

**ANALYZING THE HISTORICAL AND CURRENT
PERSPECTIVE OF THE RELATIONSHIP BETWEEN
INVENTORY POLICIES AND CSR****Mohammad S.J., Saxunová D., George K.B., Comite U., Ahmed M. Popp J.***

Abstract: In this study, we analyze how a company's inventory policy changes because of adopting CSR policies in the manufacturing companies listed on the Shanghai Shenzhen stock exchange by targeting manufacturing companies, as their overall policies are greatly impacted by the level of inventory. The analysis focus on how inventory policies affect Chinese companies' CSR. Inventory levels affect company policies therefore we chose manufacturing companies. The uniqueness of the topic warranted us to research CSR and Inventory management from historical and current viewpoints. The topic has few investigations, especially in China. Increased worker, consumer, and environmental satisfaction may impact volume, according to this study. Given the uniqueness of the topic, there are a very limited number of studies conducted on the topic, especially in the Chinese context, which warrants us to conduct the study, keeping in view the historical and present perspectives of both CSR and Inventory management. In this study, we take this step further by examining whether the volume is affected by efforts to improve the satisfaction of staff, consumers, and the natural environment. We found that customer satisfaction positively affects the cost-to-sales ratio. Environmental consciousness harms the ratio, and employee satisfaction has an inverted U-shaped association with this ratio. It was also found that

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customer satisfaction positively correlates with inventory levels. Our research has shown that increased levels of social responsibility led to decreased levels of customer corporate social responsibility and increased levels of CSR, which explains the non-linear relationship between a company's total CSR and the to-sales ratio. According to the collected data, the ratio of profits to sales tends to increase when a company's CSR rating is much higher (or lower) than the mean of the CSR distribution.

Keywords: Inventory management, CSR, Inventory to sales ratio, GMM, Manufacturing sector

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Introduction

Inventories are a form of investment for businesses that serve various functions. Traditionally, managing stocks has entailed making decisions regarding factors such as quantity and delivery schedules (Koumanakos, 2008). The focus of research in the field of inventory management has centered on the possibility of reducing costs by limiting the overall level of inventory and reducing stockouts. Recent studies and practical experience have demonstrated that there is more inventory management than simply making minute tweets on procedures as they occur. Inventory management also includes components of the structure. The internal policies and pressure of external stakeholders greatly impact the overall decision making of firms, including inventory-related policies. Each brings unique perspectives, interests, and sways to the table (Vastag and Whybark, 2005). Decisions made at the strategic level, such as the development of an inventory system, can substantially impact daily activities. According to the findings of multiple studies, various organizational actors may have diverse perspectives on a system's adoption, adaptation, and execution. According to (Gaur, M. Fisher, Raman., 2005), political and social pressures may result in significant changes in inventory and other processes.. Therefore, inventory management systems are not always the product of a predetermined approach; rather, they are the result of a procedure that is highly impacted by the interests of several stakeholders.

In China, CSR is a new concept. CSR gained popularity in China after the devastating Sichuan province earthquake of 2008, which killed 69,181 people, injured 374,171 people, and left 18,498 people missing. Approximately 10 million individuals have lost their homes out of a total population of 15 million. It was projected that the damage would cost USD 150 billion. Many people in China expected businesses to help with relief efforts after the Great Sichuan Earthquake. Businesses reacted by pledging \$1.5 billion in aid, establishing a new standard for corporate social responsibility (CSR) in China. Large international corporations quickly donated aid after another serious, albeit less deadly, earthquake that struck Sichuan in 2013. The CN60 million (\$8.5 million) commitment from Samsung and

the CN50 million (\$7 million) contribution from Apple demonstrated that corporate social responsibility had become an intrinsic component of conducting business (Sial et al., 2018).

The world's manufacturing center has shifted to China. The high prices and distractions from the company's core skills (such as technological innovation, product development, and marketing) are the key reasons why many Western brand-name corporations outsource their manufacturing. For this reason, they have decided to contract manufacturing with countries in the developing world, where labor and raw materials are cheap. Since the nation opened its doors and began structural reforms three decades ago, China has emerged as a leading contender. China's export-oriented economic policies, its large pool of low-cost laborers and engineers, and its modern infrastructure (including logistics and communication) all contribute to the country's growing economy as the world's preeminent manufacturing center. As a result, there has been a steady rise in the number of industries outsourced to China's manufacturers. The influx of foreign orders has presented Chinese factories with eccentric possibilities and formidable obstacles. Once catering solely to the Chinese market in a restricted economic system, these producers have had to increase their efficiency and productivity to compete with domestic and international heavyweight (Sial et al.).

