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## **Corporate social responsibility in a competitive business environment**

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**Abstract:** Using a specially designed survey instrument in combination with a representative sample of Vietnamese enterprises, we explore firm-level efficiency effects of corporate social responsibility. We find a positive relationship between adoption of corporate social responsibility initiatives and firm efficiency, and reveal that the impact is stronger for firms in non-competitive industries. Moreover, we show that local community focused corporate social responsibility initiatives drive the aggregate effect. This suggests that socially responsible actions by firms are likely to pay-off when stakeholder engagement has a localized focus. We provide evidence of reciprocity by showing that employees accept a lower share of additionally generated value added in exchange for working in a company that signals ‘good’ corporate values.

**Keywords:** firm efficiency, manufacturing, corporate social responsibility, Viet Nam

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## 1 Introduction

While the concept of Corporate Social Responsibility (CSR) has been widely discussed,<sup>1</sup> there is neither general agreement about its definition nor a common way of quantifying CSR at the individual firm level. Moreover, there is disagreement in the literature about whether CSR improves firm performance<sup>2</sup> and/or whether improvements in CSR levels are a necessity for firm survival (at given performance rates). Improvements in CSR can be viewed as part of developing a modern enterprise in a competitive environment. If a firm wants to survive, it has to ‘follow the current’ and develop/improve its level of CSR. Not doing so can be seen as ‘managerial slack’, and will subsequently result in firm closure.

That competition mitigates managerial slack carries relevance for a number of implications. First, concerns about managerial agency problems resulting in deviations from profit maximizing behaviour may be of minor importance in competitive industries. Second, research on the effects of corporate governance may be misleading policy if proxy indicators of corporate social responsible behaviour are not interacted with measures of competition. Third, policies to improve corporate governance could benefit from focusing on non-competitive industries only. Concerns about whether industrial policies should focus on improving industry competitiveness (such as deregulation and antitrust laws) rather than on promoting improved corporate governance structures may be justified.

It is by now accepted that a complex set of social preferences and market imperfections motivate CSR (Crifo and Forget 2015). At the same time, the evidence on the effects of CSR on firm performance and labour is mixed at best. First, CSR is found to increase firm profits and improve general firm performance if it enables (i) lower production (environmental) costs; (ii) product differentiation through price discrimination mechanisms working in favour of the socially responsible firm; or (iii) innovation both in terms of managerial processes as well as technological upgrading. However, managerial slack and decreasing profits are also observed in cases where the delegated responsibilities to firm executives lead to outcomes favouring the interests of stakeholders other than shareholders. Second, competition may have differential effects on CSR adoption and firm performance. If enterprises in competitive settings compete for socially responsible consumers, CSR activities may be boosted by market competition, improving in turn overall industry efficiency. On the other hand, realizing that CSR provides a competitive edge, firms can use CSR strategically to raise entry barriers, increasing relative levels of industry concentration through, for example, influence on the legislative/regulatory system. This may in turn reduce firm-level dynamics and industry-level productivity. Third, employees can also be affected by CSR. It appears that socially and environmentally responsible firms have an advantage in hiring motivated and skilled employees, which yields higher labour productivity. While employees in CSR firms may show higher levels of dedication and success at work, they are also more likely to accept lower than market wages compared to other workers (see a summary in Crifo and Forget 2015).

We use four consecutive rounds of Vietnamese enterprise surveys from 2011 to 2014 (with rich information on CSR behaviour at the firm level) covering 5,185 enterprises (20,740 firm observations) to test three questions: (i) Does CSR lead to improvements in firm performance? (ii) Does CSR have a differential impact on firm-level (labour) productivity depending on the

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<sup>1</sup> See Kitzmuller and Shimshack (2012) for a thorough review.

<sup>2</sup> Crifo and Forget (2015) provide an excellent summary.

level of industry competition? (iii) Do firms use CSR strategically to offer lower labour compensation shares? We start out by exploring the extent to which firms in Viet Nam engage in (and over time change their) socially responsible behaviour. The richness of the data enables overcoming challenges related to unobserved heterogeneity and reverse causality, prevalent among studies in developing countries.

Observing the full range of firms' activities is difficult and so is measuring CSR, which tends to address a range of stakeholder concerns and to be manifested in a variety of activities, from certification of environmental standards to donations to the non-profit sector. This leads to analytical problems in studies that link CSR behaviour and firm performance. For example, the effect of CSR on firm performance may be underestimated if the CSR metrics are noisy indicators of true CSR activities (Chatterji et al. 2009). Even though crucial for establishing the mechanisms of CSR effects, simultaneous treatment of different forms of CSR within one study is, to the best of our knowledge, generally missing in the literature.<sup>3</sup> Accordingly, we focus on three dimensions of CSR including the extent to which the firm (i) complies voluntarily with labour and environmental standards (compliance related CSR, measured by four indicators); (ii) has a well-developed CSR strategy at the management level that goes beyond compliance with existing regulations (management related CSR—four indicators); and (iii) engages in beyond compliance activities not directly linked to firm operations (community/society related CSR—eight indicators). Based on these indicators, we generate a CSR index measuring the degree of CSR-related activities undertaken by the individual firm. We use these different categories of CSR activities to uncover the likely mechanisms underlying the CSR-productivity relationship.

Viet Nam is an interesting case for exploring the potential impacts of CSR on firm-level performance. Initially, social initiatives implemented at the firm level were partly introduced through trade related codes of conduct and partly through increasing engagement by multinationals in Viet Nam (Nguyen 2007). In 2007, the Global Compact Network Viet Nam was launched in order to motivate Vietnamese companies to implement and establish corporate policies relating to labour and environmental standards, human rights, and anti-corruption (UN 2014). This came at the same time Viet Nam entered into the World Trade Organization (WTO), which increased exposure to and knowledge about international standards. This in turn increased the need for well-designed corporate social responsibility strategies at the firm level to ensure sustainable integration of Vietnamese enterprises into global supply chains.

Our results show a positive relationship between CSR adoption and firm efficiency. Controlling for unobserved heterogeneity, adding one additional activity to a firm's strategic CSR portfolio gives on average a well-determined 0.3 per cent increase in labour productivity in the fixed effects estimation. In addition, the positive relationship between CSR adoption and firm efficiency is stronger for firms in non-competitive industries. Trying to dissect this effect by type of CSR engagement reveals that the aggregate effect is largely driven by community level CSR initiatives. The causal effect of community CSR activities on firm performance is confirmed applying the difference generalized method of moments (GMM) estimator, which shows that each additional community related CSR initiative results in a 1.2 per cent increase in labour productivity. Moreover, the stronger community related CSR effect is found among firms that are more deeply rooted in the local community (sourcing most inputs locally and having the majority of their customers within the province/district). This confirms that socially responsible actions by Vietnamese private domestic firms are to some extent likely to be reciprocated. Finally, results reveal that employees are willing to accept a lower share of the additionally

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<sup>3</sup> An exception is Newman et al. (2016).

generated value added in exchange for working in a company signalling ‘good’ corporate values especially benefitting the local community.

Our paper adds to the large literature on the impact of corporate social behaviour on firm-level performance with insights on how the effect of CSR differs by the level of industry concentration. Focusing on different manifestations of CSR, we also contribute to understanding how these potential added benefits from CSR are distributed among stakeholders and workers. The majority of studies on CSR focus on Europe and United States and a recent review of studies on CSR emphasize the need for more empirical tests of the mechanisms driving CSR and its impact on firm performance in emerging countries (Crifo and Forget 2015). To our knowledge, this study is one of the first attempts to map such cross-firm CSR differences for a fast growing transition economy.

The paper is structured as follows. Section 2 presents key concepts that underpin our analysis, while Section 3 defines our quantitative measures of CSR and competitiveness. Section 4 presents the data and the empirical framework, and Section 5 the results. Section 6 concludes.

## 2 Concepts

The literature highlights several reasons for a positive association between CSR and firm performance. First, a positive effect may come through improvements on the company’s image and reputation, which in turn has been shown to influence firm competitiveness and performance, at least in the long run. Second, an improved CSR strategy may improve employee motivation, retention, and recruitment. This effect may come through the above mentioned reputation improvement, or directly through a motivation effect on employees due to (perceived) improvements in the working environment. Third, CSR strategies may lead to efficiency gains as firms become more open to alternative production strategies and to investors with a higher sensitivity to sustainability issues. Fourth, improvements in CSR may lead to revenue increases; either indirectly through improved brand image or directly by CSR-driven product or market development (niche markets). Finally, CSR is a means to reduce or manage CSR-related risks such as the avoidance of negative press coverage.

