSR.

Consistent with this corollary, we find that the CSR-boosting effects of more stringent competition laws are greater in societies with higher values of the *Social Norms* index. In particular, we include the interaction between *Competition Law Index* and *Social Norms* in our baseline regression and find a large, positive, and statistically significant coefficient on this interaction term. We estimate that the impact of the *Competition Law Index* on CSR is about twice as large among firms in countries with above the median levels of *Social Norms* as the estimated impact among the full sample of firms and countries.

We next evaluate two key premises of both the stakeholder value maximization and product differentiation views of how competition laws shape CSR. First, these views stress that more stringent competition laws intensify competition and it is this boost in competition that triggers more CSR activities to strengthen ties with stakeholder and/or differentiate products. Since competition laws are designed to combat monopolistic power, an increase

competition law stringency should spur competition more among firms and industries with greater, pre-existing monopolistic power. Thus, if the mechanism highlighted by these views holds, then we should observe a much bigger effect of making competition laws more stringent on CSR activities among firms with greater market power.

Consistent with this first premise, we find that firms with greater pre-existing market power boost CSR more following the enactment of stronger competition laws. Following the literature (e.g., Tirole, 1988; Giroud and Mueller 2010), we use measures of (a) a firm's market share of industry-country sales or assets and (b) the Herfindahl-Hirschman indicators of the concentration of sales or assets in an industry to gauge market power before the change in competition laws. To our baseline regression, we then include the interaction between the *Competition Law Index* and each of these four pre-existing market power indicators. In all cases, we find that the interaction term and the linear term of *Competition Law Index* enter positively and significantly. These results suggest that while more stringent competition laws on average enhance CSR, the effects are stronger for firms with greater market power and among firms in more concentrated industries, i.e., industries in which firms are more likely to have monopolistic power. Furthermore, the estimated impact is high. The CSR-boosting effects of competition laws are more than twice as large among high-market-power firms, which are firms with above the media level of pre-existing market power.

Turning to the second premise, both the stakeholder value and product differentiation views assume that CSR is a costly investment. This suggests a potentially important role for financing constraints in shaping the responsiveness of CSR activities to competition. Specifically, if intensifying competition increases the expected benefits from investing in CSR and there are sizeable upfront costs associated with CSR investments, then financing constraints will shape the ability of firms to respond to legal and regulation reforms that increase competition law stringency. To evaluate this prediction, we use three measures of each firm's financing constraints that are based on (a) accounting measures such as cash-flow to capita, Tobin's Q, debt to capital, dividend to capital, etc. (Kaplan and Zingales 1997); (b) size-age measures that use information on corporate size and age (e.g., Hadlock and Pierce 2010), and (c) tangible assets since tangible assets can more readily be used as collateral to

access external finance.

We find that the impact of competition laws on CSR is smaller among more financially constrained firms. In particular, we include the interaction between the *Competition Law Index* and each of the different measures of financing constraints. In all cases, the results indicate that financing constraints limit the ability of firms to increase CSR in response to more stringent competition laws.

Our analyses contribute to several lines of research. Given the growing focus by investors and companies on corporate social responsibility, researchers are increasingly examining the factors shaping CSR. Researchers, for example, identify factors such as social preferences (Benabou and Tirole 2006; 2010), corporate culture and politics (e.g., Di Giuli and Kostovetsky 2014), corporate governance (e.g., Ferrell, Liang, and Renneboog 2016), and institutional ownership (e.g., Chen, Dong, and Lin 2020). To our knowledge, ours is the first paper to study how the laws regulating competition among firms influence firm-level CSR performance in an international context, and how the CSR-competition nexus depends on social norms.

2. Data, Variable, and Sample

In this section, we first describe the time-series data on CSR for a large, international sample of publicly-listed firms. We then discuss the panel data on national competition laws. We conclude this section by providing summary statistics.

2.1. CSR

The Thomson Reuters ASSET4 ESG database provides information on the CSR activities of publicly-traded firms in more than 60 countries since 2002. They obtain these data from corporate annual reports, stock exchange filings, corporate socially responsible (CSR) reports, non-profit organizations, the news media, and a variety of other sources.

Based on over 100 individual indicators of firms' CSR activities (e.g., Appendix Table A1), Thomson Reuters creates indexes of each firm's commitment to (1) the environment, including resource use, emissions, and green innovation, (2) the treatment of

non-shareholder stakeholders, including employee welfare, human rights, and the ethical treatment of customers, suppliers, and the communities in which the firm operates, and (3) the implementation of CSR activities. We now discuss each of these three indexes. From these three indexes, we also create an overall index of CSR performance that we define below.

2.1.1. Environmental

The *Environmental* index is composed of information on *Resource Use*, *Emission Reduction*, and *Green Innovation*, where Appendix Table A1 defines the individual indicators composing each of these three components. *Resource Use* "reflects a company's performance and capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management" (Thomson Reuters, 2018, p. 15) and consists of 19 individual indicators. *Emission Reduction* "measures a company's commitment to and effectiveness in reducing environmental emission in the production and operational processes" (Thomson Reuters, 2018, p. 15), and consists of 22 individual indicators. *Green Innovation* consists of 20 indicators and measures "a company's capacity to reduce the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes or eco-designed products" (Thomson Reuters, 2018, p. 15). *Green Innovation* measures the extent to which a company developed products that are used to clean the environment, generate clean, renewable energy, treat water or improve water use efficiency, enhance energy efficiency or sustainability, reduce noise emissions, etc. *Green Innovation* also includes indicators of actual investments, such as the ratio of environmental R&D expenditures to the revenues, the proportion of energy distributed or produced from renewable energy sources, and average fuel consumption of the firms' fleet of vehicles.

2.1.2. Social: Treatment of Stakeholders

The *Social* index aggregates information on the extent to which firms enhance employee welfare (*Workforce*), promote human rights (*Human Rights*), engage in community development (*Community*), and fulfill their responsibilities to consumers (*Product*

Responsibility). Since Appendix Table A1 provides the individual indicators composing these four components, we only provide a brief description here. *Workforce* consists of 29 indicators and captures "a company's effectiveness towards job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce" (Thomson Reuters, 2018, p. 15). *Human Rights* consists of eight indicators that measure the degree to which a company respects fundamental human rights, e.g., freedom of association, policies against child and forced labor, and proactive policies for using human rights as a criterion in selecting suppliers. *Product Responsibility* consists of 12 indicators that measure "a company's capacity to produce quality goods and services integrating the customer's health and safety, integrity and data privacy" (Thomson Reuters, 2018, p. 15). *Community* is based on 14 indicators and measures "a company's commitment towards being a good citizen, protecting public health and respecting business ethics" (Thomson Reuters, 2018 p. 15).

2.1.3. CSR Strategy: Implementation of CSR activities

The *CSR Strategy* index aggregates eight indicators on the degree to which firms integrate CSR strategies into their daily operations and decision-making process. As detailed in Appendix Table A1, *CSR Strategy* includes, inter alia, information on whether the company has a CSR committee, publishes a CSR-related report or a section in its annual report on CSR activities, and whether such reports follow Global Report Initiative guidelines, etc.

2.1.4. Overall *CSR Score*: *Average Score* and *PCA Score*

We aggregate the *Environmental*, *Social*, and *CSR Strategy* indexes into two overall measures of CSR performance. First, *Average Score* equals the equally weighted average of the three scores of *Environmental*, *Social*, and *CSR Strategy*. Second, *PCA Score* is the first principal component of these three subcomponents.

2.2. Competition Law Index

We obtain data on competition laws from Bradford and Chilton (2018) and Bradford et al. (2019).[3] Their database includes longitudinal data on a multiplicity of antitrust and other laws regulating competition among firms for 123 countries from 1888 to 2010. As they explain, their data are more comprehensive than other datasets on competition laws with respect to the coverage of laws, countries, and years.