They bought and installed enterprise inventory management tools such as manufacturing resource planning (MRP) II, Enterprise Resource Planning (ERP), and Supply Chain Inventory management to use scientific inventory management practices (SCM). Enterprise software was originally used in China during the 1980s and has since gained widespread popularity, with providers including global inventory management software behemoths such as Oracle and SAP, and prominent domestic brands such as Kingdee, UFIDA, and Grasp (Alsmairat and Aldakhil, 2022; Jiao and Li, 2012).

Aligning supply chain infrastructure with the product category leads to higher financial performance, as found in research by (Sial, et al., 2019) and (Al-Shboul and Alsmairat, 2023).As (Hendricks and Singhal, 2005) demonstrate, public corporations can suffer significant losses in market value due to supply chain interruptions. If online stores follow (Rumyantsev and Netessine, 2007) and adopt supply chain structures predicated on traditional inventory models, they have a much better chance of avoiding insolvency. While the bullwhip effect is observed theoretically, (Um et al., 2017) found empirical proof that the demand variability in upper echelons can sometimes be lower than that in lower echelons, suggesting that the bullwhip effect might not always be present in practice. We test these theoretical predictions using the CSMAR database for financial and social responsibility data. Our final dataset contains data on 626 Chinese manufacturing companies from 2011 to 2021. These results conform to our theoretical predictions.

The remainder of this paper is organized as follows. Section 2 consists of a literature review and gap identification, followed by the development of a research hypothesis and a statistical model for testing these hypotheses. The third section consists of

explanatory data and variables used to test the research hypothesis. The fourth section consists of statistical analysis and results, along with a detailed discussion of the results. The fifth section consists of the study's conclusion and its research implications and limitations.

Literature Review

The economic benefits of CSR have been receiving increasing attention. According to Lee (2008, p. 53), "a strong linkage between CSR and the enterprises' financial aims" can be seen as a trend in the development of CSR ideas. In recent years, CSR theories have shifted their emphasis from ethics to performance. The effects of CSR on business financial performance have also been studied in depth, although the level of research has shifted from macro-social to organizational. (Vastag and Whybark, 2005) argue that in the "new world of CSR," companies must carefully analyze how their CSR efforts affect their bottom line. In recent years, a growing number of academics and organizations worldwide have paid close attention to corporate social responsibility (CSR) reporting. Since the inception of Sustainability Reporting in 1993, the KPMG Survey has tracked the worldwide growth of this important industry. The KPMG's Survey of Sustainability Reporting 2020 draws from a pool of the top 250 firms in the world by 2019 sales and the top corporations in 52 countries by sales volume (G 250). Approximately 69 percent of reporting companies have linked business activities with the United Nations Sustainable Development Goals, and almost 46 percent of the sample firms have set targets to reduce carbon emissions inline SGDs by 2030 (Hussain et al., 2023; Threlfall, 2020). One of the major issues related to CSR identified by Fresner ((Fresner, 1998) is the existence of different CSR drivers in developing and developed countries. (Bondi and Yu, 2019) compared CSR reports from three different countries and cultures: China, Italy, and the United States. CSR reporting in China is a topic studied by academics and thinks of tanks from various disciplines and points of view (He et al., 2013; Wang et al., 2021). These investigations can be classified into two basic categories (Clarkson et al., 2008). CSR practices and profitability, and the correlation between discretionary CSR disclosure and auditing financial statements. The underlying relationship between CSR and different components of board have been studied in great deal by the researchers, their positive and negative effects on the overall value of the firm also been well documented. Research on this relationship formulates the first facet of the impact of CSR on firms' characteristics (Clarkson et al., 2008; Melón-Izco et al., 2020; Otola et al., 2021). The second type of study investigates corporate social responsibility (CSR) reports, such as analyses of sustainability report content in China. An intriguing phenomenon was observed in the second investigation: the presence of government regulations frequently appeared (Wagner, 2005). Such legislation tends to increase the pressure on the business, as they already operate in a tough competitive environment (Tseng et al., 2008), such as the Chinese governments' CSR-based reporting initiative, which has led many businesses to adopt environmentally friendly policies, which have been

held by many researchers in positive light when it comes to positive government intervention (Pakurár et al., 2019).

