

QATAR UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

IS LABOR AN IMPORTANT ASPECT OF CORPORATE SOCIAL RESPONSIBILITY

FOR TRADE CREDIT: INTERNATIONAL EVIDENCE?

BY

ALI AL-MAQARIH

A Thesis Submitted to  
the College of Business and Economics  
in Partial Fulfillment of the Requirements for the Degree of  
Master of Science in Finance

June 2022

©2022 Ali Al-Maqarih. All Rights Reserved.

## COMMITTEE PAGE

The members of the Committee approve the Thesis of  
Ali Al-Maqarih defended on 12/05/2022.

---

Dr. Hamdi Bennisr  
Thesis/Dissertation Supervisor

---

Name  
Committee Member

---

Name  
Committee Member

---

Name  
Committee Member

---

Name  
Committee Member

Approved:

---

Dr.Adam Mohamed Fadlalla, Dean, College of Business and Economics

## Abstract

AL-MAQARIH, ALI, Masters : June : 2022, Master of Science in Finance

Title: Is labor an Important Aspect of Corporate Social Responsibility for Trade Credit: International Evidence?

Supervisor of Thesis: Dr. Hamdi Bennisr.

Academics and practitioners have given employee treatment a lot of thought. Fair employee treatment mitigates the conflicts between the firm and its employees, hence increasing employees' commitment and loyalty toward the firm. It also reduces the employee turnover ratio and increases hiring efficiency (e.g., Zingales, 2002; Cao and Rees, 2020). Additionally, labor-friendly practices increase innovation (Mao et al., 2019), firm productivity (Darrough et al., 2019), and sales (Fauver et al., 2018). However, employee treatment may result in conservative financial policies to protect the interests of the firm's employees. For instance, Bae et al. (2010) show that fair employee treatment is associated with lower leverage. Ghaly et al. (2015) document a positive relation between cash holdings and employee treatment. Saeed (2021) shows that firms that treat well their employees distribute less dividends. The objective of this thesis is to add to this strand of literature by examining the employee treatment's impact on an important component of the firm's working capital namely trade credit. We argue that firms with fair employee treatment are less likely to extend trade credit. The intuition behind this is that employee treatment, which increases innovation and productivity, fosters the firm's growth. In order to maintain this growth, firms tend to invest less in working capital and more in long-term profitable investments, which leads to fewer trade-credit extensions. We also argue that managers may invest in employee-friendly practices, not in order to ensure the sustainability of the firm but in order to hide their wrongdoings (Landier et al., 2007; Cronqvist et al., 2009; Ben-Nasr and Ghouma, 2018). Therefore, entrenched managers

are less concerned with the advantages of extending trade credit to their customers (e.g., increasing customer loyalty and sales), hence are less likely to give trade credit to their customers. However, prior literature shows that employee-friendly firms enjoy lower financing costs (e.g., Verwijmeren and Derwall, 2010) and are less financially constrained, hence are more able to extend trade credit to their customers. Additionally, firms that treat their employees well enjoy having a good reputation and trust with various stakeholders such as customers. Since trust is a key element of trade credit. Employee-friendly firms are expected to extend trade credit to their customers.

Using a sample of companies from 45 countries over the 2003-2018 period and the workforce score from ESG, we find a positive association between employee treatment and trade receivables. Our findings are robust to utilizing alternative proxies of trade receivables and to the use of the instrumental variable approach to address the endogeneity issues.

Total number of pages: 54

## DEDICATION

*If you have supported me even with a word, this is dedicated to you, and I hope that I have fulfilled your right to see the results of your support for me.*

## **ACKNOWLEDGMENTS**

After praising Allah Almighty, and by beginning with His Noble Name.

I want to thank this educational edifice (Qatar University), which gave me the confidence to be one of its postgraduate students. In addition, I would like to be appreciated to all the staff faculties and administrative employees who supported me and were kind to me while I was working on my thesis.

I also would like to send my gratitude to my supervisor, Dr. Hamdi Bennisr, who guide and helped me to accomplish this aim. To all College of Business and Economics faculties, those who contribute directly or indirectly to reach this point thank you.

Finally, my family, friends, and those people who were supporting me till the end, I really appreciate your encouragement and kindness.