Bradford and Chilton (2018) and Bradford et al. (2019) collect all existing competition laws for 123 countries dating back to the first competition law adopted by each country over the period from 1888 through 2010. For example, the first U.S. federal law regulating market competition is the Sherman Act of 1890 and the first relevant competition law in Germany dates back to 1923. They coded more than 700 competition laws for 123 countries and organized those laws into (1) substantive provisions related to anticompetitive agreements, mergers and acquisitions, and abuse of dominant positions and (2) authority provisions related to addressing and remedying violations of competition laws.

Bradford and Chilton (2018) construct an overall *Competition Law Index* based on the relevant laws of each country in each year. The overall index is the average of the *Authority* and *Substance* indexes. The *Authority* index captures the breadth and depth of authority regarding the enforcement of competition laws, such as who has standing to raise concerns about the violation of competition laws and the remedies available for enforcing those laws. The *Substance* index involves provisions concerning (1) agreements among firms that limit competition (*Anticompetitive Agreements*), (2) mergers and acquisitions (*Merger Control*), and (3) strategies used by firms to exploit their dominant positions (*Abuse of Dominance*).

2.2.1. Authority

Authority includes information on (1) who has legal standing to bring a lawsuit concerning violations of competition laws, (2) the remedies that authorities can impose on those who violate competition laws, and (3) the scope of law with respect to which industries and enterprises fall under the purview of competition laws.

Authority is the summation of eight components. *Private Right of Action* equals one if

[3] Comparative Competition Law: http://comparativecompetitionlaw.org/

a country allows individuals and firms to bring suits against companies that breach competition rules. While governments usually bring anti-competition lawsuits, allowing for individuals and firms to sue increases the legal risk to a firm from engaging in anti-competitive behaviors.

The next five components capture the ability of authorities to impose penalties and remedies—as well as their geographic reach. *Fines* equals one if authorities can impose monetary fines on firms for violating competition laws. *Imprisonment* equals one if a country can imprison those breaching competition laws. *Divestitures* equals one if authorities can reverse, prevent, or modify the structure of mergers and acquisitions. *Damages* equals one if the authorities can provide damages as compensation to injured private parties. *Extraterritoriality* equals one if a country's authority can enforce its laws against anticompetitive conduct emanating from abroad when that conduct adversely affects the competitive climate in the domestic economy. Each of these components adds one to the *Authority* sub-index.

The next two components relate to the presence of industry and enterprise exemptions. *Industry Exemptions* equals -0.5 when a country's competition law exempts certain industries (e.g., agriculture or telecommunications) from adhering to competition laws. *Enterprise Exemptions* equals -0.5 when there exist any exemptions for enterprises (e.g., state-owned).

2.2.2. Substance: Merger Control, Abuse of Dominance, and Anticompetitive Agreements

Substance aggregates information on a country's laws concerning mergers and acquisitions (*Merger Control*), agreements among firms that limit competition (*Anticompetitive Agreements*), and strategies used by firms to exploit their dominant positions (*Abuse of Dominance*).

Merger Control is the summation of seven components regarding the extent to which laws foster competition by regulating mergers and acquisitions. *Pre-merger Notification* equals one if firms obtain approval before completing a merger voluntarily or mandatorily. *Mandatory Notification* equals one if firms must obtain approval before completing a merger. *Economic Reason* equals one if the authorities can restrict mergers that would weaken

competition or strengthen a firm's dominant position. *Public Interest* equals one if regulatory authorities can restrict mergers because the merger would hurt the public interest. *Merger Control* includes information on the arguments that firms can use to defend themselves against accusations that a merger is anticompetitive. These components enter negatively into the *Merger Control* index as legal defenses reduce regulatory control over mergers. *Efficiency Defense* equals -0.5 if the law allows firms to defend anticompetitive mergers by arguing that the merger will enhance economic efficiency enough to outweigh any adverse anticompetitive effects. *Failing Firm Defense* equals -0.5 if firms can justify otherwise anticompetitive mergers when target firms are failing, and bankruptcy would materially reduce the value of their assets. *Public Interest Defense* equals -0.5 if firms can argue the public interest benefits of a merger outweigh its anticompetitive costs.

Abuse of Dominance is the summation of eleven components that gauge the degree to which a country's competition laws regulate firms' exploitation of market power. *General Prohibition* equals two if the law prohibits the abuse of a dominant position, either generically or by specifying actions that would constitute an impermissible abuse of a dominant position. If the law prohibits a firm from setting different prices for different customers to maximize profits, *Discriminatory Pricing* equals 0.25. If the law prohibits a firm from setting unfair prices by using its dominant positions, *Unfair Pricing* equals 0.25. If the law prohibits a firm from setting an extremely low price to eliminate competitors' profits, *Predatory Pricing* equals 0.25. If the law prohibits a firm from providing discounts to incentivize consumers or downstream companies to trade exclusively with them, *Discounts* equals 0.25. If the law prohibits a firm from requesting the retailer to sell a product at a set price, *Retail Price Maintenance* equals 0.25. *Abuse of Dominance* also includes information on non-price related abuses. If the law prohibits a firm from maliciously limiting their supply or restricting their sales to certain customers, *Market Access* equals 0.25. If the law prohibits a firm from setting conditions on the sales of one product to the sales of another product that is not directly correlated, *Tying* equals 0.25. If the law prohibits a firm from conducting any other impermissible abuse of a dominant position, *Other Abuse Acts* equals 0.25. The final two components of *Abuse of Dominance* reflect how competition laws treat defenses of

"abusive" actions. *Efficiency Defense (Dom.)* equals -0.5 if firms can argue that the economic efficiency benefits of otherwise impermissible abusive actions outweigh adverse costs associated with those actions. *Public Interest Defense (Dom.)* equals -0.5 if firms can argue that the public interest benefits of abusive actions outweigh the costs. These two components enter negatively because such defenses reduce regulatory powers over behaviors by dominant firms.

Anticompetitive Agreements is the summation of ten components that measure the degree to which a country's competition laws restrict firms from forming cartels and colluding to set prices, divide-up markets, limit supply, rig bids, and engage in other activities designed to limit competition. Four components involves restricting horizonal constraints, i.e., restrictions on cartels. *Price Fixing*, *Market Sharing*, *Output Limitations*, and *Bid Rigging* each equals 0.5 if a country's competition laws limit firms from colluding to (1) set product prices, (2) divide the market along geographic, demographic, price, etc., (3) limit supply, or (4) when making bids, respectively. Four components involve the degree to which the law limits vertical agreements. *Exclusive Dealing*, *Resale Price Maintenance*, *Tying*, and *Eliminate Competitors* each equals 0.5 if a country's laws prohibit firms from colluding to (1) restrict sales to specific companies, (2) set the price at which retailers sell products to consumers, (3) condition a contract on buying other products that are not directly connected to the product that is the subject of the contract, and (4) engage in coercive practices to eliminate or restrict competitors. The final two components measure legal defenses against accusations of participating in anticompetitive agreements. *Efficiency Defense (Anti.)* equals -0.5 if firms can defend anticompetitive agreements by arguing that the economic efficiency gains outweigh the anticompetitive costs. *Public Interest Defense (Anti.)* equals -0.5 if firms can defend anticompetitive actions by arguing that the public interest benefits of those actions outweigh the costs.

2.2.3. Overall Competition Law Index

Our key measure, the *Competition Law Index*, gauges the overall stringency of a country's competition laws. As defined by Bradford and Chilton (2018), the *Competition Law*

Index is the average of the *Authority* and *Substance* sub-indexes, where *Substance* is the average of *Merger Control*, *Abuse of Dominance*, and *Anticompetitive Agreements*.

2.3. Firm-level Controls

We account for several firm-specific traits. These include the natural logarithm of one plus the total book value of assets of the firm (*Size*), the firm's ratio of long-term debt to the total book value of assets (*Leverage*), and profitability, i.e., the ratio of net income to the total assets (*ROA*). The firm-level data come from Worldscope, which can be linked to the Thomson Reuters ASSET4 ESG dataset by *Datastream Company Code*.