Corporate Social Responsibility and Inventories

With these theoretical foundations in place, this section establishes a link between a company's overall social responsibility performance and its inventory policy. According to existing literature, stakeholder pressure is a major factor in corporate social responsibility (Brammer and Millington, 2003). Environmental policies can be divided into two categories as defined by (Bunge et al., 1996; Pattnaik et al., 2021): conformity and pollution prevention. Businesses with a compliance strategy typically oppose the creation and strict enforcement of environmental laws, preferring to focus on short-term "end-of-pipe" solutions to pollution control. The second climate policy goes beyond compliance. Instead, it prioritizes prevention by using a systematic strategy that emphasizes eliminating pollution at its origin through the implementation of more efficient technology. Both preventative and compliance policies have their own sets of resources that support them (Jonsson and Mattsson, 2008). Adopting technologies that neutralize waste products at the tail end of production is crucial for ensuring compliance. But these solutions only deal with waste after it has been created, they do not alter the manufacturing or service provisioning process. Instead, businesses are anticipated to alter their manufacturing or delivery procedures in response to an environmentally proactive strategy. Proactive pollution prevention measures can mitigate manufacturing waste and pollution (Hart, 1995). Low inventory levels were directly correlated with improved environmental performance. Dealing with reduced inventory levels may help minimize the waste and pollution caused by components and parts (Pakurár, Haddad, Popp, Khan, and Oláh, 2019).

Companies are under increasing pressure to act ethically from various groups and individuals, including employees and environmental groups (Brammer and Millington, 2003). Companies have varying views on the importance of different stakeholders in influencing their CSR practices, and stakeholders have varying degrees of clout when trying to change a company's behavior (Pattnaik et al., 2021). As a result, companies handle their various stakeholder groups in various ways. The degree to which a company relies on the contributions of various constituencies for survival is a major driver of these differences. Therefore, businesses probably won't always respond to the needs of everyone interested in them (Civelek, 2017). Instead, they focus on the concerns of stakeholder groups that hold the key to the firm's most vital resources. In the early stages of a business, while it is still trying to acquire customer confidence in its products, the financial backers who invest in it are the second most important stakeholder group. When a company reaches maturity, its human resources, environmental activists, and suppliers are all people with whom it can interact.

Research Gap

The focus of our study is to determine the influence of inventory policies on Chinese firms' CSR practices. For this purpose, we targeted manufacturing companies

because their overall policies are significantly impacted by inventory levels. Given the uniqueness of the topic, there are a very limited number of studies conducted on the topic, especially in Chinese context and this fact warranted us to conduct the study, keeping in view the historical and present perspective of both CSR and Inventory management. In this study, we take this step further by examining whether the volume is affected by efforts to improve the satisfaction of staff, consumers, and the natural environment.

Research Hypothesis

Hypothesis 1. If a company adopts CSR practices to increase customer satisfaction, it will improve its inventory management practices.

Hypothesis 2. If a company adopts CSR practices to increase employee satisfaction, it will improve its inventory management practices.

Hypothesis 3. If a company adopts CSR practices to increase customer satisfaction, this will negatively impact its overall inventory management practices.

Hypothesis 4. A company following CSR practices will have an inverted U-shaped curve, indicating the underlying relationship between CSR and Inventory management practices.

Research Data and Research Model

Description Of Data

To conduct our empirical study, we used a sample of Chinese companies drawn from the China Stock Market and Accounting Research (CSMAR) database for each year between 2011 and 2021. Merged or acquired businesses were not included in this sample, and we only included those that had been in operation for at least five years, between 2011 and 2021. We eliminated outliers by excluding the bottom and top one percent of the firms from our sample. A total of 6,624 observations were made. However, after missing value adjustments, we were left with a sample of 671 firms.