## TABLE OF CONTENTS

DEDICATION .....	v
ACKNOWLEDGMENTS .....	vi
TABLE OF CONTENTS.....	ii
LIST OF TABLES .....	iv
<b>1. Introduction</b> .....	<b>1</b>
2. Literature Review.....	6
2.1 Employee treatment.....	6
2.1.1 Employee Treatment and Firm Value .....	10
2.1.2 Employee treatment and financial policy .....	12
2.1.3 Employee treatment and innovation .....	13
2.1.4 Other studies on employee treatment .....	16
2.2 Trade Credit.....	17
2.3 Hypothesis.....	25
Research Designs .....	27
3.1 Variables.....	27
3.1.1 Trade Credit .....	27
3.1.2 Workforce score .....	27
3.2 Controls .....	27
4. Empirical design .....	29
4.1 Sample.....	29

4.2 Model .....	29
5. Results.....	31
5.1 Univariate Results .....	31
5.2 Multivariate results.....	31
Tables.....	37
References.....	45
Appendix A.....	53
Appendix B .....	54

## LIST OF TABLES

Table 1: Sample distribution by country.....	37
Table 2: Descriptive statistics .....	39
Table 3: Correlation .....	40
Table 4: Main results .....	41
Table 5: Alternative trade credit proxies .....	42
Table 6: Instrumental variable approach.....	43
Table 7: Sub-sample analyses .....	44

## 1. Introduction

The stakeholder theory suggests that not only the relation of the firms with its shareholders matters. Indeed, it argues that the firm's relation with other stakeholders such as employees, customers, and suppliers also matters. Special attention by academicians and Practitioners has been dedicated to employee treatment. Indeed, employee treatment is the key element of the firm's performance (e.g., Edmans, 2011; Fauver et al., 2018) and innovation (Chen et al., 2016; Mao and Weathers, 2019). The intuition behind this is that fair employee treatment increases the employees' commitment toward the firm and loyalty, which increases the firm's productivity (Darrough et al., 2019), increases sales (Fauver et al., 2018), and results in higher firm value. Additionally, friendly employee practices are associated with a tolerance toward failure, which motivates employees to innovate and results in a high number of patents and citations (Chen et al., 2016; Mao and Weathers, 2019; Wei et al., 2020). Furthermore, employee treatment creates a better reputation for the firm, which may help retain high-quality employees and reduce turnover, making hiring more efficient (Cao and Rees, 2020).

Fair employee treatment may also affect the firm's financial decisions. For instance, Bae et al. (2011) show that corporations opt for a lower leverage to fulfill their commitment toward employees. In the same vein, Verwijmeren and Derwall (2010) indicate that improved employee treatment is corroborated with lower leverage and higher debt rating. Cheung et al. (2019) display that protecting employee welfare results in lower credit spread yields. Francis et al. (2019) show that fair employee treatment is associated with the lower cost of bank loans and less use of trade credit. Ghaly and Dang (2015) show that employee-friendly firms hold more cash to protect the interests of their employees, especially in strongly competitive and labor-intensive industries.

Saeed (2021) finds support for the conjecture that the managers of employee-friendly firms focus on sustainability and long-term growth, hence re-investing profits instead of paying them to shareholders in the form of dividends.

However, excess employee treatment may hurt the company. Indeed, managers may invest in employee-friendly practices not to ensure the firm's sustainability, but to hide their wrongdoings. For instance, Landier et al. (2007) report evidence suggesting that managers may use employee treatment to hide private benefits extraction. Additionally, managers may hide their under-investment in risky and profitable long-term projects by giving some extra benefits to employees. Furthermore, employee treatment may be used by managers as a tool to avoid hostile takeovers (Cronqvist et al., 2009). Consistent with this view, Ben-Nasr and Ghouma (2018) show that excess employee treatment which facilitates the hiding of negative news and whistleblowing, results in higher crash risk.

Based on our knowledge, there is not a study that examined the influence of employee treatment on the utilization of trade credit in a global setting. The objective of this thesis is to add to this strand of literature by analyzing the employee treatment's impact on an important component of the firm's working capital, namely trade credit. This research question is extremely important. Indeed, trade credit may foster the firm's relation with suppliers, which may increase sales and profitability. We agree that fair employee treatment may increase trade receivables in two ways. First, employee treatment that better aligns the interests of employees and managers is associated with a better firm reputation, which translates into lower bankruptcy risk (Verwijmeren and Derwall, 2010) and lower financing costs (e.g., Cheung et al., 2019; Francis et al., 2019). Being less financially constrained, firms with employee-friendly practices mostly expand trade credit to their clients. Second, fair employee treatment enhances

trustworthiness between the firm and its customers, a key factor of trade credit extension (Wu et al., 2014). Therefore, employee treatment may lead to high trade credit extension. However, excess employee treatment may be a manifestation of agency issues. Indeed employee treatment may be used by entrenched managers may be used to hide private benefits extraction and unprofitable projects (Landier et al., 2007) and to protect themselves from hostile takeovers (Cronqvist et al., 2009). Therefore, entrenched managers may be less concerned with trade credit with the advantages of extending trade credit to their customers, hence are likely to provide trade credit to their consumers. Additionally, employee-friendly practices result in more innovation and productivity, enhancing growth. To sustain their growth, employee-friendly firms need cash to reinvest in profitable projects, hence are likely to extend trade credit to their customers.