2.4. Country Controls: Economic, Financial, Institutional, and Institutional Development

We condition on four sets of time-varying country-level characteristics in our analyses. First, to control for economic development, we use the natural logarithm of gross domestic product per capita (*GDP per capita*).

Second, we use two measures of financial development, *Stock Market Capitalization / GDP* and *Private Credit / GDP*. *Stock Market Capitalization / GDP* is the ratio of stock market capitalization to GDP, and *Private Credit / GDP* equals credit provided to the private sector by commercial banks and other financial institutions as a proportion of GDP.

Third, we use a composite index of institutional quality developed by the World Bank that is composed of six indicators. These indicators measure the degree to which (1) people can select their government, have freedom of speech and association, have access to a free media, and can hold government officials accountable; (2) the government is capable of formulating and implementing policies and regulations to promote private sector development; (3) there is an absence of political instability and violence related to political issues; (4) people, firms, and governments are confident in and subject to the rule of society, such as the quality of contract enforcement, the protection of property rights, the effectiveness of the police and courts, etc.; (5) there are high-quality civil and public services; and (6) there are limits on officials abusing public power to extract private benefits in the form of corruption. Our indicator, *Institutional Quality*, is the first principal component of

these six components.

Fourth, we use a composite index of economic freedom from the Heritage Foundation that is composed of ten indicators that measure the protection of private property rights, government integrity, the size of the government, the extent to which regulations impede efficient business operations, government interventions in labor markets, taxes, government size, barrier to international trade, constraints on international capital flows and the operation of domestic financial institutions (Miller, Kim, and Roberts 2020). The index of *Economic Freedom* used in our analyses equals the average of these ten measures.[4]

2.5. Sample

Our primary sample consists of 13,907 firm-year observations from 2002 to 2015, which covers 1,789 manufacturing firms in 47 countries. Our sample period starts in 2002 because this is the first year Thomson Reuters ASSET4 contains information on CSR.[5] To enhance the comparability of CSR performance across firms, we focus on manufacturing industries. Table 1 presents the summary statistics of the main variables used in this analysis. As shown, each CSR indicator, including the categorical score has a mean value of around 50. This is due to the ranking-based scoring rule used by ASSET4, which generates a flat distribution for each score and remove the influence of extreme values.

---

[4] More specifically, the ten components of the Heritage Foundation index are: (1) *Property Rights* measures the degree of protecting private property via legal system and government enforcement. (2) *Government Integrity* assesses the corruption practices in all kinds within the government and the transparency of the government. (3) *Tax Burden* measures the marginal tax rates on both individual income and corporate profits. (4) *Government Spending* measures the overall expenditure burden of government, including direct spending for maintaining government and transfer payment in all kinds. (5) *Business Freedom* measures the degree to which regulatory and infrastructure environments hinders efficient business operations, such as the ease of starting, operating, and closing a business. (6) *Labor Freedom* measures the extent to which a country's legal and regulatory framework protects the labor market, such as minimum wages, and restrictions on hiring, working hours and layoff. (7) *Monetary Freedom* measures the extent to which government activities distort prices, along with the overall inflations. (8) *Trade Freedom* measures both tariff and non-tariff barriers on imports and exports of goods and services. (9) *Investment Freedom* measures the constraints on the flow of investment capital, such as capital controls, foreign exchange controls, and national treatment of foreign investment. (10) *Financial Freedom* measures banking efficiency and the extent to which the financial sector is independent from government intervention. While there is some conceptual overlap between several of the components of the *Economic Freedom* and *World Governance Indicator* indexes, the two indexes focus on different issues. *Economic Freedom* emphasizes the extent of freedom concerning economic activities such as business operation, trade, capital flow, and the financial sector, whereas WGI stresses the quality and effectiveness of institutions.

[5] The competition law index developed by Bradford and Chilton (2018) ends in 2010. Given that the competition law is relatively stable over a short period of time, we use the value of the law index in 2010 for the period after 2010.

3. Empirical Results

3.1. Baseline specification

We evaluate the association between competition laws and CSR activities using the following specification.

$$CSR\ Score_{f,c,t} = \alpha_0 + \beta \times Competition\ Law\ Index_{c,t} + \gamma \boldsymbol{X}'_{f,c,t} + \delta_f + \delta_{j,t} + \varepsilon_{f,c,t}, \quad (1)$$

where f, j, c, and t index firm, industry, country, and year, respectively. The dependent variable $CSR\ Score_{f,t}$ represents either *Average Score* or *PCA Score* of firm *f* at time *t*. The key explanatory variable, $Competition\ Law\ Index_{c,t}$, denotes the stringency of laws that regulate competition among firms in country *c* in year *t*. $\boldsymbol{X}'_{f,c,t}$ denotes a vector of covariates at (a) the firm-level, i.e., one-year-lagged values of *Size*, *Leverage*, and *ROA*, and (b) the country-level (*GDP Per Capita*).[6] Appendix Table A1 provides detailed variable definitions. Equation (1) further includes a full set of firm (δ_f) and industry (three-digit SIC) by year ($\delta_{j,t}$) fixed effects to condition out any time-invariant firm traits and time-varying industry characteristics. We estimate Equation (1) using ordinary least squares (OLS), with standard errors clustered at the country level.

3.2. Competition laws and CSR

As shown in Table 2, there is a positive and statistically significant relationship between the stringency of a country's competition laws and firms' CSR activities. The strong connection between the *Competition Law Index* and CSR performance holds when using either the *Average Score* or *PCA Score* measures of CSR. The results are robust to including or excluding time-varying country traits (*Size*, *Leverage*, and *ROA*) and the estimated coefficient on *Competition Law Index* changes little across these specifications.[7] Furthermore,

[6] In robustness test, the results hold when controlling for other country traits, namely financial development, institutional quality, and economic freedom.

[7] In robustness tests, we find that these results hold when examining either the *Authority* or *Substance* components of the *Competition Law Index*, rather than the overall *Competition Law Index*.

the analyses condition on *GDP Per Capita*, mitigating concerns that the positive association between *Competition Law Index* and CSR is a simple manifestation of economic development. Finally, note that these analyses include firm and industry-year fixed effects.

The estimated coefficients are consistent with the view that firms operating in countries with laws fostering more intense competition tend to engage in substantially more CSR activities. To highlight the economic magnitudes, consider the estimates from column (2) that uses *Average Score* to measure of CSR activity and contains the largest set of control variables. The estimates imply that a one standard deviation increase in the *Competition Law Index* leads to an increase of 5.16 (= 0.18 * 28.66) in *Average Score*. This is equivalent to approximately 10% of the sample mean value of *Average Score*, and 25% of its standard deviation.

3.3. Robustness

We conduct a series of robustness tests to mitigate concerns that the positive association between competition laws and CSR is driven by reverse causality or omitted variables. As a preliminary exercise, we assess whether changes in CSR activities among firms in an economy predict changes in that country's competition laws. As shown in Table 3, we find no evidence that changes in CSR predict changes in competition laws. These findings hold whether including or excluding other country characteristics, such as *GDP per Capita*, *Stock Market Capitalization /GDP*, *Private Credit / GDP*, *Institutional Quality*, and *Economic Freedom*.

Next, we employ two strategies to address omitted variable concerns. For omitted country traits to bias our results, the omitted variables must be (a) time-varying, as firm fixed effects control for all time-invariant country characteristics, and (b) correlated with both changes in competition laws and changes in CSR activities beyond any relation with either *GDP Per Capita* or time-varying industry traits. Our first strategy simply adds additional country traits into the baseline model and tests whether the baseline results hold. The second strategy, presented in the next section, evaluates whether the association between competition

laws and CSR performance varies across firms, industries, and countries in a manner consistent with theories of how competition laws shape CSR activities.