Research Model

We developed the following research model based earlier works of (Elsayed, 2015; Lucía Barcos, Barroso, Surroca, and Tribó, 2013) and keeping in view the nature of the data.

$$\begin{aligned} Inv\ to\ CGS_{it+1} = & \beta_0 + \beta_1 CSR_{it} + \beta_2 CSR_{it}^2 + \beta_3 FirmSize_{it} + \\ & \beta_4 GrossProfitMargin_{it} + \beta_5 LeadTime_{it} + \beta_6 Growth\ in\ Sales_{it} + \\ & \beta_7 D/E\ Ratio_{it} + \beta_8 Sigma_{it} + \\ & \sum_{S=1}^9 \beta_{8+s} Dummy_{Sit} + \sum_{T=1}^{10} \beta_{17+T} Dummy_{Tit} + \eta_i + \epsilon_{it} \end{aligned} \quad (1)$$

In the model, the time specification is denoted by subscript (t), and subscript (i) denotes the company-specific information regarding the variables. The Dummy Sit - (1-digit SIC code) denotes the temporal dummy variables used for further validation of the model, and aids in the statistical analysis, as it will enable us to

analyze the subgroups of the sample companies included in the analysis. Because the specification contains quadratic terms on CSR to test Hypothesis 4, we use linear regression (log transformation) instead of a multiplicative one. By substituting Customer CSR, Employee CSR, and Environmental CSR for total CSR in this study, we arrive at our estimating equations to test Hypotheses 1, 2, and 3.

We acknowledge that the erroneous term I may be linked to shifts in a company's commitment to social responsibility (the first endogeneity problem). For instance, the degree of managerial risk aversion influences not only the kind of investment policy that will affect inventory levels but also the definition of a company's socially responsible policy. As a result of the firm-specific error term (η_i), we infer a false-positive relationship between inventory investment and CSR. We approach this issue by using difference-based estimates. The non-firm-specific component of the error term (η_i) is related to the second endogeneity problem: reverse causality. Companies may enhance their stock management after implementing cutting-edge software. Suppose businesses want to successfully introduce a new technology. In this case, they must ensure that their stakeholders are happy before they can count on their employees to learn what they need to know about the new inventory policy.

Consequently, a firm's CSR is related to its stockpiling. We use the GMM model to estimate the results, as described by (Arellano and Bond, 1991). We employed various time lags of putative endogenous variables (CSR) as instruments to avoid endogeneity issues. One of the major issues pertaining to the present research relates to the problem of fixed effects, since we deal with a wide array of firms and variables. This problem can be overcome by using GMM, as it enables us to apply the equation in differences. GMM also tends to increase the overall efficiency of the model as held by (Arellano and Bond, 1991). GMM considers a set of different equations pertaining to each time and creates suitable lag values for endogenous and exogenous variables of the research model.

Research Results

Table 1 displays the descriptive statistics and Spearman's correlations between variables. In the table above, the Spearman correlation coefficient for all variables was found to be significant at a C.I of 95%. According to the data, there is a positive Spearman correlation between customer CSR and the -to-sales ratio (59.99%), but a negative one (-5.59%) between environmental CSR and the -to-sales ratio. Both total CSR and the Employee CSR have insignificant associations with the to-sales ratio. In addition, we calculated (upon request) the impact of Customer CSR, Environmental CSR, and Employee CSR on a company's total CSR value. We consider both the most common case, where an observation's CSR rating falls in the first quartile of the distribution, and the least common case, where the CSR rating falls in the bottom quartile.

Table 1. Spearman correlations for the variables

σ	Debt to Equity (D/E) ratio	Growth in Sales	Lead Time	Gross Profit Margin	Firm Size	CSR Environment	CSR Employee	Customer CSR	CSR	Inv to CGS	Mean
4868014	60.098	0.601	121.165	0.169	17828.17	6.01	4.083	4.009	10.99	0.421	Mean
31900000	75.038	38.306	1300.78	8.113	84681.14	0.696	0.898	0.599	3.001	1.904	DS
0.105	0	-0.818	0.399	0	0.50	1	1	1	1	0	Min
95100000	3053.01	3701.1	1729.92	1	1993320	10	9	7	30	171.169	Max
-0.039	-0.29	-0.029	0.26	0.490	0.056	-0.059	0.028	0.059	-0.029	1	Inv to CGS
0.170	0	0.085	-0.019	0.201	0.216	0.501	0.501	0.36	1		CSR
0.050	-0.59	-0.039	-0.160	0.087	0.010	0.155	0.199	1			CSR Customer
0.119	-0.045	-0.039	-0.020	0.081	0.069	0.049	1				CSR Employee
-0.138	0.090	0.040	-0.140	-0.069	-0.202	1					CSR Environment
0.952	0.077	-0.050	0.513	0.177	1						Firm Size
0.1	-0.320	0.120	0.40	1							Gross Profit
0.416	0.02	0.069	1								Lead Time
-0.089	-0.198	1									Growth in Sales
-0.01	1										Debt to Equity