To test the above-mentioned point of view, we utilize a huge sample of companies from 45 countries over the 2003-2018 period and the workforce score from ESG, and the ratio of trade receivables over sales as the main proxy for trade credit. We find a positive association between employee treatment and trade receivables. One standard deviation rises in employee treatment is affiliated with a 3.98% increase in trade receivables over sales. We interpret our findings as implying that employee-friendly firms, which enjoy lower financing costs are more able to extend credit to their consumers. We also analyze our finding as implying that employee-friendly firms have good reputations and trust and are more likely to give their clients trade credit. The reason behind this is that trust is a key determinant of trade credit. Our outcomes are robust to utilizing alternative proxies of trade receivables: trade receivable over assets, net trade credit overselling, and the number of days in accounts receivable as alternative proxies of trade credit. We also check whether employee treatment affects trade

payables. We also find that employee-friendly practices help to secure more trade credit from their providers. This finding also supports the view that fair employee treatment is associated with more trust between the firm and its suppliers.

We argue that our findings are possibly affected by endogeneity issues since pretermitted unobservable variables may affect both employee treatment and trade credit, leading to unbiased OLS estimates. Additionally, our results may be affected by reverse causality issues because financially wealthy firms may afford to both invest in employee-friendly practices and trade credit extension. We attempted to address these issues using an instrumental variable approach. Indeed, we used two labor regulation proxies for employee treatment. Our consequences remain powerful to the utilization of this approach.

This research is an important contribution to the expanding corpus of CSR literature in the field of corporate finance. Our empirical results, which focused on trade credit, imply that management choices to spend in CSR activities are advantageous to earning the confidence of stakeholders and allow the business to receive additional funding. These findings were found by concentrating on trade credit. Due to the fact that the economy of the United States is deeply impacted by the ongoing global financial crisis, this research has the practical drawback of producing results that may vary from those obtained from a sample of nations that have been least impacted by the crisis. This study paves the way for future research by opening up new pathways for scholars to address this issue statement within the context of a variety of ethnicities and geographic locations.

The rest of this thesis is organized into the following divisions: section two is reviewing the literature and develops our hypotheses. Section three is discussing our

variables. Section four is present our empirical design. Section five discusses our results. Section six concludes.

## **2. Literature Review**

### **2.1 Employee treatment**

Two key ideas exist concerning why organizations perform employee welfare management study, particularly agency theory and incentive theory. Pursuant to incentive theory, offering workers with improved well-being may inspire them to work hard and provide higher corporate value. In modern management theories, people are viewed as a strategic asset that may add extra weight to the organization, mainly in knowledge-based businesses, such as production and pharmaceutical firms. Pursuant to these ideas, worker well-being is crucial to enhancing worker engagement, which finally increases boosts shareholders' values and performance. Accordance with this view, Levine (1992) and Wadhvani and Wall (1991) demonstrate that high incomes correspond to increased production. Furthermore, Perry-Smith and Blum (2000) show that family-friendly policies within enterprises bring to a larger market share and bigger business earnings. Edmans (2011), for example, examines a weighted-value portfolio of the "100 Best Corporations to Work for in America" to examine the correlation between worker fulfillment and long-term stock returns in the United States. According to the statistics, this portfolio generated an annual four-factor alpha of 2.1 percent above industry benchmarks from 1984 to 2009, outperforming the benchmarks by a factor of two. It is discovered by the author that companies with high employee contentment have greater long-term stock returns. Writer elements these results incompetence of the stock markets to fully account for intangible assets (such as employee welfare) when calculating the value of stock options. Some businesses, influenced by incentive theory, aim to provide welfare for their workers in all areas, in order to keep them content and happy. This is because satisfied workers are more productive than hopeless workers (Oswald et al., 2015). Rising pay (Mas, 2006) may enhance workers' passion for their jobs while also increasing the value of the company. Other businesses benefit from