CSR, however, does not need to result in improved firm performance. A recent meta-study shows that CSR is negatively correlated with firm profits in two per cent of the cases (Margolis et al. 2009). This most likely arises if shareholders caring about social or environmental performance willingly trade profits for social goods (Kitzmueller and Shimshack 2012).

Campbell (2007) argues that firm-level CSR activities are likely to be lower in competitive settings, and that the relationship between industry competitiveness and firm-level socially responsible activities is inversely U-shaped. This is in accordance with Porter and Kramer (2002), who argue that concentrated sectors have lower rates of CSR adoption because firms lack incentives to engage in a socially responsible manner due to lower potential impacts of increasing competitive advantages. In addition, when competition is perfect, firms search for immediate cost-reducing strategies, which likely involve reducing beyond compliance related socially responsible initiatives, in order to ensure firm survival (Shleifer 2004). Bagnoli and Watts (2003) on the other hand argue that CSR activities and industry-level competition will be inversely related, and at the same time that there is a trade-off between the optimal provision of CSR activities and firm-level efficiency.

According to Porter and van der Linde (1995), certain environmental standards and regulations can push forward innovative ideas and subsequently reduce production costs, resulting in

dynamic competitive advantages. The speed at which this process evolves will depend on industry-level competition, thereby leading to a hypothesis of differential impacts of socially responsible behaviour on firm-level productivity along the competition dimension. However, empirical evidence on the Porter and Van der Linde hypothesis appears mixed at best (Crifo and Forget 2015).

Bénabou and Tirole (2010) discuss a different approach to understanding CSR from an economic perspective, from which the impact of the competitiveness/CSR relationship on firm-level productivity can be deduced. Assuming a limit on firm managers' temporal horizon of corporate governance, a negative relationship between firm-level provision of CSR activities and industry-level competitiveness can be observed. Stakeholder monitoring of firm executives is needed to correct for the management's 'short sightedness', but these monitoring tools will be less effective in competitive settings, i.e. leading to a differential efficiency impact of CSR along the industry competitiveness dimension. This result is also shown to apply in settings where stakeholders are willing to sacrifice firm profits (philanthropy) in order to promote CSR behaviour. Applying a transaction cost argument, philanthropy through corporations (delegated monitoring) can be shown to be optimal if transaction costs are lower for corporations than for investors. In such cases, greater prevalence of CSR practices is more likely to be found among larger, more profitable firms, in turn leading to a prediction of an inverse relationship between CSR provision and industry competition. In addition, the model predicts a positive correlation between CSR and firm-level performance, but contrary to Porter and van der Linde (1995), Shleifer (2004), and Campbell (2007), the effect will be continuously diminishing in the level of industry competition.

If CSR helps incentivize workers and makes it easier to attract highly qualified employees, which increases labour productivity (Akerlof and Kranton 2005), the net effect of the increase in value added on firm-level profits (as a share of value added) will depend on the labour compensation package negotiated between workers and employers. Crifo and Forget (2015) summarize papers showing that motivated employees may accept a wage below the equilibrium market value because they enjoy non-monetary compensation through working in a firm aligned with their personal values. We therefore hypothesize that firms using CSR strategically may have lower labour compensation ratios.

### **3 Data and corporate social responsibility and competitiveness definitions**

Our data originate from two sources. First, we use the 2011–2014 Vietnam Enterprise Surveys (VES) collected by the General Statistics Office (GSO), which include the population of all registered manufacturing enterprises with 30 employees or more and a representative sample of the remaining smaller formally registered firms. However, among the surveyed enterprises some were found to report inconsistent financial records, and were therefore excluded from the analysis. This leaves us with a sample of approximately 40,000 manufacturing firms with detailed data on general firm characteristics and performance. The GSO data are thoroughly described in Newman et al. (2013), Newman et al. (2015), and CIEM and UoC (2015). Second, from the above described nationwide enterprise survey, a sample of approximately 8,000 manufacturing firms was selected based on a stratified (by region and sector, 2-digit ISIC) random sampling approach to respond to a specific technology, CSR, and competitiveness survey module referred to as the TCS survey, see CIEM et al. (2015) as well as CIEM and UoC (2012, 2013, 2014, 2015) for details. Combining the two surveys leaves us with a balanced panel of 5,185 firm observations over time and a total of 20,740 observations. Summary statistics of the variables

used in the analysis are documented in Table 1 (split by high (column 2) and low (column 3) levels of competition—see definition below).<sup>4</sup>

Table 1: Summary statistics

	(1)		(2)		(3)	
	All		HHI2 <20 per cent		HHI2 >80 per cent	
	Mean	SD	Mean	SD	Mean	SD
<b>CSR indicators</b>						
CSR index—(0-16)	5.193	(2.278)	5.095	(1.972)	5.482	(2.477)
CSR index A—Management (0-4), mean	1.314	(0.889)	1.230	(0.849)	1.363	(0.896)
CSR index B—Labour (0-4), mean	3.081	(1.166)	3.308	(1.055)	3.006	(1.194)
CSR index C—Community (0-4), mean	0.798	(1.330)	0.557	(1.047)	1.112	(1.501)
<b>Industry competition</b>						
Hirschman/Herfindahl Index by industry and province (HHI1)	0.149	(0.175)	0.021	(0.008)	0.429	(0.206)
Hirschman/Herfindahl Index by industry (HHI2)	0.041	(0.059)	0.023	(0.036)	0.060	(0.078)
<b>Production function</b>						
Revenue per employee, real mill VND (log)	4.795	(1.129)	4.867	(0.984)	4.564	(1.116)
Labour (full-time permanent employees) (log)	4.352	(1.407)	4.505	(1.361)	4.188	(1.426)
Capital per employee, real mill VND (log)	4.723	(1.097)	4.714	(1.036)	4.637	(1.083)
Inputs per employee, real mill VND (log)	4.555	(1.315)	4.627	(1.169)	4.306	(1.315)
<b>Additional financial variables</b>						
Return on Assets (RoA) (profits as a share of total assets)	0.025	(0.401)	0.017	(0.161)	0.024	(0.146)
Wage share (labour cost as a share of total value added)	0.871	(0.272)	0.892	(0.257)	0.877	(0.260)
<b>Additional controls</b>						
State involvement (Yes = 1)	0.043	(0.204)	0.034	(0.182)	0.061	(0.240)
Foreign involvement (Yes = 1)	0.247	(0.432)	0.288	(0.453)	0.170	(0.376)
R&D (Yes = 1)	0.092	(0.289)	0.070	(0.255)	0.123	(0.329)
Final use production (Yes = 1)	0.609	(0.488)	0.562	(0.496)	0.640	(0.480)
Exporter (Yes = 1)	0.386	(0.487)	0.491	(0.500)	0.264	(0.441)
Total observations	20,740		4,007		4,170	

Note: HHI is defined at the 2-digit ISIC level. Only 18,666 wage share observations (3,656 and 3,755 in columns 2 and 3, respectively).

Source: Authors' calculations based on CIEM et al. (2015).

The average revenue per employee is VND121 million with substantial differences between sectors by competition. Competitive sectors show better performance with VND130 million per employee on average, compared to VND96 million in less competitive sectors. The average firm size is 78 employees, reaching 90 in competitive, and 66 in less competitive sectors, respectively. Competitive and non-competitive sectors do not show a huge gap in the value of capital, which averages VND103 million in sectors with weak and VND111 million in sectors with high competition. The value of inputs per employee is higher in competitive sectors. Returns to assets are, however, 40 per cent higher in weakly competitive sectors. Similar shares of value added are distributed to labour in both types of sectors. Weak competitive sectors show higher prevalence of state-owned firms and a lower prevalence of foreign firms. Firms in these sectors tend to have

<sup>4</sup> In a few cases, firm information was inconsistent when merging the two different data sources. In order to ensure that we are merging identical firms across the two databases and over time, we therefore checked that no major changes are observed within the organization of firms with respect to changes in location (province and district), changes in sector (at the 2 and 4 digit ISIC levels), and changes in legal structure.

more research and development (R&D) activities and more frequently produce goods for final consumption, but they are less likely to be exporting than firms in more competitive sectors are.