Source: Own elaboration

Our research shows that customers are the most important stakeholders at the beginning of the CSR distribution (38.6%) to the least important at the end of the CSR distribution (17.2%) as CSR progresses. The contribution of nature rose dramatically, from 25.7% to roughly 40% of the total, whereas the contribution of humans rose slightly, but not significantly. These findings are consistent with the theory that when CSR values increase, customer interests become less crucial than those of other stakeholders, especially environmental groups. In the next section, we explain how this finding is related to the fact that CSR and the sales ratio follow an inverted U-shaped relationship.

Table 2. Mean Comparisons

	Observation where CSR is less than mean	Observation where CSR greater mean	Total of means ($\rho > t $)
Weight of Customers	42.10%	38.72%	16.42(0.000)
Weight of Employees	25.30%	28.00%	-19.89(0.000)
Weight of Environment	36.60%	35.90%	5.49(0.100)

Within the parentheses, the likelihood that there are no significant variations between the values depends on whether CSR is more than or less than the distribution's mean value.

Table 3 depicts the results of the research model without accounting for the quadratic term; each column indicates the scores of the main variables, that is, the scores of CSR customers are depicted in (column 2), those of CSR employees are presented in (column 3), and that of CSR environment is shown in (column 4). We conducted further research, which has not been revealed, in which we differentiate between inventories of completed and non-finished goods. We discovered that environmental sensitivity primarily results in a reduction in inventories of non-finished goods, whereas customer interests primarily affect (positively) the inventories of finished goods.

Table 3. Results of the research model

VARIABLES	Inv to CGS (t+1)	Inv to CGS (t+1)	Inv to CGS (t+1)	Inv to CGS (t+1)
CSR	-0.039 -0.627			
Customer CSR		0.179*** -4.495	0.177*** -4.929	0.200*** -3.368
Employee CSR			0.016 -0.799	0.043 -1.42
				-0.050**

Environment CSR				(-1.794)
(exp-6) firm Size	3.144*** -9.98	3.890*** -10.79	3.910*** -10.93	3.511*** -6.126
G.P. Margin	0.001* -1.683	0.001** -1.907	0.001* -1.634	0.001** -1.912
(exp -7) Lead time	-1.91 (-0.601)	0.173 -0.040	-0.414 (-0.095)	1.51 -0.212
(exp -5) Growth in Sales	-0.603 (-0.411)	-0.913 (-0.602)	-1.20 (-0.715)	-0.601 (-0.079)
D/E	0.001 -1.015	0.002*** -5.131	0.002*** -4.501	0.002*** -4.201
(exp-10) σ	-3.60 (-1.456)	-0.71 (-0.197)	-1.29 (-0.399)	-4.21 (-1.137)
Intercept	-0.04 (-0.1001)	-0.893 (-3.223)	-1.003*** (-3.544)	-0.596*** (-2.746)
Observations	6624	6624	6624	6624
F- test	640.94 (0.000)	392.92 (0.000)	435.12 (0.000)	599.84 (0.000)
AR (2) test	1.36 (0.188)	1.40 (0.190)	1.40 (0.193)	1.29 (0.189)
Hansen test	75.84 (0.151)	65.01 (0.681)	64.59 (0.412)	52.93 (0.781)

It is clear from the first column of Table 3 that the CSR and CGS to sales ratio of a company are not directly proportional to one another. When we dissect a company's commitment to social responsibility by analyzing its policies toward various stakeholders, we arrive at the following conclusions (refer to Column 4). First, businesses that prioritize customer satisfaction are more likely to build greater levels of inventories than their rivals, as indicated by the positive coefficient of Customer CSR (0.200 with $t=3.368$).