With respect to the first strategy, we were primarily concerned that changes in competition laws might be correlated with changes in other national reforms, such as those shaping financial systems, institutional and regulatory quality, and economic freedom. As a result, we include (1) two measures of financial development, *Stock Market Capitalization / GDP* and *Private Credit / GDP*, (2) an overall index of the quality of public institutions, *Institutional Quality*, and (3) an indicator of the absence of government restrictions on economic activity, *Economic Freedom*.

Results presented in Table 4 show that the positive, statistically significant relationship between the stringency of competition laws and firms' CSR performance holds when including these additional controls. The results hold when sequentially conditioning on (1) financial development, (2) institutional development, and (3) economic freedom, or when conditioning on all of these simultaneously. Moreover, the estimated coefficient on the *Competition Law Index* hardly changes across these different regression specifications. Although we cannot control for all conceivable omitted time-varying country traits, the consistency of the estimated coefficient on *Competition Law Index* across different conditioning information sets mitigates concerns that our findings are driven by omitted variable bias.

4. Mechanism: Social Norms and the Stakeholder Value Maximization View

Our findings so far suggest that firms increase CSR activities when competition laws become more stringent. This is consistent with both the stakeholder maximization view that competition spurs firms to strengthen trust and loyalty among key stakeholders through socially responsible actions and the product differentiation view that competition induces firms to distinguish themselves and their products by engaging in more CSR activities.

We next explore a corollary of the stakeholder value maximization view and therefore assess one potential mechanism linking competition laws and CSR activities. Specifically, the stakeholder value maximization view holds that by fostering the well-being of workers,

customers, suppliers, and local communities, CSR activities build loyalty and trust among those stakeholders. Therefore, when greater product market competition induces firms to compete more aggressively for workers, suppliers, clients, resources, and markets, firms will respond by increasing CSR activities. A natural corollary to this view is that competition will have a bigger effect on CSR when firms expect CSR activities to generate greater loyalty and trust with stakeholders. In conducting this examination, we both shed light on one potential mechanism linking competition laws and CSR and reduce concerns with respect to omitted variables and identification.

4.1. Social norms

To assess this corollary, we turn to the vast literature on social norms to construct proxies of the degree to which CSR activities are likely to positively shape the views of corporate stakeholders. According to Akerlof and Kranton (2005, p.12), norms are defined as "peoples' views of how they, and others, should or should not behave." From this perspective, if firms engage in activities that conform to how people believe they and others should behave, we posit that this will build positive bonds between people and those firms. Since CSR activities involve firms protecting the environment and satisfying implicit and informal contracts with stakeholders, we construct measures of the degree to which people in society value those activities.

We measure a country's social norms using data from the fifth wave of the World Values Survey (WVS), which collects responses from a random sample of the population in each country over the period of 2005 – 2009. Our overall index, *Social Norms*, is based on three variables. *Environmental Priority* measures the extent to which respondents in a country prioritize environment over the economy. *Voice at work and community* measures the degree to which respondents in a country consider more important that people have more say about how things are done at their jobs and in their communities than higher economic growth and other national goals. *Human rights* gauges the degree to which people in a nation give priority to progress toward a less impersonal and more humane society over a stable economy and other aims of society. *Social Norms* equals the average of these three

components, and a higher value of *Social Norms* indicates that individuals in a country have stronger social attitudes toward prioritizing environment, worker and human rights, and individual voice and accountability. If a country has a value of *Social Norms* above the sample median, then we set *High Social Norms* equal to one; correspondingly, if the country has a *Social Norms* score below the sample median, we set *High Social Norms* equal to zero.

4.2. Competition laws, social norms, and CSR: Results

To test the corollary that the CSR-enhancing effects of competition laws are stronger in countries with higher social norms, we modify equation (1) by adding the interaction term between *Competition Law Index* and *High Social Norms*. The model specification is as follows.

$$CSR\ Score_{f,c,t} = \alpha_0 + \beta_1 \times Competition\ Law\ Index_{c,t} \times High\ Social\ Norms_c + \beta_2 \times Competition\ Law\ Index_{c,t} + \gamma \boldsymbol{X}'_{f,c,t} + \delta_f + \delta_{j,t} + \varepsilon_{f,c,t}, \quad (2)$$

where $High\ Social\ Norms_c$ equals one if country c has a *Social Norms* value above the sample median and zero otherwise and the other variables are same as those in equation (1).

The results reported in Table 5 are consistent with the corollary to the stakeholder value maximization view: the CSR-enhancing effects of competition laws are stronger in countries with social norms that place a higher priority on CSR-type activities. The interaction between *Competition Law Index* and *High Social Norms* enters positively and significantly in all columns, whereas the linear term, *Competition Law Index*, enters insignificantly. These results suggest that an intensification of competition enhances CSR more in high social norms countries. That is, when competition increases the value of stakeholder trust and loyalty, firms conduct more CSR activities when those activities are likely to generate a positive response by stakeholders, i.e., in high social norms countries.

4.3. Social norms results: The components of competition laws and CSR activities

Given the importance of social norms in shaping the CSR enhancing effects of competition law stringency, we extend these results by examining the three individual components of the CSR activities and the two components of the overall competition law index. We first present the results when examining the three components of the CSR measure as the dependent variable and report the results in Panel A of Table 6. Then, in Panel B of Table 6 we provide the results when using the two competition law subcomponents as explanatory variables.

As shown in Panel A of Table 6, the results hold for each of the three CSR components: *Environmental*, *Social*, and *CSR Strategy*. The CSR enhancing effects of competition law stringency are greater in countries with social norms that give greater weight to treating others fairly, mitigating environmental degradation, and giving individuals more say about how things are done at work and in their communities. As shown, the coefficient estimates of the interaction term between *Competition Law Index* and *High Social Norms* are positive and statistically significant in the regressions of the overall score of *Environmental*, *Social*, and *CSR Strategy*.

In Panel B of Table 6, the results also confirm that the CSR-boosting effects of competition law stringency are greater in countries where the *Social Norms* index is large. That is, we find that the results hold for each of the two subcomponents of the *Competition Law Index*: *Authority* and *Substance*. The *Authority* component measures power over the enforcement of competition laws. The *Substance* component measures the laws that limit (1) agreements among firms to limit competition, (2) mergers and acquisitions, and (3) firms from exploiting their dominant positions. As the measure of CSR activity, we use the *Average Score*, though the results are robust to using the *PCA Score* measure. As shown, the interaction term between both (a) *Authority* and *High Social Norms* and (b) *Substance* and *High Social Norms* enters positively and significantly. These results stress that an intensification of competition laws tends to induce a bigger increase in CSR activities among firms in economies with *High Social Norms*, i.e., in economies that place a higher priority on

CSR-type activities. These findings are fully consistent with the stakeholder value maximization view of its corollary focusing on social norms.

5. Extensions: Market Power and Financial Constraints

We next evaluate two key premises of both the stakeholder value and product differentiation views of how competition laws shapes CSR performance. In this section, we analyze how market power and financial constraints shape the CSR-enhancing effects of competition law stringency.

5.1. Market power

The stakeholder value and product differentiation views stress that competition laws intensify competition and it is this intensification of competition that triggers more CSR activities to strengthen ties with stakeholder (according to the stakeholder view) or differentiate products (according to the product differentiation view). Since competition laws are designed to combat monopolistic power by restraining anticompetitive behaviors, making competition laws more stringent should spur competition more among firms that had greater market power and in more monopolistic industries. Put differently, laws that restrict anticompetitive behaviors are less likely to boost competition in highly competitive markets. Hence, if competition laws spur CSR activities by intensifying competition, then the CSR-boosting effects of making competition laws more stringent should be more pronounced (a) among firms with greater market power, and (b) in more concentrated industries, where monopolistic power is more likely to exist.