### 3.1 Defining industry competitiveness

Our main measure of competition is the Herfindahl-Hirschman index (HHI), which is well grounded in industrial organization theory. Given the province autonomy in Viet Nam and lack of cross province marketing and sourcing, we choose to define the HHI as the sum of squared market shares within each province:

$$HHI_{pst} = \sum_{i=1}^N m_{ipst}^2 \quad (1)$$

where  $m(ipst)$  is the market share of firm  $i$  in province  $p$ , in industry  $s$ , in year  $t$ . This means that a higher HHI implies weaker competition, thus higher concentration. The market shares are computed from the more than 40,000 yearly manufacturing firm observations from the VES based on the revenue data reported by each individual firm. Our benchmark measure is the sector-province level HHI based on the two-digit ISIC codes (in the following labelled HHI1), but check robustness of the results using a nationwide sector level concentration index (HHI2) as well. We also considered measures computed at the 4-digit ISIC level when constructing the nationwide concentration index. Given that, this did not change our overall conclusion these results are not reported (but are available upon request).

From Table 1 we see that the average HHI1 value is 0.149, with the value of 0.021 for the most competitive quintile, and 0.429 in the least competitive quintile. HHI2 has a sample average of 0.041 and a difference of 4.3 percentage points between the most and the least competitive quintiles.

### 3.2 Defining corporate social responsibility (CSR)

Although several papers have empirically tried to pin down indicators of CSR, no common measurement or definition exists (Crifo and Forget 2015). The International Organization for Standardization (ISO) has launched a recommendation for CSR behaviour and the UN Global Compact initiative has provided 10 principles as a set of guidelines for ensuring that products and services are produced under decent conditions (responsible supply chain management). Among these principles, two are human rights related, four concern labour, three environment, and one anti-corruption. However, Kitzmueller and Shimshack (2012) note that the literature often includes as well local community/society related CSR initiatives in the definition to measure the degree of ‘local content’ in the firm’s corporate behaviour. According to their comprehensive overview, CSR can be defined as social or environmental behaviour that goes beyond the legal and regulatory requirements of the relevant markets and/or economies. This CSR definition follows closely the statements on CSR Compass ([www.csrcompass.com](http://www.csrcompass.com)), where CSR is described by the voluntary initiatives of companies to integrate social and environmental considerations into their business activities and interactions with stakeholders. This means that CSR activities are characterized by a company’s activities extending beyond its mandatory legal responsibilities (McWilliams and Siegel 2001). In this paper we consider both compliance (most commonly related to labour-related CSR) and beyond compliance indicators of CSR. The focus on compliance CSR is due to the oft-observed weak enforcement of existing regulation in developing country contexts.



Our survey instruments collect detailed data on different CSR aspects, which are divided into the following three sub-components (for details see Table 2 and Appendix Table A by year):

- Labour related responsibilities (4 indicators): Compliance indicators
- Management related responsibilities (4 indicators): Beyond compliance indicators
- Society related responsibilities (8 indicators): Beyond compliance indicators

Labour related responsibilities address the fact that firms are required by law to provide permanent staff with written contracts, set up local trade unions, and pay social and health insurance. As such, our measures of labour related CSR are closely linked to whether a given firm complies with existing labour regulations. Management related responsibilities capture whether firms embed CSR practices into their business strategy. Finally, indicators of community related responsibilities document the extent to which firms actively engage and support local community activities not directly related to the firm's commercial activities.

Table 2: CSR summary statistics, by HHI quintiles

	(1)	(2)	(3)	(4)	(5)	(6)
	All	HHI <20%	HHI 20– 40%	HHI 40– 60%	HHI 60– 80%	HHI >80%
	Average score					
<b>CSR index (0-16), mean</b>	5.193	5.095	4.979	5.125	5.283	5.482
<b>CSR index A—Management (0–4), mean</b>	1.314	1.230	1.317	1.323	1.332	1.363
<b>CSR index B—Labour (0–4), mean</b>	3.081	3.308	3.000	3.049	3.055	3.006
<b>CSR index C—Community (0–8), mean</b>	0.798	0.557	0.663	0.753	0.896	1.112
	Share					
<b>A: Management</b>						
CSR 1: Enterprise has a committee/board overseeing CSR practices	0.431	0.405	0.419	0.437	0.440	0.454
CSR 2: Enterprise has a written down CSR policy	0.747	0.727	0.739	0.750	0.748	0.768
CSR 3: Enterprise is a member of standards groups or agreements that promote CSR	0.029	0.024	0.029	0.026	0.033	0.033
CSR 4: Enterprise has been awarded CSR type certifications or awards	0.107	0.074	0.130	0.110	0.111	0.108
<b>B: Labour</b>						
CSR 5: All permanent employees have a written labour contract	0.965	0.975	0.976	0.965	0.956	0.951
CSR 6: Enterprise has a local/plant level trade union	0.555	0.646	0.515	0.539	0.543	0.538
CSR 7: Enterprise pays contribution to social insurance for employees	0.780	0.842	0.755	0.769	0.778	0.759
CSR 8: Enterprise pays contribution to health insurance for employees	0.782	0.845	0.753	0.775	0.778	0.759
<b>C: Community</b>						
CSR 9: Environmental Protection	0.257	0.184	0.190	0.248	0.283	0.376
CSR 10: Education	0.087	0.056	0.081	0.069	0.103	0.123
CSR 11: Infrastructure Development	0.079	0.050	0.075	0.073	0.092	0.105
CSR 12: Health Care services	0.051	0.039	0.040	0.059	0.051	0.064
CSR 13: Youth Development	0.033	0.015	0.025	0.033	0.043	0.047
CSR 14: Poverty Alleviation	0.206	0.166	0.173	0.191	0.218	0.281
CSR 15: Local Heritage	0.032	0.014	0.030	0.031	0.043	0.041
CSR 16: Sporting events	0.053	0.031	0.048	0.048	0.063	0.075
Number of observations	20,740	4,007	4,223	4,182	4,158	4,170

Note: HHI is defined at the 2-digit ISIC level and at the province level. Using the nationwide HHI index does not qualitatively change the overall picture.

Source: Authors' calculations based on CIEM et al. (2015).

Column 1 in Table 2 documents the average scores and the percentage of firms engaging in each specific CSR related category. As expected we see that enterprises are less likely to engage in beyond compliance (management and community) related CSR as compared to compliance (labour) related CSR. In fact 15 per cent of firms in the sample do not carry out any of the beyond compliance CSR related activities. A total of 19 per cent do not do any form of management CSR, whereas 61 per cent do not involve themselves in community related CSR activities. Only 0.5 per cent of firms do not carry out any of the compliance (labour) related tasks, and more than 50 per cent comply with all four labour related law requirements. The overall picture reported for the full sample in Table 1 is that firms on average score 5 out of 16 looking at the aggregate CSR index and 2 out of 12 considering non-compliance indicators only.

Looking at averages over time, Appendix Table A indicates very little within firm changes in CSR behaviour. However, the share of firms changing CSR ‘position’ over the 2011 to 2014 period within each CSR category is substantial when studying the CSR transition matrices (not reported). The number of ‘off-diagonal’ observations in the transition matrices are especially large within management level CSR (38 per cent of firms change their management related CSR strategy over time) and community related CSR (31 per cent firms change their community related CSR strategy over time).