giving their workers with a more pleasant working environment in order to increase their value creation and productivity (Faleye and Trahan, 2011). Adverse stimuli, like job cuts and salary reductions, depress employee excitement, resulting in lower productivity and a decrease in the value of the company (Ghaly et al., 2015). The notion that employee treatment practices have an impact on a company's success is not a new one. There are two opposing viewpoints on the question of whether treatment of employee-friendly practices provide worth to the organization. The pro-value-maximizing viewpoint contends that companies that treat their people well may and often committed to value-maximizing methods. In previous research, it has showing that employee-friendly dealing policies have a positive influence on the operating and financing success of businesses (e.g., Akerlof, 1982; Chen et al., 2016a, 2016b; Edmans, 2011; Faleye and Trahan, 2011; Fauver et al., 2018; Guo et al., 2016). Employee-friendly treatment maybe a beneficial instrument for employee staffing, retention, and incentives due to the importance orientation that exists between workers and companies in general (Akerlof, 1982; Akerlof et al., 1988; Chow, 1983; Edmans et al., 2020; Salop, 1979; Stigler, 1962; Turban and Greening, 1997; Weiss, 1980; Zingales, 2000). Akerlof et al. (1988) demonstrate, for example, that corporations may decrease expensive the turnover of employee by allocating business sources to employee welfare. According to Zingales (2000), the treatment of employees has a significant impact on the retention of skilled personnel. Recruiting and firing employees shows businesses to labor market friction and results in labor expenses such as job adverts, application screening, and interviewing, dismissal (severance benefits), employee development, and costs related to productivity disruption (e.g., Diamond, 1982; Farmer, 1985; Hamermesh, 1989, 1995; Hamermesh and Pfann, 1996; Oi, 1962; Pissarides, 2011; Yashiv, 2007). Companies cannot adjust their labor without incurring

significant costs (Farmer, 1985; Hamermesh, 1995; Hamermesh and Pfann, 1996), and therefore must maintain a certain level of talent draw to avoid under wiring and maintain a stable level of labor turnover in order to decrease labor investment's deviations from the level acceptable by economic fundamentals (Dixit, 1997). Considering these previous studies, it is likely that employee-friendly treatment will facilitate easier recruitment through increased talent attractiveness in the stable labor turnover and labor market through increased employee retention, thereby reducing risk of labor market friction and the associated costs of adjustment. Because of this, improved the treatment of employee may result in a labor investment's level that is near to the optimum levels of labor investment that are supported by economic fundamentals, resulting in increased labor investment efficiency, as opposed to the alternative.

In contrast to the agency theory, the incentive theory holds that greater employee well-being's level may be detrimental to the interests of the organization as a whole. The improvement of working conditions might be seen as a ruse by management to conceal wrongdoing inside the company (Hemingway and Maclagan, 2004; Friedman, 2007; Petrovits, 2006; Prior et al., 2008). This could result in negative information building up until a particular tipping point, at which time it is revealed to the public and, as a result, stock prices plummet, causing significant harm to the company's worth. As a result, corporate leaders may seek to increase employee wellbeing in order to advance their own personal status while also concealing managerial flaws. Employee welfare programs that are too generous might also be used by management to discourage workers from acting as prospective whistleblowers (Dyck et al., 2010). It is logical to assume that workers who get great benefits would be less likely to come out if fraud or misconduct were to occur in their companies. Rather,

workers who experience inadequate welfare and unsatisfactory working circumstances are more likely to report frauds and managerial wrongdoing than those who do not (Rothschild and Miethe, 1999; Bowen et al., 2010; Miceli and Near, 1994). Employees' feeling of ownership and duty continues to increase in importance to the company. When they discover that managers are engaging in fraudulent and improper management activity, they are more likely to bring the latter's wrongdoing to light (Rothschild and Miethe, 1999). Because of this, some administrators want to provide their staff higher benefits. Managers' personal prestige and status may be enhanced by improving ties with their staff and developing a favorable image (Prior et al., 2008). Employee wellbeing may be used by managers to deflect attention from their own carelessness, lessening the probability that workers would report it (Hemingway and Maclagan, 2004). (Ben-Nasr and Ghouma, 2018). Employee treatment may be motivated by ulterior motivations owing to a mismatch of management and shareholder incentives under the agency perspective, which is based on the firm's agency theory (Jensen and Meckling, 1976). (Pagano and Volpin, 2005). Employees who work for long-tenured managers might expect to be paid more to take advantage of private advantages, which supports the agency theory (e.g., lower effort wage bargaining). Geographic dispersion is linked to employee treatment, as shown by Landier et al. (2009). You'll also discover lower layoff rates and a lower correlation between layoffs and divisional success in the departments that are located closer to the corporate headquarters.

Employee-friendly treatment, on the other hand, may increase agency difficulties due to the mismatch of management and shareholder incentives, according to agency theory (Jensen and Meckling, 1976). A number of prior studies have found that the treatment of employees can be an expression of agency problems (Atanassov

and Kim, 2009; Ben-Nasr and Ghouma, 2018; Cronqvist et al., 2009; Jensen and Meckling, 1976; Landier et al., 2007; Pagano and Volpin, 2005) and identify main imperfection that can result in either overinvestment or underinvestment (e.g., Biddle et al., 2009; Jensen, 1986; Jensen and Meckling, 1976; Lambert et al., 2007; Stiglitz and Weiss, 1981).