Specifically, an increase of 37.31% in the inventory-to-sales ratio from the mean value of this ratio is indicated by a standard deviation of 0.629 in customer CSR. This outcome is consistent with the first hypothesis. Second, there is no evidence that employee happiness directly influences a company's policies (the coefficient of 0.033 with $t=1.320$ is insignificant). The results of the analysis indicate that Hypothesis 2 is not valid, as the results indicate a nonlinear relationship. Finally, businesses that are more sensitive to environmental issues have a lower cost-to-sales ratio (the coefficient for this relationship is -0.050, and the value for t is -1.794). In statistical terms, a variation of one standard deviation in environmental CSR (0.969) results in a positive change amounting to 12.82% in the inventory-to-sales ratio, that

is, relative to its mean value. This led us to reject our third hypothesis, The results of testing Hypothesis 4 regarding the nonlinear impacts of socially responsible behavior on an organization's investment are presented in Table 4. The general model of specification (1) is contrasted in column 1, customer satisfaction is substituted in column 2, employee satisfaction is the focus in column 3, and the results for the environment are shown in column 4 (Lucía Barcos et al., 2013).

Table 4. Nonlinear impacts of socially responsible behavior
on organization's investment

	1	2	3	4
	Inv to CGS (t+1)	Inv to CGS (t+1)	Inv to CGS (t+1)	Inv to CGS (t+1)
CSR	0.213*** -4.413			
CSR2	-0.006*** (-3.912)			
CSR CUSTOMER		0.196** -2.132		
CSR 2CUSTOMER		0.2420** (2.00)		
CSR EMPLOYEE			0.619*** (3.252)	
CSR2EMPLOYEE			-0.057*** (3.098)	
CSR ENVIRONMENT				0.100** (-1.991)
CSR 2ENVIRONMENT				-0.0209** (-2.020)
FIRM SIZE (EXP- 6)	3.209*** -7.990	2.161*** -4.980	2.482*** -6.151	2.199*** -5.42
G.P. MARGIN	0.001** -1.912	0.001** -1.801	0.001** -1.891	0.001* -2.799
LEAD TIME (EXP -7)	2.51 -0.720	4.01 -0.60	4.01 -1.050	1.20 -0.781
GROWTH IN SALES (EXP -5)	0.50 -0.191	1.41 -0.031	0.981 -0.501	-2.20 -0.410
D/E	0.001** -2.110	0.001 -0.620	0.001* -1.761	0 -0.800
SIGMA (EXP-10)	0 -0.110	-5.3 (-1.401)	-3.7 (-0.881)	-5.63 (-1.201)
INTERCEPT	-0.981*** (-2.901)	-1.721** (-2.401)	-1.991*** (-3.102)	-1.462 (-1.295)
OBSERVATIONS	6624	6624	6624	6624
F- TEST	596.55 0	184.63 0	424.49 0	110.07 0
AR (2) TEST	1.30 -0.197	1.29 -0.321	1.24 -0.190	1.50 -0.19
HANSEN TEST	66.44 -0.516	35.32 -0.999	41.94 -0.927	49.01 -0.921

The correlation between CSR and the ratio of total sales did not follow a linear pattern, as shown in Table 4. In particular, the linear coefficient is positive at 0.213 ($t = 4.143$), whereas the quadratic coefficient is negative at 0.006 ($t = -3.912$), as indicated in column 1. According to these findings, the correlation between CSR and the sales ratio takes the form of an inverted U and reaches its peak when CSR equals

12.55. This value corresponds to a CSR marginally higher than the median of the distribution, which has a value of 12, thus representing optimal CSR. The existence of this result validates Hypothesis 4.

Customers have a positive, convex relationship (both coefficients for the linear and the quadratic terms are positive), while employees have a negative, inverse U-shaped correlation (the maximum is reached at the value of employee CSR = 5.47), and the environment has a positive, concave relationship ; thus, we may deduce the importance of dissecting corporate social responsibility (CSR) into its parts regarding the many stakeholders in order to investigate its influence on a company's policy. In addition, based on the results presented in Table 2, we have two hypotheses regarding the origin of the nonlinear effect of CSR on sales ratio. First, customer CSR has a favorable effect on the sales ratio, whereas staff happiness has an inverted U-shaped effect on organizational policy. Table 2 demonstrates that when the value of CSR increases, staff CSR increases significantly, while customer CSR decreases significantly. This is essential for considering the nature of the research. The results of the present study are in line with those of (Lucía Barcos et al., 2013) who found inverted U-shaped relationship cure between CSR and sales to inventory ration, but there research was conducted in purely in U.S. context. Findings of present research also tend to further reiterate the findings of (Elsayed, 2015) who concluded that there is positive relationship between the inventory management practices and CSR practices of firms.