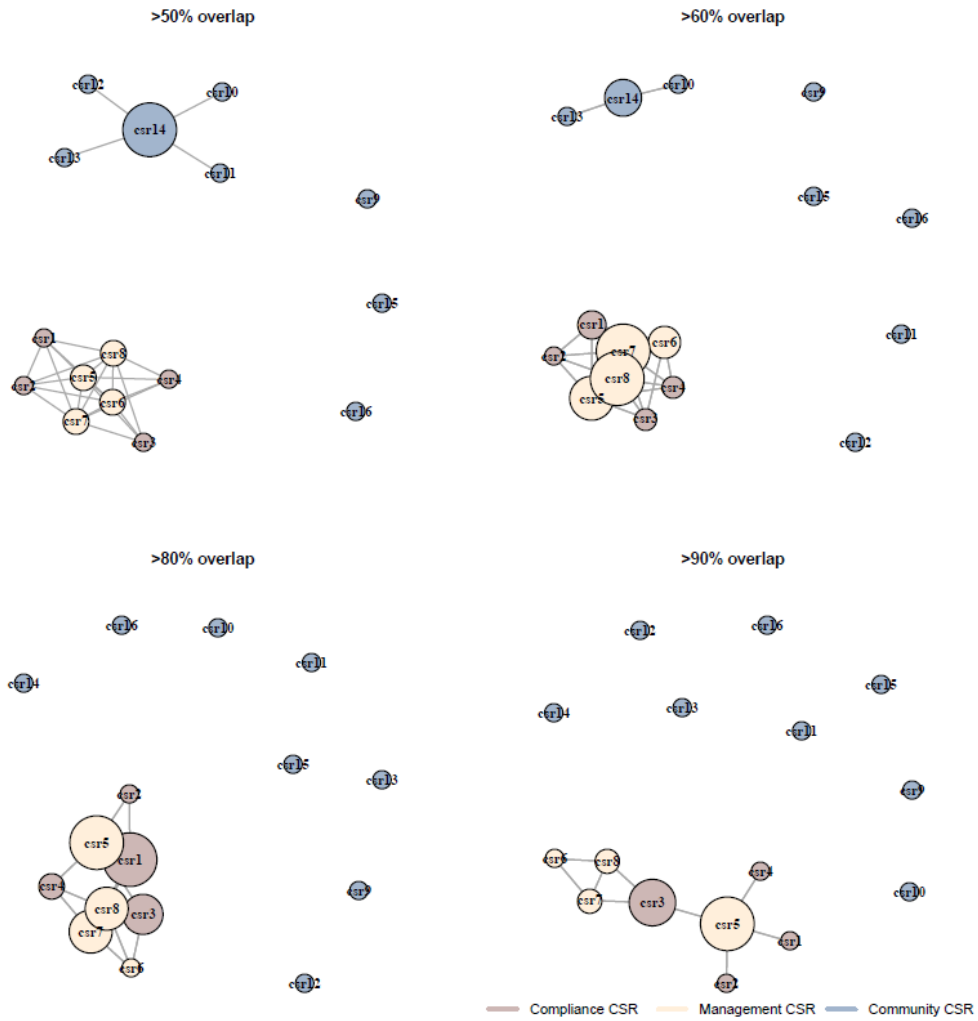
As an example, firms stating that they are ‘carrying out environmental protection activities that goes beyond law requirements’ in one year and not in the other is quite large (18 per cent). Similarly, 10 per cent of firms stating that they have a ‘written down CSR policy’ decided to abandon the policy during the four year period, which suggests that these particular firms possibly did not have a well-defined CSR strategy in the first place.

Given the focus of this paper, we document in Table 2 each CSR related indicator by HHI quintile. The unconditional relationship between CSR and competitiveness does not seem to support the view that competition may induce discipline on corporate social behaviour, at least when considering the aggregate CSR index. Firms in more competitive sectors (low HHI) have a lower CSR score as compared to firms in less competitive industries, and the difference seems to be driven especially by differences in community related CSR. However, this observation depends to a large degree on the choice of HHI definition.

In addition, Figure 1 illustrates the interlinkages between the types of CSR firms engage in. The figure shows measures of the probability of overlap between different types of CSR. More specifically, we ask whether a firm doing one type of CSR (say a firm having a committee/board overseeing CSR practices, CSR indicator 5 in Table 1) is more likely to engage in another specific type of CSR practice (say paying contributions to health insurance for employees, CSR indicator 4 in Table 2).

From Figure 1, we for example see in the bottom right part of the figure that if a firm has a committee/board overseeing CSR practices, it will with 90 per cent certainty engage in more labour related practices (CSR types 1 to 4). Generally, the figure shows that firms carrying out management related CSR are more likely to engage in labour related CSR, and that each of the community based CSR involvements are less linked to other types of CSR practices (although measured at the 50 and 60 per cent probability rate, education, youth development, and poverty alleviation activities tend to go hand-in-hand).

Figure 1: CSR interlinkages



Source: Authors' calculations based on CIEM et al. (2015).

Consequently, in the following analysis we distinguish between different types of CSR (labour, management, or community) when analysing its association with labour productivity.

#### 4 Empirical framework

The framework for our empirical analysis is a standard production function:

$$Y_{i,t} = A_{it} K_{it}^{\beta_K} N_{it}^{\beta_N} M_{it}^{\beta_M} \Rightarrow \left(\frac{Y}{N}\right)_{i,t} = A_{it} \left(\frac{K}{N}\right)_{it}^{\beta_K} N_{it}^{\beta_K + \beta_N + \beta_M - 1} \left(\frac{M}{N}\right)_{it}^{\beta_M} \quad (2)$$

Formulated in logarithms and defining  $\beta_n = \beta_N + \beta_K + \beta_M - 1$  we obtain:

$$y_{i,t} = \beta_n n_{i,t} + \beta_K k_{i,t} + \beta_M m_{i,t} + a_{i,t} + \varepsilon_{i,t} \quad (3)$$

where  $y$  is log revenue per employee (labour productivity),  $n$  is log firm size (number of equivalent full-time employees),  $k$  is log capital per employee (capital intensity), and  $m$  is log of intermediate inputs including raw materials per employee (intermediate input intensity). Total factor productivity (TFP) is represented by  $a$ , and  $\varepsilon$  is a serially uncorrelated residual capturing efficiency shocks, assumed to be exogenous and unobservable by the firm. Based on the literature review in Section 2, we hypothesize that TFP is affected by CSR. We therefore assume that  $a_{i,t} = \delta CSR_{i,t} + c_{i,t} + \mu_i + \xi_{i,t}$ , where we allow for heterogeneity in TFP by including controls for location, industry, ownership form (state or foreign), exporter status (indicator variable taking the value one if the firm exports and zero otherwise), R&D (indicator variable taking the value one if R&D takes place in-house and zero otherwise), and production of intermediates or goods for final use (indicator variable taking the value one if final goods are produced and zero otherwise) summarized by  $c$ . Unobserved heterogeneity in the form of firm-specific effects is denoted by  $\mu_i$ , and a random error term by  $\xi$ . Substituting the expression for TFP into (3) forms the basis of our econometric test for efficiency effects due to CSR adoption. Since one of the main aims of this paper is to examine whether the adoption of a particular CSR strategy has differential effects on firms in competitive and non-competitive industries, we also allow for heterogeneous CSR effects along the competitiveness dimension by estimating:

$$y_{i,t} = \beta x_{i,t} + \delta_1 CSR_{i,t} + \delta_2 HHI_{i,t} + \delta_3 CSR \cdot HHI_{i,t} + c_{i,t} + \mu_i + \eta_{i,t} \quad (4)$$

where  $\beta x_{i,t} = \beta_n n_{i,t} + \beta_k k_{i,t} + \beta_m m_{i,t}$ ,  $CSR$  is an index (0–16) calculated based on the information obtained from answers to the questions described in Table 1 and  $HHI$  is the Herfindahl-Hirschman index (HHI) described in equation (1). Note that for any given HHI value, we can compute the total effect of adopting CSR as  $\delta_1 + \delta_3 \cdot HHI$ . The coefficient  $\delta_1$  on the CSR variable measures the (limit) effect as the HHI goes to zero, implying that it measures the CSR effect on firms in highly competitive industries. The coefficient  $\delta_3$  measures how the effect varies with the degree of competition. The coefficient  $\delta_2$  thereby captures the direct effect of competition. If the conjecture is that firms in more competitive industries (lower HHI) are more efficient (due to more dynamic creative-destruction processes), then the coefficient  $\delta_2$  is expected to be negative.

Assuming that it may take time for output to reach its new long-run level whenever factors of production are changed, makes it important to allow for dynamics in the form of a lagged dependent variable. Inclusion of a lagged dependent variable also makes serial correlation of the residual less likely, which leads to the following dynamic specification:

$$y_{i,t} = \lambda y_{i,t-1} + (1-\lambda)\beta x_{i,t} + \delta_1 CSR_{i,t} + \delta_2 HHI_{i,t} + \delta_3 CSR \cdot HHI_{i,t} + c_{i,t} + \mu_i + \eta_{i,t} \quad (5)$$

A simple empirical approach would be to estimate (5) using OLS or a standard panel GLS estimator. Unfortunately, this approach is likely to yield misleading results if CSR and productivity are correlated for reasons other than causality running from CSR to efficiency. The positive association between CSR and productivity can be due to the self-selection of the relatively more efficient firms into more philanthropic endeavours, rather than to efficiency effects of CSR. Moreover, since equation (5) contains the lagged dependent variable it is crucial to control for heterogeneity between firms or we would expect the estimates to be upward biased, reflecting ‘spurious’ state dependence.