### **2.1.1 Employee Treatment and Firm Value**

A study conducted by Edmans (2011) investigates the link between long-term stock returns and employee happiness. Value-weighted investments in the "100 Best Companies to Work For in America" generated yearly four-factor alphas of 3.5 percent and 2.1 percent above industry benchmarks from 1984 to 2009. Outliers, alternative weighting methods, and company characteristics all have little effect on their findings. They also that the best companies in terms of employee treatment had more favorable announcement returns and surprises than less performing peers. These findings support the human capital theories of the corporation, suggesting that employee happiness is positively related to shareholder profits and does not necessarily imply slack in management.

Fauver et al. (2018) examine the importance of developing an employee-friendly (EF) culture for the company's value. Several companies have begun to provide staff with extra benefits to foster a more positive work environment. The researchers investigate whether or not this kind of conduct is beneficial to shareholders. They argue that increasing employee enthusiasm and encouraging them to work more efficiently increase firm sales and result in a higher firm value. Consistent with this reasoning, they show that an EF culture increases value. This result is robust to using an instrumental variable approach and a difference-in-difference approach. Chang & Jo (2019) examine whether employee-friendly policies impact product market

competitiveness and whether it affects the relationship between treatment of employee and corporation value. They show that employee treatment is positively associated with product market competition; consistent with the view that firms in competitive industries are more innovative and need skilled labor. They also found that when product market rivalry is strong, firm value is positively related to employee treatment, suggesting that employee treatment is more important for firms operating in competitive industries since it is necessary to improve the firm's degree of innovativeness and enhance the firm's competitive position. They find that their results are robust to controlling for corporate governance. They also found that companies in more competitive sectors are more likely to be listed in Fortune's "100 lists of best-performing companies".

Previous research has shown that a lower cost of debt and equity financing is associated with greater levels of corporate social responsibility (CSR) performance. Xu et al. (2020) analyzed the relationship between all components of CSR and trade credit using a sample of 16,463 U.S. firm-year observations that represent more than 2455 unique enterprises throughout the period of 1996–2016. They give data that is compelling and suggesting that higher overall CSR ratings are associated with greater levels of trade credit. A further in-depth investigation finds that there are favorable connections between trade credit and the four separate components of CSR (i.e., the environment, community, employee relations, and diversity). When considered as a whole, their findings shed light on the significant impact that CSR plays in enhancing the suppliers' readiness to grant trade credit. Their research also has an important implication for supply chain management. This implication highlights the role of corporate social responsibility (CSR) in the design of contracts between suppliers and buyers as well as the level of trade credit available to buyer firms

that have made CSR investments (Xu et al., 2020).

### **2.1.2 Employee treatment and financial policy**

By looking at a firm's relationship with its workers, Bae et al. (2011) demonstrate that its reputation for delivering fair employment treatment matters when making capital structure decisions. He argues that firms with fair employee treatment tend to use less debt to protect the interests of their employees. Consistent with this view, they show that employee-friendly firms are associated with lower debt levels. This result is robust to the use of Fortune magazine list of the "100 Best Companies to Work For" as an alternative proxy for employee treatment and a battery of robustness tests, including tests to address the endogeneity issues. The negative relation between employee treatment and firm leverage is more pronounced in firms with a high bankruptcy risk.

Verwijmeren and Derwall (2010) investigate the connection between the well-being of employees and the leverage of companies. They find that employers with excellent employee relations have lower leverage and higher credit ratings than their competitors. As a result, their findings support the hypothesis that companies consider the well-being of employees when making decisions on leverage. The intuition behind this is that if the company does not set a debt level that maximizes the employee's utility will be able less able to recruit employees in the future.

Cheung et al. (2019) examine the impact of employee behavior on bondholders' welfare. They are using employee treatment data from ESG. Improved employee treatment decreases yield spreads by lowering cash-flow risks and increasing production efficiency by minimizing expensive employee conflicts, the loss of qualified employees, and the probability of product defects. Indeed, lower employee dissatisfaction enhances overall factor productivity, fewer days off owing to labor

disputes, fewer mass product recalls, reduced turnover, and employee-related difficulties (Cheung et al., 2019). Consistent with this view, they show that companies with fair employee treatment have a lower bond yield spread.

The study conducted by Ghaly and Dang (2015) looks at the link between company cash holdings and employee well-being. As assessed by employee relations, firms that are highly dedicated to employee satisfaction keep more cash. Employee welfare requirements have a greater impact on cash holdings in firms operating in more competitive industries and labor-intensive firms. Saeed (2021) investigates how employee-friendly behaviors affect dividend payments in emerging markets. He finds that employee-friendly behaviors are negatively related to dividend payouts using data from 17 emerging nations from 862 businesses and 6,071 firm-year observations. This association appeared to be stronger to government-owned firms. He also looked at 'agency difficulties' and 'future investment' as potential channels via which employee-friendly policies may lead corporations to pay low dividends. He supports the investment channel, suggesting that employee-friendly firms use internal funds to finance investment rather than dividends.