Conclusion

We found that customer satisfaction positively affects the cost-to-sales ratio. Environmental consciousness harms the ratio, and employee satisfaction has an inverted U-shaped association with this ratio. It was also found that customer satisfaction positively correlates with inventory levels. Our research has shown that increased levels of social responsibility led to decreased levels of customer corporate social responsibility and increased levels of CSR, which explains the non-linear relationship between a company's total CSR and the to-sales ratio. According to the collected data, the ratio of profits to sales tends to increase when a company's CSR rating is much higher (or lower) than the mean of the CSR distribution.

According to our findings, a unique naturally occurring stabilizing mechanism may exist that can help reduce economic swings. Our research shows that when economic conditions are favorable, many companies boost their spending on corporate social responsibility. Leading smaller stockpiles and increasing production. By contrast, corporate social responsibility (CSR) decreases during economic downturns and, in turn, increases investment by CSR-intensive businesses, reducing the severity of any output drop that businesses might otherwise incur. The results of this research should be considered by executives and policymakers alike, as there has been a significant increase in the amount of human and financial resources spent on CSR by Chinese firms in recent years owing to the increased monitoring and stringent regulations by the government. This suggests that socially responsible enterprises have become a

more substantial component of the economy as a whole and that the methods chosen by these businesses may be a key factor in explaining the swings in the economic cycle. In light of the global economic crisis that occurred in 2008, in-depth research on this topic presents a significant challenge for future research.

The major limitation of the research of the present study pertains to fact that sample size of the research was limited mainly due to availability of data pertaining to CSR practices. In addition, the research was carried out specifically in Chinese context and in future the research can extend this to include other regional economies and can also include other sectors of economy as well.

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ANALIZA HISTORYCZNEJ I BIEŻĄCEJ PERSPEKTYWY RELACJI MIĘDZY POLITYKĄ ZAPASÓW A CSR

Streszczenie: W niniejszym badaniu analizujemy, jak zmienia się polityka firmy w zakresie zapasów w związku z przyjęciem polityki CSR w spółkach produkcyjnych notowanych na giełdzie w Szanghaju i Shenzhen. Skoncentrowano się na spółkach produkcyjnych, ponieważ ich profil działania i ogólna polityka ma duży wpływ na poziom zapasów. Analiza koncentruje się na tym, jak polityka dotycząca zapasów wpływa na CSR chińskich firm. Wyjątkowość tematu skłoniła nas do zbadania CSR i zarządzania zapasami z historycznego i aktualnego punktu widzenia. Temat ten obejmuje niewiele badań, zwłaszcza w Chinach. Zgodnie z niniejszym badaniem zwiększona satysfakcja pracowników, konsumentów i środowiska może mieć wpływ na wielkość produkcji. Biorąc pod uwagę wyjątkowość tematu, istnieje bardzo ograniczona liczba badań przeprowadzonych na ten temat, zwłaszcza w kontekście chińskim, co uzasadnia przeprowadzenie badania, biorąc pod uwagę historyczne i obecne perspektywy zarówno CSR, jak i zarządzania zapasami. W niniejszym badaniu poszliśmy o krok dalej, sprawdzając, czy wysiłki na rzecz poprawy satysfakcji pracowników, konsumentów i środowiska naturalnego mają wpływ na wielkość sprzedaży. Okazało się, że zadowolenie klientów pozytywnie wpływa na stosunek kosztów do sprzedaży. Świadomość ekologiczna szkodzi temu wskaźnikowi, a zadowolenie pracowników ma związek z tym wskaźnikiem w kształcie odwróconej litery U. Stwierdzono również, że zadowolenie klientów pozytywnie koreluje z poziomem zapasów. Nasze badania wykazały, że zwiększony poziom odpowiedzialności społecznej doprowadził do zmniejszenia poziomu społecznej odpowiedzialności biznesu klientów i zwiększenia poziomu CSR, co wyjaśnia nieliniowy związek między całkowitą CSR firmy a wskaźnikiem sprzedaży. Zgodnie z zebranymi danymi, stosunek zysków do sprzedaży ma tendencję wzrostową, gdy ocena CSR firmy jest znacznie wyższa (lub niższa) niż średnia rozkładu CSR.

Słowa kluczowe: Zarządzanie zapasami, CSR, Wskaźnik zapasów do sprzedaży, GMM, Sektor produkcyjny