While  $\epsilon$  controls for heterogeneity in certain observed variables, the presence of unobserved heterogeneity in the form of the firm-specific effects  $\mu_i$  presents us with some econometric challenges. Unobserved firm heterogeneity including product attributes or managerial ability might affect a firm’s CSR decisions. As these are permanent attributes they might lead to persistency in CSR behaviour and hence to overestimation of the importance of CSR for firm-level efficiency. Under a strict exogeneity assumption, the fixed effect method eliminates the unobserved time-invariant firm-specific effects. However, it is possible that even with a rich combination of fixed effects and time varying control variables other sources of bias remain. Moreover, the strict exogeneity assumption does not hold in models including a lagged dependent variable. In addition to a traditional fixed effects approach, we therefore apply the two-step difference GMM estimator (Arellano and Bover 1995). A first difference transformation is used to eliminate the firm-specific fixed effect (as opposed to the fixed effects estimator) allowing earlier lags of the endogenous variables to be used as instruments. In the results section, we provide more details on the exact lag structure and the validity of the instrument sets. Using this approach, the parameters are identified using the within-firm variation in CSR and labour productivity over time. Given the short time series of our panel (2011–14), which may limit the extent of variation used to identify parameters and to avoid the possibility that parameter estimates are influenced by the exit and entry of firms rather than within-firm variations, we focus exclusively on a balanced panel of firms.

## 5 Results

### 5.1 CSR, efficiency and competitiveness

Recalling questions 1 and 2 in the Introduction, we wish to establish whether a firm’s CSR adoption choice affects firm-level productivity and if there are different effects on firm performance in competitive and non-competitive industries. Table 3 reports results from estimating specification (5) using HHI1. In Appendix Table B, results are shown using the nationwide HHI2. Columns 1 and 2 report results from pooled OLS estimates with a  $\lambda = 0$  restriction. Column 1 includes only time fixed effects in addition to the variables reported, whereas column 2 incorporates the additional controls described in Table 2 above. Column 3 is the fixed effects version of column 1, whereas column 4 lifts the restriction on  $\lambda$  thereby allowing dynamics. Finally, columns 5 and 6 are fixed effects replicates of columns 3 and 4 on a restricted sample where switchers in R&D, export status, and final goods status (production of final goods or intermediates) are excluded. The justification for looking at the restricted sample is that these indicators (and changes herein) are significant determinants of changes in CSR choices.<sup>5</sup>

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<sup>5</sup> Note that using the same data, Newman et al. (2016) find no systematic relationship between CSR adoption and industry competitiveness (defined at both the 2-digit or 4-digit ISIC level).

Table 3: CSR and sectoral competitiveness HHI1

	1	2	3	4	5	6
	All	All	All	All	Reduced	Reduced
	OLS	OLS	FE	FE	FE	FE
<b>Lagged dependent</b>						
Lagged employment per employee				-0.0027 (0.66)		-0.0004 (0.06)
<b>Efficiency controls</b>						
Employment (log)	0.0456*** (20.13)	0.0300*** (11.06)	-0.0094 (1.32)	-0.0316*** (3.16)	0.0009 (0.09)	-0.0127 (0.96)
Assets per employee (log)	0.0193*** (4.67)	0.0213*** (5.08)	0.0613*** (8.46)	0.0587*** (6.11)	0.0672*** (6.79)	0.0611*** (4.72)
Inputs per employee (log)	0.8294*** (173.16)	0.8304*** (165.10)	0.7786*** (83.65)	0.7686*** (65.31)	0.7761*** (64.02)	0.7693*** (51.72)
<b>Focus variables</b>						
CSR index (0–16)	0.0023** (2.14)	0.0026** (2.51)	0.0027*** (2.80)	0.0027** (2.18)	0.0026* (1.92)	0.0035* (1.79)
Hirschman/Herfindahl Index (HHI1)	-0.0436 (1.56)	-0.0336 (1.11)	-0.0547* (1.77)	-0.0779* (1.91)	-0.0705* (1.66)	-0.0709 (1.25)
CSR*HHI interaction	0.0020 (0.43)	0.0035 (0.73)	0.0116** (2.38)	0.0208*** (3.10)	0.0122* (1.71)	0.0262** (2.39)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,740	20,740	20,740	15,555	14,053	10,751
Firms (clusters)	5,185	5,185	5,185	5,185	4,880	4,880
R-squared	0.96	0.97	0.88	0.88	0.88	0.87

Note: Dependent variable: Real revenue per employee (log). OLS and FE estimates. t-statistics (reported in parenthesis) are heteroscedasticity (cluster) robust. \*, \*\*, \*\*\* indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively. Regressions including sector fixed effects (allowing for sector switchers in the FE) do not change the results reported (available upon request).

Source: Authors' calculations based on CIEM et al. (2015).

Looking at the main results in Table 3, output elasticities of labour, capital, and inputs align throughout with expectations, and the three input variables indicate a production technology close to constant returns to scale.<sup>6</sup> Moreover, we find a negative coefficient (although not well determined in all specifications) on HHI indicating, as expected, that firms in non-competitive industries operate less efficiently.

In all estimations, results indicate a positive relationship between CSR adoption and firm efficiency (centred estimates). This means that even when controlling for unobserved heterogeneity, adding one additional CSR activity to a firm's portfolio gives on average a 0.3 per cent increase in labour productivity in highly competitive industries. Moreover, the positive and well-determined interaction term between CSR and HHI indicates that the positive relationship between CSR adoption and firm efficiency is larger for firms in non-competitive industries. These results are robust to the use of different variations of the industry concentration index (Appendix Table B), although the CSR-competition interaction becomes less well-determined using the nationwide HHI2 index.

<sup>6</sup> The recalculated labour-coefficients based on  $\beta_n = \beta_N + \beta_K + \beta_M - 1$  are between 0.1411 and 0.1969 leading to RTS estimates between 0.9684 and 1.0456.

Table 4: CSR and sectoral competitiveness—CSR heterogeneity

	1	2	3	4	5	6
	All	All	Reduced	Reduced	Private Domestic	State and Foreign
	FE	FE	FE	FE	FE	FE
<b>Lagged dependent</b>						
Lagged employment per employee		-0.0029 (0.72)		-0.0005 -0.09		
<b>Efficiency controls</b>						
Employment (log)	-0.0096 (1.34)	-0.0319*** (3.19)	0.0007 (0.07)	-0.0130 (0.99)	-0.0111 (1.54)	-0.0141 (0.63)
Assets per employee (log)	0.0613*** (8.45)	0.0586*** (6.09)	0.0673*** (6.80)	0.0612*** (4.74)	0.0458*** (6.40)	0.1325*** (6.52)
Inputs per employee (log)	0.7786*** (83.61)	0.7685*** (65.28)	0.7761*** (64.01)	0.7692*** (51.70)	0.8136*** (101.36)	0.6030*** (18.66)
<b>Focus variables</b>						
CSR index A (Management)	0.0007 (0.38)	-0.0007 (0.27)	-0.0017 (0.63)	-0.0029 (0.70)	0.0016 (0.75)	-0.0013 (0.32)
CSR index B (Labour)	0.0045* (1.81)	0.0015 (0.54)	0.0050 (1.55)	0.0030 (0.74)	0.0036 (1.43)	0.0046 (0.57)
CSR index C (Community)	0.0030** (2.15)	0.0045** (2.42)	0.0035 (1.61)	0.0063** (2.05)	0.0035** (2.30)	0.0042 (1.28)
CSR A*HHI interaction	-0.0005 (0.04)	-0.0092 (0.59)	-0.0189 (1.19)	-0.0023 (0.11)	-0.0045 (0.35)	0.0286 (1.04)
CSR B*HHI interaction	0.0221** (2.01)	0.0375*** (2.62)	0.0172 (1.15)	0.0319 (1.60)	0.0213* (1.80)	0.0257 (0.70)
CSR C*HHI interaction	0.0135* (1.80)	0.0280*** (2.69)	0.0256** (2.24)	0.0366** (2.30)	0.0182* (1.92)	0.0006 (0.05)
Hirschman/Herfindahl Index (HHI1)	-0.0715** (1.98)	-0.0939** (1.96)	-0.0615 (1.29)	-0.0639 (1.02)	-0.0569 (1.55)	-0.0990 (0.76)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,740	15,555	14,053	10,751	14,764	5,584
Firms (clusters)	5,185	5,185	4,880	4,880	3,691	1,396
R-squared	0.88	0.87	0.88	0.87	0.92	0.68

Note: Dependent variable: Real revenue per employee (log). FE estimates. t-statistics (reported in parenthesis) are heteroscedasticity (cluster) robust. \*, \*\*, \*\*\* indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively.