To assess this premise, we use two measures of each firm's market power and two measures of market structure at the industry level (e.g., Tirole, 1988; Giroud and Mueller 2010). To measure market power in each year, we set (1) *Market power 1* equal to one if the firm's share of total sales among all firms in the same industry-country-year is greater than the sample median and zero otherwise and (2) *Market power 2* equal to one if the firm's share of total assets among all firms belonging to the same industry-country-year is greater than the sample median and zero otherwise. We define industries at the 3-digit SIC level. To measure

competition at the industry level, we use two Herfindahl-Hirschman Index (HHI) measures of concentration. For each industry in each year, we set *HHI 1* equal to one if the sum of squared market shares of each firm's total sales in an industry-country-year is greater than the sample median and zero otherwise, and *HHI 2* equal to one if the sum of squared market share of each firm's total assets in the same industry-country-year is greater than the sample median and zero otherwise. We use the values of *Market power 1*, *Market power 2*, *HHI 1*, and *HHI 2* in the first year of the sample period.

To test whether the CSR-enhancing effects of more stringent competition laws are stronger among firms with greater market power and within less competitive industries, we employ the same regression specification as in Table 5. That is, we modify equation (1) and add the interaction term between *Competition Law Index* and one of the four market power indicators: *Market power 1*, *Market power 2*, *HHI 1*, and *HHI 2*.

As reported in Table 7, the results indicate that the CSR-enhancing effects of increasing competition law stringency are greater among firms with more pre-existing market power and firms within industries with more market concentration. From columns 1 and 2, both the linear term of *Competition Law Index* and its interaction with measures of a firm's market power (*High Market power 1* and *High Market power 2*) enter positively and significantly. These results suggest that while more stringent competition laws on average enhance CSR activities, the effects are stronger for firms with greater market power. Consistent with these results, columns 3 and 4 suggest that the effects of competition law stringency is more pronounced in concentrated industries. The coefficient estimates on the interaction term of the competition law index with *High HHI 1* and *High HHI 2*) are positive and statistically significant at the 1% level. Furthermore, the estimated differential effects of competition laws by pre-existing market power are substantial. For example, consider the results on *High Market power 2*. The estimated coefficients indicate that a one standard deviation increase in the *Competition Law Index* would increase CSR, as measured by *Average Score*, by 4.4 (= 0.177 * 25.1158) for low-market-power firms and by 9.8 for high-market-power firms. That is, the CSR-boosting effects of competition law stringency are twice as large among less competitive firms.

5.2. Financial constraints

Investing in CSR involves upfront expenditures for returns that are likely to accrue over time. For example, improving worker safety conditions requires immediate capital expenditures, while the benefits in terms of trust and loyalty among stakeholders and product differentiation will likely emerge over the longer-run. Similarly, pollution abatement requires sizeable initial investments, while the benefits in terms of stronger stakeholder bonds or customer reactions will likely take longer to materialize. Thus, firms' actual investment in CSR will likely depend on the financial constraint facing firms. In this regard, we expect the effects of competition laws on a firm's socially responsible activities to be stronger if the firm is less financially constrained, as financially constrained firms may be unable to respond to an intensification of competition by boosting investment in CSR.

We use two measures of the financial constraints facing each firm and one measure of the degree to which the firm is in an industry subject to tighter financial constraints. These measures have been extensively used in prior research, as discussed in Giroud and Mueller (2015). First, the *Kaplan-Zingales Index* (*KZ Index*), which was originally developed by Kaplan and Zingales (1997) and later used by Lamont, Polk, and Saa-Requejo (2001) among others, is computed from five accounting indicators: cash flow/capital, Tobin's Q, debt/total capital, dividend/capital, and cash/capital.[8] Second, *Size-Age Index* (*SA Index*), developed by Hadlock and Pierce (2010), is a linear combination of size, size squared, and age.[9] Higher values of the KZ index and SA indexes indicate that the firm is more financially constrained. We compute these measures in the initial year of the sample periods. Third, we use a measure of the degree to which firms in an industry tend to be less financially constrained based on asset tangibility. This industry-based measure gauges the degree to which the industry has a higher proportion of tangible assets, as tangible assets, such as property, plants, and equipment, tend to be easier to collateralize than intangible ones. Since collateral helps mitigate moral hazard and adverse selection problems, industries with more tangible assets

[8] Specifically, $KZ\ Index = -1.001909 * Cash\ Flow/Capital + 0.2826389 * Tobin'sQ + 3.139193 * Debt/Total\ Capital - 39.3678 * Dividend/Capital - 1.314759 * Cash/Capital.$

[9] Specifically, $SA\ Index = -0.737 * Size + 0.043 * Size^2 - 0.040 * Age.$

will tend to have easier access to external credit than those with less collateralizable assets (e.g. Stiglitz and Weiss 1981). To measure each industry's overall degree of collateralizable assets, we do the following. First, for each firm in each year, we calculate the ratio of tangible assets to total assets, and call it *Firm-Tangibility*. Second, we compute the average *Firm-Tangibility* across firms in the same country-industry in a given year and call it *Industry-Tangibility*. Next, we set *High Tangibility* equal to one if the firm belongs to an industry with an above the median value of *Industry-Tangibility* across industries in a country in a year and otherwise zero. *High Tangibility* indicates the firms are in a *less* financially constrained industry.

To estimate the differential effects of competition laws on corporate ESG activities across firms with varying degrees of financial constraints, we employ a model that is similar to equation (2) except for replacing the conditioning variable with one of the measures of financial constraints. In particular, *High KZ Index* (*High SA Index*) is a dummy variable equal to one if a firm's KZ index (SA index) is above the sample median value and zero otherwise. *High Tangibility* is a dummy variable equal to one if firm belongs to a country-industry with above-the-sample-median *Tangibility*, and zero otherwise.

The results reported in Table 8 are consistent with the view that the CSR enhancing effects of intensifying competition laws are greater among less financially constrained firms. In particular, we sequentially include the interaction between the *Competition Law Index* and the three measures of financial constraints: *High KZ Index*, *High SA Index*, and *High Tangibility*. Each of these interaction terms enters significantly. These results are consistent with the view that (a) competition laws motivate firms to invest more in CSR, (b) such CSR investments involve upfront expenditures, and (c) less financially constrained firms are more able to make these investments and boost CSR performance.

5. Conclusion

In this paper, we examine the impact of competition laws on corporate social responsibility. Using firm-level data on CSR from 2002 through 2015 and panel data on competition laws in 48 countries, we find that (1) intensifying competition stringency induces

firms to increase CSR activities and (2) the CSR-enhancing effects of competition law stringency are stronger in countries with social norms that prioritize the types of activities associated with CSR, including social attitudes toward environmental protection, worker and human rights, and individual voice and accountability. Further analyses suggest that laws that restrict anticompetitive behaviors exert a bigger influence on CSR among (a) firms with greater market power and in more monopolistic industries and (b) less financially-constrained firms. Overall, our results are consistent with the stakeholder value view that an intensification of competition resulting from more stringent competition laws induces firms to invest in strengthening relationships with customers, workers, and suppliers through CSR activities.

References

Akerlof, George A., and Rachel E. Kranton, 2005, Identity and the economics of organizations, *Journal of Economic Perspectives* 19, 9-32.

Alchian, Armen A., and Harold Demsetz, 1972, Production, information costs, and economic organization, *American Economic Review* 62, 777-795.

Bagnoli, Mark, and Susan G. Watts, 2003, Selling to socially responsible consumers: Competition and the private provision of public goods, *Journal of Economics & Management Strategy* 12, 419-445.

Baron, David P., 2001, Private politics, corporate social responsibility, and integrated strategy, *Journal of Economics & Management Strategy* 10, 7-45.

Bénabou, Roland, and Jean Tirole, 2006, Incentives and prosocial behavior, *American Economic Review* 96, 1652-1678.

Bénabou, Roland, and Jean Tirole, 2010, Individual and corporate social responsibility, *Economica* 77, 1-19.