### **2.1.3 Employee treatment and innovation**

Chen et al. (2016) find compelling evidence that companies with employee-friendly workplaces outperform their competitors in terms of innovation. They find that the positive relation between the treatment of employee and innovation is more pronounced in pharmaceutical firms. Furthermore, they show that employee-friendly businesses are more willing to maintain their R&D expenditures despite economic downturn. These results are consistent with the opinion that an employee-friendly environment helps to foster a positive attitude toward failure, which in turn stimulates participation in innovative activities.

The importance of providing workers with fair treatment cannot be overstated for the firms that employ those individuals. Even while managers are aware of how important it is to treat their employees fairly, there is still a lot of data that suggests employees are treated unfairly in firms. Sherf et al. (2019) came up with an original theory to explain why something like this may happen, and by doing so, we shifted the emphasis from the manager to the organizational setting as the primary factor in determining whether or not managers are fair to their workers. The research conducted by Sherf et al. (2019) indicates that taking an all-encompassing perspective of the environment in which managers work, including their workload, other competing responsibilities, and the manner in which they are rewarded, is the best way to explain the discrepancy between the overall importance that is ascribed to just treatment and its implementation in the day-to-day operations of an organization. This is true at least in part, according to their findings. This necessitates a transition in the literature to a study of justice not in isolation, but in connection to, and cooperation with, other significant administrative functions and requirements.

Mao & Weathers (2019) examines the impact of employee treatment on the innovation and whether innovation is a channel through which employee treatment affects firm value. They argue that 'excellent' treatment of employees has a favorable impact on creativity. Additionally, they argue that fair employee treatment tolerates failure, which encourages employees to innovate. Consistent with this view, they show that well-treated workers promote corporate innovation. These findings are resilient to the use of several approaches to address endogeneity issues. Furthermore, they show that the economic value of patents is positively related to employee treatment, suggesting that innovation is a channel through which fair employee treatment leads to higher firm value.

Many studies have examined the impact of internal and external variables on business innovation success. However, no production economics study has examined the influence of employee wellbeing on manufacturing firms' innovation performance. The research conducted by Wei et al. (2020) examines if and how employee wellbeing influences corporate innovation performance using data from Chinese listed manufacturing businesses from 2010 to 2017. They show that manufacturing organizations with greater employee well-being have better innovation performance. This positive association is shown for the degree of innovation quality but not for the number of patent applications. Various robustness tests reveal that these findings are not influenced by alternate metrics of employee well-being or innovation performance (Wei et al., 2020) and endogeneity issues. The channel tests also reveal that improving employee wellbeing increases innovation performance in China's manufacturing businesses by keeping top talent, receiving good media attention, and raising inventor's research and development efficiency.

It is becoming more vital for manufacturers to engage in corporate social responsibility, often known as CSR, in order to fulfil the rising demands of society about ecologically and socially responsible business practices. On the other hand, the majority of the research done on CSR has been conducted with big manufacturers in mind, with comparatively little attention paid to manufacturing businesses of a smaller or medium size (SMMEs). This research conducted by (Shou et al., 2020) examines the link between the CSR performance of Chinese SMMEs and their trade credit, using on the signaling theory as its theoretical foundation. They discover that CSR performance has a link with trade credit that is shaped like a U by using a panel dataset consisting of 1020 Chinese SMMEs between the years of 2010 and 2017. In addition, they find that both financial slack and company size act as negative moderators of this curvilinear

connection. This research contributes new information to the body of CSR literature in production and operations management by illuminating the non-linear connection that exists between CSR performance and trade credit in the context of Chinese small and medium-sized enterprises (SMMEs) (Shou et al., 2020).

#### **2.1.4 Other studies on employee treatment**

Cao and Rees (2020) examine the effect of employee treatment on the efficiency of labor investment. They argue that fair employee treatment is associated with higher commitment of employees toward the firm and loyalty. Fair employee treatment helps the firm retaining high quality workers and reduces employee turnover. Such firms are more able to attract skilled labor, which may facilitate hiring. Consistent with this view, they show that employee-friendly treatment is strongly linked to fewer deviations in human capital expenditures from levels that are consistent with the economy's fundamentals, hence more efficient labor investment. It is more important for companies that have a high level of human capital, experienced workers, and knowledge capital to use employee treatment to improve labor investment efficiency. When employing a difference-in-difference technique with the financial crisis as an external shock, they find that more inefficient labor investments occurred in the post-crisis period than in the pre-crisis era (Cao & Rees, 2020). Additionally, the findings are resistant to placebo testing and to the use of Heckman's approach to address the selection bias problem and the propensity score matching to mitigate the endogeneity issues as well as alternative proxies for both labor investment and employee treatment.