Source: Authors' calculations based on CIEM et al. (2015).

Table 4 looks at the possible differential effects of different types of CSR (labour, management, and community) only for the fixed effects specifications in Table 3. The positive relationship found between the aggregate CSR index and labour productivity is driven mainly by community related CSR initiatives. This is in line with Liu (2009) who found that community and non-governmental organization forces are the most important drivers of changes related to enthusiastic social behaviour of Chinese firms. Speculating about the reasons for these findings, several strands in the CSR literature (summarized in Crifo and Forget 2015) emphasize that socially responsible actions by local firms may be reciprocated over time by support from local stakeholders (customers, suppliers, employees, etc.). Firms most likely to experience such reciprocity are firms with a stronger dependency on, and financial engagement with, local community actors. Local linkages are indeed very strong in Viet Nam; 43 per cent of small firms in Viet Nam sell their output in the same province, while 60 per cent of firms purchase raw



materials, and 63 per cent of firms purchase intermediates from suppliers within the same province (CIEM et al. 2015). A stronger community related CSR effect should therefore be found among firms that are more deeply rooted in the local community. We look (in columns 5 and 6 in Table 4) at whether private domestic firms (sourcing most inputs locally and having the majority of their customers within the province/district of their main production facility) are gaining more from community-related CSR initiatives than firms with a more outward oriented business profile (enterprises with state and/or foreign ownership involvement).<sup>7</sup> Results suggest that the positive relationship between community-related CSR and firm efficiency is significantly stronger for domestic private firms as compared to state and to foreign operated firms. This confirms that socially responsible actions by private domestic firms are likely to be reciprocated. Again, a positive and well-determined interaction effect is found, suggesting that community-related CSR initiatives seem to have larger effects on firm-level performance in non-competitive settings.

Table 5: CSR and sectoral competitiveness—GMM estimates

	1	2	3	4	5	6
	Predetermined Diff-GMM	Predetermined Diff-GMM	Endogenous Diff-GMM	Endogenous Diff-GMM	Predetermined Diff-GMM	Endogenous Diff-GMM
<b>Lagged dependent</b>						
Lagged employment per employee	0.0383*** (4.19)	0.0381*** (4.39)	0.0372*** (4.33)	0.0371*** (4.42)	0.0469*** (4.52)	0.0457*** (4.48)
<b>Efficiency controls</b>						
Employment (log)	0.0492 (0.13)	-0.0590 (0.22)	0.0456 (0.15)	-0.0553 (0.24)	0.0810 (0.31)	0.0965 (0.39)
Assets per employee (log)	0.2125 (1.32)	0.1646 (1.40)	0.2084 (1.62)	0.1639 (1.64)	0.1938* (1.74)	0.2011* (1.88)
Inputs per employee (log)	0.7611*** (11.04)	0.7383*** (14.53)	0.7603*** (13.56)	0.7395*** (16.71)	0.7784*** (16.02)	0.7792*** (16.31)
<b>Focus variables</b>						
CSR index (0-16)	-0.0003 (0.10)	-0.0001 (0.04)	-0.0042 (0.36)	-0.0018 (0.17)	-0.0003 (0.07)	0.0041 (0.29)
Hirschman/Herfindahl Index (HHI1)	-0.1416 (1.22)	-0.1392 (1.32)	-0.0948 (0.50)	-0.0500 (0.27)	-0.1447 (1.04)	-0.1287 (0.52)
CSR*HHI interaction	0.0367 (1.40)	0.0475** (2.10)	0.0714 (1.55)	0.0852* (1.90)	0.0443* (1.73)	0.1011 (1.50)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls	No	Yes	No	Yes	No	No
Observations	10,370	10,370	10,370	10,370	7,449	7,449
Firms (clusters)	5,185	5,185	5,185	5,185	4,574	4,574
No of Instruments	16	45	16	45	16	16
Hansen OID test (p- value)	0.363	0.638	0.358	0.637	0.812	0.805

Note: Dependent variable: Real revenue per employee (log). Columns 5 and 6 are for the reduced sample. Arellano-Bond (1991) DIFF-GMM estimator. Twostep with Windmeijer's finite-sample correction for the two-step covariance matrix. t-statistics are reported in parenthesis. \*, \*\*, \*\*\* indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively.

Source: Authors' calculations based on CIEM et al. (2015).

<sup>7</sup> CIEM and UoC (2015) documents that smaller private firms are more likely to source inputs locally and sell output to local customers than larger state and foreign owned companies are.

As discussed in Section 4, there are a number of identification challenges in inferring a causal relationship from the estimates in Tables 3 and 4. To overcome these, we use a difference GMM estimator whereby the model is estimated in first differences and the lagged dependent variable and the CSR variables are instrumented by their lags. To avoid problems of weak instruments, we restrict the instrument set to the first and second lag depending on the Hansen’s test for validity of instruments. The results are presented in Tables 5 and 6. Columns 1 (no additional controls) and 2 (with additional controls) treat CSR as predetermined (independent of current disturbances, but influenced by the past ones—as the lagged dependent variable), whereas columns 3 and 4 treat CSR as endogenous. Columns 5 and 6 are replicates of columns 1 and 2 on a reduced sample excluding firms that change main sector of operation as well as export and R&D status. We generally find that the positive and well-determined effect of CSR on labour productivity found in Table 3 is no longer present, suggesting that the fixed effects estimates are upward biased.

Our results from the difference GMM also suggest from the coefficient estimate on the interaction between CSR and the sector concentration index that the effect of CSR is even more pronounced (factor 2 to 3; although not well-determined throughout) in non-competitive sectors than suggested by the OLS and fixed effects specifications in Table 3.

Table 6: CSR heterogeneity and sectoral competitiveness—GMM estimates

	1A	2A	3A	4A	5A
	CSR Index A	CSR Index B	CSR Index C	Private CSR Index C	State CSR Index C
	Pre	Pre	Pre	Pre	Pre
	Diff-GMM	Diff-GMM	Diff-GMM	Diff-GMM	Diff-GMM
<b>Focus variables</b>					
CSR index A, B or C	-0.0120 (1.43)	-0.0271*** (3.33)	0.0122*** (3.02)	0.0072* (1.79)	0.0140 (1.56)
Hirschman/Herfindahl Index (HHI1)	-0.0039 (0.04)	-0.1707 (1.44)	-0.0012 (0.01)	0.0076 (0.09)	-0.1211 (0.31)
CSR Index*HHI interaction	0.0785* (1.79)	0.1426*** (3.26)	0.0334 (1.44)	0.0240 (0.99)	-0.0436 (1.01)
Year dummies	Yes	Yes	Yes	Yes	Yes
Additional controls	Yes	Yes	Yes	No	No
Observations	10,370	10,370	10,370	7,382	2,792
Firms (clusters)	5,185	5,185	5,185	3,691	1,396
No of Instruments	45	45	45	16	16
Hansen OID test (p-value)	0.186	0.431	0.593	0.676	0.606

Note: Dependent variable: Real revenue per employee (log). Arellano-Bond (1991) DIFF-GMM estimator. Twostep with Windmeijer’s finite-sample correction for the two-step covariance matrix. t-statistics (reported in parenthesis). \*, \*\*, \*\*\* indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively. Results comparable to column 2 in Table 5.

Source: Authors’ calculations based on CIEM et al. (2015).

Following up on the differential effects found in Table 4 of CSR on labour productivity depending on CSR type, in Table 6 we run the difference GMM specification by CSR group (labour, management, and community). Columns 1–3 are comparable to the results in column 3 of Table 5, whereas columns 4–6 can be compared to column 4 of Table 5 for the aggregate CSR index. Results are more or less consistent with the findings in Table 4. While community level CSR continues to have an influence on firm-level labour productivity, this effect is independent

of sector level concentration in the difference GMM. Moreover, the community CSR effect seems to be stronger among private domestic firms as compared to state and foreign operated entities (columns 7 and 8). In addition, results in Table 6 suggest that labour (compliance) related CSR continues to have a differential impact on labour productivity depending on sector concentration levels, but in the GMM specification management related CSR seems to be non-linearly related to labour productivity along the sector concentration dimension.