Bradford, Anu, and Adam S. Chilton, 2018, Competition law around the world from 1889 to 2010: The competition law index, *Journal of Competition Law & Economics* 14, 393-432.

Bradford, Anu, Adam S. Chilton, Christopher Megaw, and Nathaniel Sokol, 2019, Competition law gone global: Introducing the comparative competition law and enforcement datasets, *Journal of Empirical Legal Studies* 16, 411-443.

Chen, Tao, Hui Dong, and Chen Lin, 2020, Institutional shareholders and corporate social responsibility, *Journal of Financial Economics* 135, 483-504.

Coase, Ronald H., 1937, The nature of the firm, *Economica* 4, 386-405.

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.

Di Giuli, Alberta, and Leonard Kostovetsky, 2014, Are red or blue companies more likely to go green? Politics and corporate social responsibility, *Journal of Financial Economics* 111, 158-180.

Elfenbein, Daniel W., and Brian McManus, 2010, A greater price for a greater good? Evidence that consumers pay more for charity-linked products, *American Economic Journal: Economic Policy* 2, 28-60.

Ferrell, Allen, Hao Liang, and Luc Renneboog, 2016, Socially responsible firms, *Journal of Financial Economics* 122, 585-606.

Flammer, Caroline, 2015a, Does product market competition foster corporate social responsibility? Evidence from trade liberalization, *Strategic Management Journal* 36, 1469-1485.

Flammer, Caroline, 2015b, Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach, *Management Science* 61, 2549-2568.

Giroud, Xavier, and Holger M. Mueller, 2010, Does corporate governance matter in competitive industries?, *Journal of Financial Economics* 95, 312-331.

Giroud, Xavier, and Holger M. Mueller, 2015, Capital and labor reallocation within firms, *Journal of Finance* 70, 1767-1804.

Hadlock, Charles J., and Joshua R. Pierce, 2010, New evidence on measuring financial constraints: Moving beyond the KZ index, *Review of Financial Studies* 23, 1909-1940.

Hilger, James, Eric Hallstein, Andrew Stevens, and Sofia Villas-Boas, 2019, Measuring willingness to pay for environmental attributes in seafood, *Environmental and Resource Economics* 73, 307-332.

Jensen, Michael C., and William H. Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305-360.

Kaplan, Steven N., and Luigi Zingales, 1997, Do investment-cash flow sensitivities provide useful measures of financing constraints?, *Quarterly Journal of Economics* 112, 169-215.

Krüger, Philipp, 2015, Corporate goodness and shareholder wealth, *Journal of Financial Economics* 115, 304-329.

Lamont, Owen, Christopher Polk, and Jesús Saaá-Requejo, 2001, Financial constraints and stock returns, *Review of Financial Studies* 14, 529-554.

Luo, Xueming, and C. B. Bhattacharya, 2009, The debate over doing good: Corporate social performance, strategic marketing levers, and firm-idiosyncratic risk, *Journal of Marketing* 73, 198-213.

Masulis, Ronald W., and Syed Walid Reza, 2015, Agency problems of corporate philanthropy, *Review of Financial Studies* 28, 592-636.

McWilliams, Abagail, and Donald Siegel, 2001, Corporate social responsibility: A theory of the firm perspective, *Academy of Management Review* 26, 117-127.

Miller, Terry, Anthony B. Kim, and James M. Roberts, 2020. *2020 Index of Economic Freedom* (The Heritage Foundation).

Pagano, Marco, and Paolo F. Volpin, 2005, The political economy of corporate governance, *American Economic Review* 95, 1005-1030.

Porter, Michael E., and Mark R. Kramer, 2006, Strategy and society: The link between competitive advantage and corporate social responsibility, *Harvard Business Review* 84, 78-163.

Shleifer, Andrei, 2004, Does competition destroy ethical behavior?, *American Economic Review* 94, 414-418.

Shleifer, Andrei, and Robert W. Vishny, 1997, A survey of corporate governance, *Journal of Finance* 52, 737-783.

Siegel, Donald S., and Donald F. Vitaliano, 2007, An empirical analysis of the strategic use of corporate social responsibility, *Journal of Economics & Management Strategy* 16, 773-792.

Stiglitz, Joseph E., and Andrew Weiss, 1981, Credit rationing in markets with imperfect information, *American Economic Review* 71, 393-410.

Thomson Reuters, 2018, Thomson Reuters ESG Scores, Available at https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scores-methodology.pdf. Accessed March 4, 2020.

Tirole, Jean, 1988. *The Theory of Industrial Organization* (MIT press).

Tirole, Jean, 2001, Corporate governance, *Econometrica* 69, 1-35.

Table 1 Summary Statistics

This table presents the summary statistics of the variables that we used in the following analysis. All the statistics are calculated by the sample ranging from 2002 to 2015 for all manufacturing firms that are covered by the Thomson Reuters ASSET4 database. Statistics for country-level variables are based on the country-year level sample from 2002 to 2015.

Variable	N	Mean	Std. Dev.	P10	Median	P90
Firm CSR						
Average Score	13,907	53.749	20.341	26.757	53.687	81.253
PCA Score	13,896	51.960	21.840	22.948	51.983	81.431
Environmental	13,896	53.675	21.918	24.340	53.745	83.300
Social	13,896	52.803	21.746	23.190	53.040	82.080
CSR Strategy	13,907	54.710	27.306	19.840	52.750	92.100
Competition Laws						
Competition Law Index	503	0.673	0.177	0.517	0.678	0.885
Authority	503	0.670	0.212	0.357	0.643	0.929
Substance	503	0.674	0.152	0.419	0.698	0.837
Social Norms						
Social Norms	33	0.494	0.096	0.379	0.512	0.600
Firm Characteristics						
Size	13,907	15.421	1.377	13.786	15.329	17.225
Leverage	13,907	0.172	0.136	0.001	0.160	0.347
ROA	13,907	0.052	0.087	-0.014	0.051	0.138
KZ Index	13,868	-6.895	34.180	-12.774	-1.538	1.246
SA Index	12,785	-3.591	1.830	-5.897	-3.413	-1.468
Market power 1	13,907	0.155	0.236	0.003	0.070	0.445
Market power 2	13,907	0.155	0.236	0.003	0.071	0.448
HHI 1	13,907	0.705	0.327	0.201	1	1
HHI 2	13,907	0.706	0.326	0.215	1	1
Tangibility	13,817	0.448	0.143	0.268	0.443	0.633
Country Characteristics						
GDP Per Capita	505	10.047	1.037	8.534	10.491	10.978
Stock Market Capitalization / GDP	490	77.677	51.501	28.215	63.470	137.160
Private Credit / GDP	497	84.648	41.678	30.204	86.050	144.284
Institutional Quality	505	0.747	2.133	-2.325	1.497	3.043
Economic Freedom	505	68.258	9.521	56.200	68.200	80.400

Table 2 Competition Laws and CSR

This table presents the association between competition law index and firm-level CSR score. We use two firm-specific measures of CSR score. *Average Score* is an equally weighted scores of environmental, social, and CSR strategy. *PCA Score* is the first principal component of the scores of environmental, social, and CSR strategy. The key explanatory variable, *Competition Law Index*, measures the overall stringency of a country's competition laws. Firm-level controls include *Firm Size*, *Leverage*, and *Profitability*. Country controls include *GDP per capita*. We include firm and industry-by-year fixed effects in all columns. The t-statistics are reported in parentheses, with robust standard errors clustered at the country level. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Average Score		PCA Score	
	(1)	(2)	(3)	(4)
Competition Law Index	29.0427***	28.6618***	29.8465***	29.4427***
	(3.3498)	(3.3209)	(3.1281)	(3.1004)
GDP Per Capita	8.9444	7.3479	9.0310	7.6093
	(1.5568)	(1.2778)	(1.4371)	(1.2095)
Size		1.3144***		1.2091***
		(3.1132)		(2.6899)
Leverage		-0.1392		-0.0318
		(-0.0947)		(-0.0199)
ROA		2.4558**		2.9309**
		(2.2734)		(2.6215)
Firm FE	Yes	Yes	Yes	Yes
Industry by Year FE	Yes	Yes	Yes	Yes
# of Obs.	13,983	13,907	13,972	13,896
Adjusted R2	0.8071	0.8078	0.8128	0.8135
# of Clusters	48	47	48	47