An examination of the relationship between the well-being of employees and future stock market risk was conducted by Ben-Nasr and Ghouma (2018). Builds on stakeholder hypothesis, a significant dedication to employee well-being strengthens the firm's market reputation, avoids expensive strikes, increases shareholder participation,

and increases employee productivity. However, based on the agency theory the treatment of employee may be an expression of agency problems. In such as case, managers may utilize lucrative employee welfare schemes to decrease the possibility of workers blowing the whistle on management wrongdoings, which may lead stock prices to crash are likely to increase crash risk. They found strong evidence for the agency theory hypothesis, suggesting that high employee welfare requirements increase stock market collapse risk. They also provide evidence that earnings management and whistleblowing are channels through which employee well-being seem affects stock price crash risk. Additionally, they show that the positive relation between employee treatment and crash risk is more pronounced in labor-intensive businesses, controlled labor markets, and less competitive product marketplaces. Furthermore, they show that this association is stronger in companies with inadequate governance and nations with weak investor protection and transparency rules.

## **2.2 Trade Credit**

El Ghouli & Zheng (2016) used cultural characteristics to examine the relationship between national culture and trade credit provision, and they found some interesting results. Trade credit is more likely to be extended in nations with a greater degree of collectivism, uncertainty aversion, power distance, and masculinity, according to a study of 261,384 firm-year data spanning the 1993–2013 period from 49 countries (El Ghouli & Zheng, 2016). Alternative measures of trade credit and culture, as well as the choice of estimate concerns and technique about indigeneity, had no effect on these findings.

Their projections, based on a variety of trade credit theories, confirmed by the data. Suppliers in collectivist nations are more prepared to issue trade credit than their counterparts in individualist countries because they may depend on collective

retaliation against opportunistic consumers since they share knowledge about client creditworthiness. Suppliers in high-power-distance nations, where the gap between affluent and poor consumers is wide, have an incentive to price discriminate by using trade credit. Trade credit implicit guarantees are more common in nations with a high level of uncertainty avoidance because buyers are more worried about the quality of their purchases in these countries. Trade credit, on the other hand, may serve as a more effective deterrent in nations where borrowers are more inclined to engage in opportunistic conduct (El Ghouli & Zheng, 2016).

Suppliers are more willing to extend credit to firms with a high level of social trust, according to Wu et al. (2014), while consumers are more likely to extend credit to businesses. A high level of social trust means that businesses are more likely to make timely payments and collect outstanding debts. Trade credit is more likely to be used and extended when there is a high degree of social trust. Furthermore, they also looked at the impact on trade credit of the connection between social trust and the strength of a legal entity. They demonstrated that social trust has a greater impact on trade credit for enterprises in places where property rights are less valued. A well-developed legal system may not be necessary to encourage the use and provision of trade credit, as this study reveals. The more restricted a company's access to formal funding, the greater its need on social trust to get trade credit, and the more social trust-reliant a company is when extending trade credit. Firms with fewer access to formal bank loans may benefit from trade credit because of social trust, according to these findings (Wu et al., 2014). As a result, societal trust may at least somewhat alleviate bank lending procedures' inherent biases.

Abdullah et al. (2017) explored empirically that going public has a significant influence on trade credit policies. With data from the S&P Capital IQ database covering

the years 1995–2012, they uncover convincing evidence that public enterprises are less reliant on trade credit because they have better access to less expensive and less risky external sources of funding. Indigeneity issues and sample selection are alleviated in part because to many robustness tests and identification procedures that support this conclusion. Their research also shows a greater negative effect on trade credit when a company is less financially limited and has less danger of bankruptcy. They now have further evidence that the financial restriction and distress risk processes are at the root of our major conclusion (Abdullah et al., 2017).

Firms' dynamic modification and optimum levels of trade credits to those levels are also examined in this study. Both public and private companies actively change their target trade credit levels. This is consistent with the concept that public enterprises suffer lower adjustment costs because they have stronger negotiating power with suppliers and better access to various types of funding. However, public firms are able to move quicker (Abdullah et al., 2017).

According to Gonçalves et al. (2018), a crisis may have a major influence on trade credit decisions, which is consistent with past findings. Trade credit decisions are heavily influenced by product market power, a finding that previous research in the industry had missed. In comparison to pre-crisis market power increases of one standard deviation, net trade credit grew by about four days during the crisis. In their sample, this 10% of the median business payable days accounts for statistical significance and economic importance. They put their findings through a slew of tests, and they hold up across the board. Their findings are unaffected by factors such as limited resources and liquidity. To ensure that their findings are solid, they also take into account additional indicators of foreign finance, as well as several measures of market power, non-structural and structural (Gonçalves et al., 2018). Last but not least, they tested for any

impacts on the financial crisis using a placebo.