Overall, we conclude that beyond compliance management related CSR initiatives (such as whether the firm has a written down CSR policy, is a member of standards groups, agreements to promote CSR, or has been awarded CSR type certifications) and compliance labour related CSR initiatives do not have independent effects on firm-level productivity. However, for community related CSR initiatives (such as firm-level involvement in local environmental protection activities, active participation in local poverty alleviation, education, and/or health programmes) there is an independent positive and well-determined effect on firm-level productivity. Each additional community related CSR initiative results in a 1.2 per cent increase in labour productivity. One mechanism behind this positive relationship between community level CSR initiatives and firm performance may go through a worker incentive effect. We therefore focus next, on whether workers in comparable firms accept lower wage compensation (given productivity) in enterprises with a stronger social corporate profile (i.e. the third question raised in the Introduction).

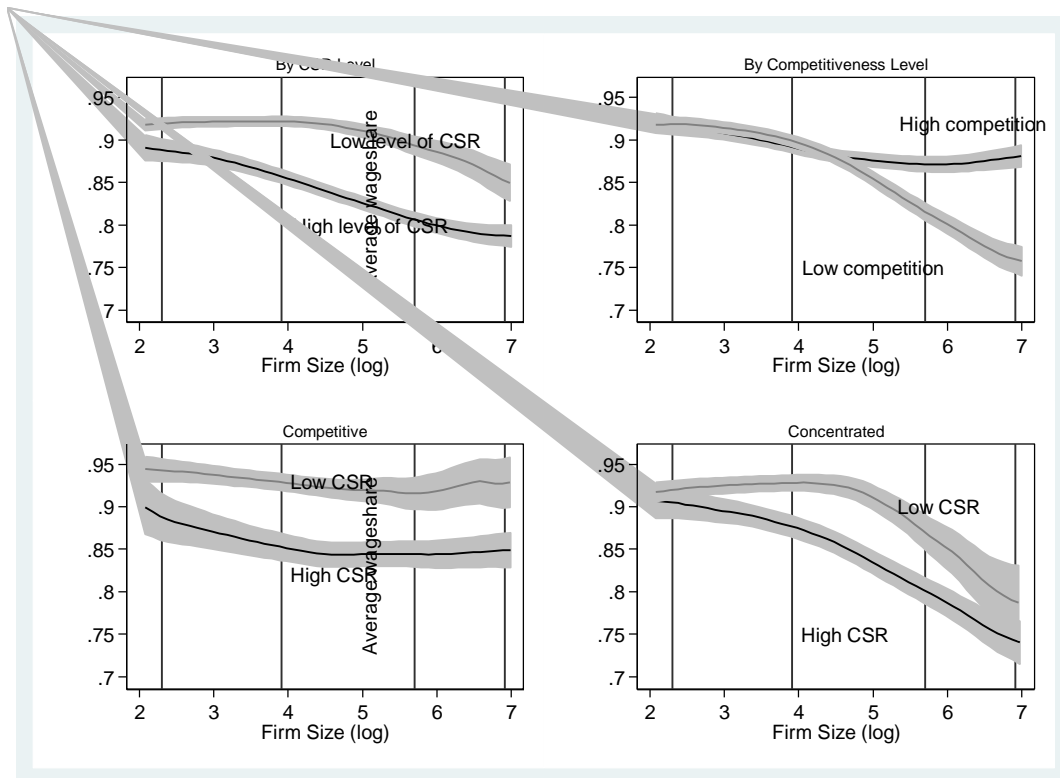
## 5.2 Labour compensation

Akerlof and Kranton (2005) argue that CSR can be used strategically to signal a corporate culture that can help incentivize workers. This could help explain the positive relationship between CSR and labour productivity. According to Crifo and Forget (2015), a strong CSR company profile may also motivate employees in a way that weakens workers' relative bargaining power in wage negotiations, thereby leading to an equilibrium outcome where workers are willing to accept lower wages in exchange for having a job in a well-renowned company.

As an illustration of the latter and confirming this using the Vietnamese firm-level data, Figure 2 shows the association between firm size and the average wage share (share of value added being paid out as labour compensation), split by CSR (panel A) and industry competition (panel B). The black curve is the average wage share in firms with a high level of CSR (panel A) or operating in a competitive industry (panel B) while the grey curve is the average wage share in firms with a low level of CSR and competition pressure, respectively. The shaded areas show the point-wise 90 per cent confidence intervals. The four vertical lines in the plots indicate the upper limits on the size of enterprises using the standard World Bank definition: micro (10 employees), small (50 employees), medium (300 employees), and large (1,000 employees). Starting with Panel A, we see a significant difference in wage shares being paid by firms with high and low levels of CSR. Throughout the size distribution, we find that firms more actively engaging in CSR activities tend to compensate their employees at a lower rate of total generated value added than their counterparts, which are less involved in CSR activities.

Panel B of Figure 2 shows the average wage share differences between firms operating in highly competitive industries (HHI<30 per cent), compared with firm in concentrated sectors (HHI>70 per cent). It can be seen that workers in highly competitive sectors are compensated at a relatively constant rate of value added (around 90 per cent); whereas there is a sharp decline in wage compensation shares along the firm size distribution in concentrated sectors.

Figure 2: Labour compensation, CSR, and competition



Note: Kernel weighed local mean smoothing using the Epanechnikov kernel and a bandwidth of 0.8. The black curves are for high levels of CSR and competition respectively; the grey curve is for low levels of CSR and industry competition, respectively. Shaded areas are point-wise 90 per cent confidence intervals. Vertical lines are at 2.30, 3.91, 5.70, 6.91 indicating 10, 50, 300, and 1,000 employees, respectively.

Source: Authors' calculations based on CIEM et al. (2015).

Panels C and D of Figure 2 show wage differences between high and low CSR firms along the industry competitiveness dimension. In competitive industries, the share of value added accruing to workers in 'low' CSR firms is at a relatively constant level, which along the firm size distribution is higher than in 'high' CSR firms. In concentrated sectors, average labour compensation shares of value added are log-linearly declining in firm size in companies with strong CSR profiles. Throughout the firm size distribution, firms less engaged in CSR activities allocate larger shares of value added to their workers, and it is noticeable in both panel C and D that the differences in labour compensation rates between high and low CSR firms are more pronounced in the medium firm size segment. Moreover, Appendix Table D shows that the negative CSR effect on labour compensation shares is driven by management and labour related CSR initiatives. In sum, our results lend support to the literature arguing that employees are willing to accept a lower share of value added in exchange for working in a company signalling 'good' corporate values.

## 6 Conclusion

This study used firm-level panel data for more than 5,000 firms from Viet Nam during the period 2011–14 to examine the relationship between different types of corporate social responsibility (CSR) and firm-level performance. We asked three questions:

- Are CSR adopting firms more productive?
- Does CSR matter in competitive industries?
- Do firms use CSR strategically to offer lower labour compensation shares?

We found a positive relationship between CSR engagement and firm efficiency, and conclude that this positive effect is largely driven by CSR initiatives labelled as community level CSR. That is, corporate social responsible acts focused at servicing local society (environmental protection activities, participation in local poverty alleviation programmes, community based education, and/or health programmes). Firms that are more reliant on the localized economy (for example firms sourcing inputs at the district level and having the majority of customers within the local community) are more likely (given firm size) to engage in socially responsible actions at the local community level. Our results indicate that these social initiatives are likely to be reciprocated through a workforce mechanism where employees are willing to accept a relatively lower share of generated value added. Moreover, CSR impacts are found to be stronger for firms in non-competitive industries. Therefore, the hypothesis that competition mitigates managerial agency problems cannot be rejected, at least in the case of Vietnamese manufacturing firms.

Overall, our findings offer evidence in the case of Viet Nam that CSR may have an independent positive impact on firm-level efficiency; and that this positive productivity effect is driven more by (smaller) domestic firms' engagement in local community CSR initiatives than more strategic CSR initiatives by larger corporations (state and/or foreign owned). Noting that foreign owned enterprises are found to engage relatively less in community based CSR initiatives than both state owned enterprises and domestic owned firms leads us to question the frequently found argument that increased foreign involvement in the economy will automatically bring about positive improvements in the corporate social behaviour of domestic firms through learning and spillovers from foreign companies. This is, based on our findings, unlikely to happen unless concerted policy action to the contrary is taken.