Table 3 Pre-existing CSR and Competition Laws

This table reports the connection between pre-existing measures of CSR score and the competition law index. The dependent variable, *Competition Law Index*, measures the overall stringency of a country's competition laws. The key explanatory variable is one-year-lagged measure of CSR, *Average Score* and *PCA Score*, averaged across firms in each country. Country controls include *GDP Per Capita*, *Stock Market Capitalization / GDP*, *Private Credit / GDP*, *Institutional Quality*, and *Economic Freedom*. We include country and year fixed effects. The t-statistics are reported in parentheses, with robust standard errors clustered at the country level. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Competition Law Index			
	(1)	(2)	(3)	(4)
Average Score	-0.0017	-0.0002		
	(-1.1007)	(-0.2714)		
PCA Score			-0.0015	-0.0002
			(-1.1049)	(-0.3136)
GDP Per Capita		0.4470*		0.4466*
		(1.8886)		(1.8877)
Stock Market Capitalization / GDP		-0.0004		-0.0004
		(-1.2278)		(-1.2284)
Private Credit / GDP		-0.0001		-0.0001
		(-0.2318)		(-0.2298)
Institutional Quality		-0.0251		-0.0251
		(-0.9715)		(-0.9725)
Economic Freedom		-0.0016		-0.0016
		(-0.6267)		(-0.6242)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
# of Obs.	505	482	505	482
Adjusted R2	0.8905	0.9121	0.8906	0.9121
# of Clusters	47	46	47	46

Table 4 Competition Law and CSR Performance, Robustness

This table shows the association between competition law index and firm-level CSR score after controlling for additional country-level factors. We use two firm-specific measures of CSR score. *Average Score* is an equally weighted scores of environmental, social, and CSR strategy. *PCA Score* is the first principal component of the scores of environmental, social, and CSR strategy. The key explanatory variable, *Competition Law Index*, measures the overall stringency of a country's competition laws. Firm-level controls include *Firm Size*, *Leverage*, and *Profitability*. Country controls include *GDP per capita*, *Stock Market Capitalization / GDP*, *Private Credit / GDP*, *Institutional Quality*, and *Economic Freedom*. We include firm and industry-by-year fixed effects in all columns. The t-statistics are reported in parentheses, with robust standard errors clustered at the country level. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Average Score				PCA Score			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Competition Law Index	27.0067***	27.9458***	27.9129***	25.2610***	27.6015***	28.5588***	28.6894***	25.7262***
	(3.3977)	(3.2318)	(3.1787)	(3.1073)	(3.1896)	(3.0047)	(2.9879)	(2.9327)
GDP Per Capita	6.9624	7.9976	8.1557	8.6599*	7.2468	8.4120	8.4236	9.0646*
	(1.5731)	(1.3982)	(1.3494)	(1.8109)	(1.4983)	(1.3417)	(1.2822)	(1.7399)
Stock Market Capitalization / GDP	-0.0143			-0.0174	-0.0170			-0.0201
	(-0.9822)			(-1.1129)	(-1.0566)			(-1.1674)
Private Credit / GDP	-0.0670***			-0.0661***	-0.0727***			-0.0719***
	(-2.8024)			(-2.9697)	(-2.7919)			(-2.9091)
Institutional Quality		-0.7058		-1.0421		-0.8722		-1.1615
		(-0.8588)		(-1.1455)		(-0.9690)		(-1.1827)
Economic Freedom			-0.1036	-0.0954			-0.1046	-0.0970
			(-0.7225)	(-0.7419)			(-0.6557)	(-0.6715)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry by Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# of Obs.	13,188	13,907	13,907	13,188	13,178	13,896	13,896	13,178
Adjusted R2	0.8095	0.8078	0.8079	0.8096	0.8147	0.8135	0.8135	0.8148
# of Clusters	46	47	47	46	46	47	47	46

Table 5 Competition Law and CSR Performance, Differentiate by Social Norm

This table presents the differential effects between competition law index and firm-level CSR score by different levels of the social norm. We use two firm-specific measures of CSR score. *Average Score* is an equally weighted scores of environmental, social, and CSR strategy. *PCA Score* is the first principal component of the scores of environmental, social, and CSR strategy. The key explanatory variable, *Competition Law Index*, measures the overall stringency of a country's competition laws. *High Social Norms* is a dummy variable that equals one if a firm's headquarters is located in a country with an above-median social norm index, otherwise zero. The *Social Norms* is calculated by using World Value Survey data, which captures the degree to which individuals in a country prioritize the types of activities associated with CSR (e.g., social attitudes toward the environment, worker and human rights, and individual voice and accountability). Firm-level controls include *Firm Size*, *Leverage*, and *Profitability*. Country controls include *GDP per capita*. We include firm and industry-by-year fixed effects in all columns. The t-statistics are reported in parentheses, with robust standard errors clustered at the country level. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Average Score	PCA Score
	(1)	(2)
*Competition Law Index * High Social Norms*	59.3005***	65.5103***
	(5.4295)	(5.5561)
Competition Law Index	1.1238	-0.8723
	(0.1152)	(-0.0885)
Firm Controls	Yes	Yes
Country Controls	Yes	Yes
Firm FE	Yes	Yes
Industry by Year FE	Yes	Yes
# of Obs.	13,142	13,131
Adjusted R2	0.8099	0.8158
# of Clusters	33	33

Table 6 Competition Law and CSR Performance, Subcomponents

Panel A presents the association between competition law index and the specific subcomponents of firm-level CSR scores. Panel B presents the association between firms' CSR score and the two subcomponents of the *Competition Law Index*: *Authority* and *Substance*. The dependent variable in Panel A is the overall score of the *environmental*, *social*, and *CSR Strategy*. *Competition Law Index*, measures the overall stringency of a country's competition laws. The dependent variable in Panel B is the *Average Score*, an equally weighted scores of environmental, social, and CSR strategy. The *Authority* component measures power over the enforcement of competition laws. The *Substance* component measures the laws that limit (1) agreements among firms to limit competition, (2) mergers and acquisitions, and (3) firms from exploiting their dominant positions. *High Social Norms* is a dummy variable that equals one if a firm's headquarters is located in a country with an above-median social norm index, and zero otherwise. *Social Norms* is calculated using World Value Survey data, which captures the degree to which individuals in a country prioritize the types of activities associated with CSR (e.g., social attitudes toward the environment, worker and human rights, and individual voice and accountability. Firm-level controls include *Firm Size*, *Leverage*, and *Profitability*. Country controls include *GDP per capita*. We include firm and industry-by-year fixed effects in all columns. The t-statistics are reported in parentheses, with robust standard errors clustered at the country level. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

Panel A. Subcomponents of CSR Index

	Environmental	Social	CSR Strategy
	(1)	(2)	(3)
Competition Law Index	65.0959***	58.9211***	55.4217**
** High Social Norms*	(3.5010)	(4.6942)	(2.1571)
Competition Law Index	-6.2392	-12.5781	21.9231
	(-0.7036)	(-1.5701)	(1.0330)
Firm Controls	Yes	Yes	Yes
Country Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry by Year FE	Yes	Yes	Yes
# of Obs.	13,131	13,131	13,142
Adjusted R2	0.7694	0.7597	0.6911
# of Clusters	33	33	33

Panel B. Subcomponents of Competition Laws

	Average Score		
	(1)	(2)	(3)
Authority	2.4072		4.8940
	(0.4364)		(0.8229)
*Authority * High Social Norms*	38.9006***		21.5391***
	(2.9938)		(3.0561)
Substance		-9.1128	-9.7636
		(-0.8306)	(-1.0761)
*Substance * High Social Norms*		49.5403***	46.2551***
		(3.8797)	(4.1863)
Firm Controls	Yes	Yes	Yes
Country Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry by Year FE	Yes	Yes	Yes
# of Obs.	13,142	13,142	13,142
Adjusted R2	0.8087	0.8097	0.8100
# of Clusters	33	33	33

Table 7 Competition Law and CSR Performance, Differentiate by Market Power

This table presents the differential effects between competition law index and firm-level CSR score by the market power of a firm. *Average Score* is an equally weighted scores of environmental, social, and CSR strategy. *Competition Law Index* measures the overall stringency of a country's competition laws. *High Market power 1* (*High Market power 2*) is a dummy variable equal to one if a firm has the above-sample-median sales (assets) within its country-industry, and zero otherwise. *High HHI 1* (*High HHI 2*) is a dummy variable equal to one if a firm belongs to an industry with an above-sample-median Herfindahl–Hirschman Index based on sales (assets) in its country, and zero otherwise. Firm-level controls include *Firm Size*, *Leverage*, and *Profitability*. Country controls include *GDP per capita*. We include firm and industry-by-year fixed effects in all columns. The t-statistics are reported in parentheses, with robust standard errors clustered at the country level. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Average Score			
	(1)	(2)	(3)	(4)
Competition Law Index * *High Market power 1*	58.1636**			
	(2.4413)			
Competition Law Index * *High Market power 2*		30.0868***		
		(3.7773)		
Competition Law Index * *High HHI 1*			64.1445***	
			(3.0571)	
Competition Law Index * *High HHI 2*				26.9326***
				(4.0131)
Competition Law Index	23.9457**	25.1158***	22.6703**	22.1500**
	(2.6847)	(2.9619)	(2.5346)	(2.1811)
Firm Controls	Yes	Yes	Yes	Yes
Country Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry by Year FE	Yes	Yes	Yes	Yes
# of Obs.	13,907	13,907	13,907	13,907
Adjusted R2	0.8082	0.8080	0.8083	0.8080
# of Clusters	47	47	47	47

Table 8 Competition Law and CSR Performance, Differentiate by Financial Constraint

This table presents the differential effects between competition law index and firm-level CSR score by different levels of financial constraint. *Average Score* is an equally weighted scores of environmental, social, and CSR strategy. *Competition Law Index* measures the overall stringency of a country's competition laws. *High KZ Index* and *High SA Index* are indicators equal to one if a firm has an above-median Kaplan-Zingales index (Kaplan and Zingales 1997) or Size-Age index (Hadlock and Pierce 2010), respectively. *High Tangibility* is a dummy variable that equals one if a firm belongs to an industry with an above-median asset tangibility. Firm-level controls include *Firm Size*, *Leverage*, and *Profitability*. Country controls include *GDP per capita*. We include firm and industry-by-year fixed effects in all columns. The t-statistics are reported in parentheses, with robust standard errors clustered at the country level. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Average Score		
	(1)	(2)	(3)
Competition Law Index * *High KZ Index*	-22.8847**		
	(-2.0771)		
Competition Law Index * *High SA Index*		-19.3818**	
		(-2.0500)	
Competition Law Index * *High Tangibility*			27.8030*
			(1.9325)
Competition Law Index	41.2962***	37.0014***	7.3240
	(4.4473)	(4.0540)	(0.5474)
Firm Controls	Yes	Yes	Yes
Country Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry by Year FE	Yes	Yes	Yes
# of Obs.	13,868	12,785	13,817
Adjusted R2	0.8076	0.8049	0.8092
# of Clusters	47	44	47

Appendix Table A1 CSR Indicators in ASSET4 Database

Variable	Definition
Environmental Score	The Environmental index is composed of information on Resource Use, Emission Reduction, and Green Innovation. Resource Use includes information on (1) the extent to which companies have policies to improve water efficiency, energy efficiency, and use sustainable packaging; (2) the actual resource use efficiency of companies, including measures such as the ratio of energy consumption to net sales, the proportion of energy generated from renewable energy, and the ratio of water usage to net sales; and (3) the degree to which companies provide detailed data and reports on achieving their own stated initiatives to reduce the use of toxic substances, build environmentally friendly or green buildings, and lessen the degradation of land owned, leased, or managed by the firm or firms in its supply-chain. Emission Reduction includes data on (1) the extent to which companies have policies or targets to reduce emissions; (2) firms actual emissions of toxic chemical and other pollutants; and (3) the degree to which companies provide detailed data and reports on (a) environmental protection expenditures, (b) their stated initiatives to reduce pollution emissions and their adverse effects on biodiversity, (c) participation in emissions trading initiative and collaboration with environmentally-focused NGOs or other organizations, and (d) whether firms have policies to recycle electronic waste, such as computers and air conditioners. Green Innovation includes information on whether companies (a) report on at least one product line or service that is designed to have positive effects on the environment or which is environmentally labeled and marketed, (b) develop products or technologies for use in the clean, renewable energy (such as wind, solar, hydro and geo-thermal and biomass power), (c) develop products or technologies that are used for water treatment, purification or that improve water use efficiency, (d) develop products and services that improve the energy efficiency or sustainability of buildings, (e) develop new products to reduce noise emissions, (f) show initiatives to produce or promote organic products, etc. The Green Innovation subcomponent also includes information on actual investments in green technology, such as the ratio of environmental R&D expenditures to the revenues, the proportion of energy distributed or produced from renewable energy sources, and average fuel consumption of the firms' fleet of vehicles.
Social Score	The Social index aggregates information on the extent to which firms enhance employee welfare (Workforce), promote human rights (Human Rights), engage in community development (Community), and fulfill their responsibilities to consumers (Product Responsibility). Workforce includes, but is not limited to, information on (a) the degree of employee satisfaction, whether a company provides flexible working hours and day care services for its employees; (b) the number of occupational-generated diseases, injuries, and fatalities, as well as the amount of company resources devoted to employee health and safety; (c) diversity and inclusion, such as the percentage of women employees, women managers, employees with disabilities, and whether the company has and implements policies to advance diversity and equal opportunity; and (d) employee training and career development. Human right measures whether a company has a policy to (a) ensure the respect of human rights in general, (b) ensure the freedom of association of its employees, (c) avoid the use of child labor, and forced labor, and (d) use human rights criteria in selecting suppliers. Product Responsibility includes information on the degree of customer satisfaction, whether companies (a) have policies to protect customer health and safety, protect customer and general public privacy and integrity, adopt responsible marketing ensuring

	protection of children, to comply with fair trade rules, regulations, and norms; (b) develop or market products and services that foster specific health and safety benefits for the consumers (such as safe cars), and exclude potentially harmful products from its retail offering (e.g., genetically modified organisms (GMOs), alcohol, tobacco); and (c) monitor the impact of products or services on consumers or the community more generally. Community includes inter alia, measures of whether firms (a) publicize a code of conduct to avoid bribery and corruption, maintain the highest level of general business ethics, improve its good corporate citizenship, and operate as a fair competitor; (b) sell some products or services at a discount in emerging markets, conduct research and development on drugs for diseases in the developing world, and (c) follow international guidelines and provisions such as the OECD Guidelines for Multinational Enterprises, and Extractive Industries Transparency Initiative.
CSR Strategy Score	CSR Strategy covers whether firms (a) have a CSR sustainability committee, (b) publish CSR-related reports, and whether the reports are published in accordance with the Global Report Initiative Guidelines, (c) have an external audit on CSR-related issues, (d) explicitly integrate financial and extra-financial factors in the management discussion and analysis (MD&A) section of the annual reports, and (e) explain how they engage with stakeholders.