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## Appendix

Appendix Table A: CSR summary statistics, by survey year

	(1)	(2)	(3)	(4)	(5)
	All	2011	2012	2013	2014
Average score					
<b>CSR index (0-16), mean</b>	5.193	5.078	5.170	5.207	5.316
<b>CSR index A—Management (0–4), mean</b>	1.314	1.248	1.259	1.387	1.360
<b>CSR index B—Labour (0–4), mean</b>	3.081	3.049	3.063	3.040	3.175
<b>CSR index C—Community (0–8), mean</b>	<b>0.798</b>	0.782	0.848	0.780	0.781
Share					
<b>A: Management</b>					
CSR 1: Has a committee/board overseeing CSR practices?	0.431	0.375	0.383	0.493	0.474
CSR 2: Has a written down CSR policy?	0.747	0.734	0.738	0.758	0.756
CSR 3: Member of standards groups or agreements that promote CSR standards?	0.029	0.028	0.026	0.037	0.025
CSR 4: Has been awarded CSR type certifications or awards?	0.107	0.111	0.112	0.099	0.105
<b>B: Labour</b>					
CSR 5: All permanent employees have a written labour contract?	0.965	1.000	0.944	0.962	0.952
CSR 6: Enterprise has a local/plant level trade union?	0.555	0.524	0.553	0.543	0.603
CSR 7: Enterprise pays contribution to social insurance for employees?	0.780	0.760	0.781	0.768	0.810
CSR 8: Enterprise pays contribution to health insurance for employees?	0.782	0.765	0.784	0.768	0.809
<b>C: Community</b>					
CSR 9: Environmental Protection	0.257	0.260	0.272	0.247	0.247
CSR 10: Education	0.087	0.079	0.093	0.087	0.088
CSR 11: Infrastructure Development	0.079	0.082	0.082	0.075	0.078
CSR 12: Health Care services	0.051	0.047	0.054	0.052	0.049
CSR 13: Youth Development	0.033	0.031	0.033	0.034	0.034
CSR 14: Poverty Alleviation	0.206	0.200	0.223	0.201	0.200
CSR 15: Local Heritage	0.032	0.030	0.036	0.030	0.033
CSR 16: Sporting events	0.053	0.052	0.055	0.054	0.052
Number of observations	20,740	5,185	5,185	5,185	5,185

Source: Authors' calculations based on CIEM et al. (2015).

Appendix Table B: CSR and sectoral competitiveness, HHI2

	1	2	3	4	5	6
	All	All	All	All	Reduced	Reduced
	OLS	OLS	FE	FE	FE	FE
<b>Lagged dependent</b>						
Lagged employment per employee				-0.0025 (0.62)		-0.0003 (0.05)
<b>Efficiency controls</b>						
Employment (log)	0.0460*** (20.36)	0.0300*** (11.03)	-0.0095 (1.33)	-0.0313*** (3.13)	0.0009 (0.09)	-0.0124 (0.94)
Assets per employee (log)	0.0193*** (4.66)	0.0213*** (5.10)	0.0612*** (8.45)	0.0591*** (6.14)	0.0672*** (6.79)	0.0617*** (4.76)
Inputs per employee (log)	0.8300*** (173.83)	0.8303*** (165.14)	0.7786*** (83.73)	0.7686*** (65.34)	0.7760*** (64.02)	0.7692*** (51.58)
<b>Focus variables</b>						
CSR index (0-16)	0.0020* (1.91)	0.0026** (2.53)	0.0029*** (3.03)	0.0030** (2.46)	0.0027** (2.02)	0.0037* (1.90)
Hirschman/Herfindahl Index (HHI2)	-0.0331 (0.38)	-0.1102 (1.17)	-0.1721* (1.90)	0.0031 (0.03)	-0.3074*** (2.95)	-0.1928 (1.29)
CSR*HHI interaction	-0.0011 (0.07)	0.0013 (0.09)	0.0269* (1.74)	0.0077 (0.48)	0.0405** (2.08)	0.0233 (0.85)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls	No	Yes	No	No	No	No
Observations	20,740	20,740	20,740	15,555	14,053	10,751
Firms (clusters)	5,185	5,185	5,185	5,185	4,880	4,880
R-squared	0.96	0.97	0.88	0.87	0.88	0.87

Note: Dependent variable: Real revenue per employee (log). OLS and FE estimates. t-statistics (reported in parenthesis) are heteroscedasticity (cluster) robust. \*, \*\*, \*\*\* indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively. Regressions sector fixed effects (allowing for sector switchers in the FE) do not change the results reported (available upon request).

Source: Authors' calculations based on CIEM et al. (2015).



Appendix Table C: CSR heterogeneity and sectoral competitiveness—GMM estimates

<b>CSR treated as endogenous instead of predetermined</b>					
	1B	2B	3B	4B	5B
				Private	State
	CSR Index A	CSR Index B	CSR Index C	CSR Index C	CSR Index C
	Endo	Endo	Endo	Endo	Endo
	Diff-GMM	Diff-GMM	Diff-GMM	Diff-GMM	Diff-GMM
<b>Focus variables</b>					
CSR index A, B or C	-0.0342*	-0.0245	0.0507***	0.0083	0.0343
	(1.69)	(0.83)	(2.84)	(0.47)	(0.29)
Hirschman/Herfindahl Index (HHI1)	0.2200	-0.1305	0.0976	0.0980	0.6249
	(1.14)	(0.46)	(0.59)	(0.66)	(0.22)
CSR Index*HHI interaction	0.2167*	0.1917*	0.0648	0.0634	-0.4379
	(1.85)	(1.68)	(1.07)	(1.10)	(0.26)
Year dummies	Yes	Yes	Yes	Yes	Yes
Additional controls	Yes	Yes	Yes	No	No
Obs	10,370	10,370	10,370	7,382	2,792
Firms	5,185	5,185	5,185	3,691	1,396
No of Instruments	45	60	45	16	16
Hansen OID test (p-value)	0.583	0.176*	0.724	0.605	0.457

Note: Results comparable to column 4 in Table 5. Dependent variable: Real revenue per employee (log). Arellano-Bond (1991) DIFF-GMM estimator. Twostep with Windmeijer's finite-sample correction for the two-step covariance matrix. t-statistics (reported in parenthesis). \*, \*\*, \*\*\* indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively. Column 2B allows additional lags to the instrument set due to a weak Hansen OID test using the preferred specification using a one-lag structure.

Source: Authors' calculations based on CIEM et al. (2015).

Appendix Table D: Wage share and CSR

	1	2	3	4	5	6
	OLS	OLS	OLS	OLS	OLS	OLS
Employment (log)	-0.0170*** (6.70)	-0.0171*** (6.72)	-0.0285*** (10.05)	-0.0285*** (10.05)	-0.0264*** (8.83)	-0.0264*** (8.85)
Firm age	-0.0203** (2.41)	-0.0199** (2.36)	-0.0109 (1.32)	-0.0107 (1.30)	-0.0104 (1.25)	-0.0103 (1.24)
<b>Focus variables</b>						
CSR index (0–16)	-0.0078*** (5.78)	-0.0065*** (3.72)	-0.0049*** (3.63)	-0.0040** (2.37)		
Hirschman/Herfindahl Index (HHI1)	-0.0444** (2.44)	0.0026 (0.07)	-0.0192 (0.80)	0.0094 (0.23)	-0.0162 (0.67)	0.0090 (0.19)
CSR*HHI interaction		-0.0085 (1.29)		-0.0053 (0.82)		
CSR A index (0–4)					-0.0088*** (2.67)	-0.0050 (1.20)
CSR B index (0–4)					-0.0099*** (3.27)	-0.0104*** (2.77)
CSR C index (0–8)					0.0002 (0.09)	0.0004 (0.13)
CSR A*HHI interaction						-0.0267 (1.50)
CSR B*HHI interaction						0.0039 (0.28)
CSR C*HHI interaction						-0.0004 (0.01)
Province dummies	No	No	Yes	Yes	Yes	Yes
Sector dummies	No	No	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,523	14,523	14,523	14,523	14,523	14,523
Firms (clusters)	3,982	3,982	3,982	3,982	3,982	3,982
R-squared	0.03	0.03	0.11	0.11	0.11	0.11

Note: Dependent variable: Wage share (Total labour compensation as a share of value added). OLS estimates. t-statistics (reported in parenthesis) are heteroscedasticity (cluster) robust. \*, \*\*, \*\*\* indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively.

Source: Authors' calculations based on CIEM et al. (2015).