Companies with a lot of market power might reduce the average number of days to pay their suppliers in order to give them with more liquidity. Using this strategy, companies may ensure their suppliers' inputs and maintain monopoly rents while also taking advantage of early payment reductions. When a crisis hits, these companies may raise sales by lowering their margins, which gives them an advantage over smaller competitors. Furthermore, suppliers of high-market-power companies may have difficulty securing bank loans backed by their receivables, therefore to get liquidity from their clients, they may boost the early payment discount (Gonçalves et al., 2018).

To find out how suppliers' hometown ties to CEOs affect trade credit, Kong et al. (2020) looked at a sample of Chinese listed businesses. Business leaders' local connections have been shown to be an asset in securing trade financing. Enterprises with weak financial systems, firms that are not controlled by the government, and those who's CEOs are members of the local chamber of commerce are more likely to experience the hometown impact. Firms with a strong merchant guild culture are also more likely to experience the home-town effect. Companies with more information opacity and a lower level of social trust benefit more from the personal connections of their CEOs (Kong et al., 2020).

This association between CEOs' hometown relationships with trade credit and suppliers and is also consistent with a variety of strategies to address indigeneity, including 2SLS with instrumental variables, fixed effects at multiple dimensions, and DID models that include CEO crisis or turnover. In addition, the findings remain true when they substitute important omit enterprises that hire local CEOs, variables with other metrics, and use data from suppliers (Kong et al., 2020).

The goal of the research conducted by Shang (2020) is to learn more about how

enterprises decide whether or not to provide and/or utilize trade credit, and how financial market accessibility influences those choices. Trade credit policies are examined in this study in addition to the previous research, which focuses largely on the relationship between credit market and trade credit access. Equity financing is more enticing and accessible to companies with a greater degree of stock liquidity since stock liquidity decreases the needed returns on equity issuance and equity investments expenses. Stock liquidity, in his opinion, increases the availability of equity capital and hence gives them greater financial flexibility and thus may enable them to issue more credit to their customers and depend less on trade credit financing from their suppliers. This theory is supported by the study's empirical findings (Shang, 2020).

He has found solid evidence that companies with greater stock liquidity give more credit and utilize less trade credit. There is a wide range of control variables, liquidity, other measures of stock, distinct fixed effects and a difference-in-difference technique and an instrumental variable approach that may be used to replicate this conclusion. It has been shown that enterprises with less liquidity in their stock market tend to have stricter trade credit practices than those that are more financially secure, rely more heavily on external funding, and are more restrained by short-term borrowing restrictions (Shang, 2020).

The research conducted by Jory et al. (2020) examines the link between government trade credit and economic policy uncertainty, and its impact on business value, using an index established by Baker et al. (2016). During times of high EPU, enterprises' receivable days are clearly reduced. During these times of uncertainty, they have seen a decline in the number of days suppliers are willing to pay their invoices. To make matters worse, EPU's influence on trade credit is constant and largely

unrelated to the services and goods offered by enterprises, the degree of their financial restrictions, and the nature of their customer relationships, their market strength, or the significance of their government business. Because of its systemic structure, economic policy uncertainty tends to have a severe influence on all enterprises throughout the supply chain (Jory et al., 2020).

The value of a company rises when credit restrictions are tightened, as we discover. But we argue that doing so beyond a certain degree during times of increased EPU diminishes the utility of doing so in the literature. According to their findings, a trade credit policy that is unduly cautious is likely to push consumers to rivals when EPU is high. Their research has substantial implications for both business managers and regulators when it comes to the risk and liquidity of their firms. Last but not least, we admit that although their results may be significant for US-based public companies, they may not necessarily apply to private companies or foreign-based corporations (Jory et al., 2020).

Uncertainty regarding monetary, tax, fiscal, and regulatory policies has a stronger effect on short-term lending and borrowing compared to other categories, according to the findings conducted by D'Mello & Toscano, (2020). Due to differences in firm-specific market power, industry competitiveness affects the relationship between policy uncertainty and trade credit, as well. Firms having greater market power, on average, lend less money to clients than their competitors. The influence on trade credit policy by policy-related uncertainty diminishes as the market strength of enterprises grows (D'Mello & Toscano, 2020).

Last but not least, they investigated how trade credit is influenced by policy uncertainty. Economic policy uncertainty affects enterprises' short-term financing strategies in major ways via limitations, financial hardship, and relation-specific

investments, as they have shown in their research. An essential short-term source of finance for most businesses is being adversely affected by widespread economic uncertainty, as seen by the negative correlation between trade credit and policy uncertainty (D'Mello & Toscano, 2020).

Companies that are socially responsible obtain more capital, as has been extensively established in the corporate finance literature. The study conducted by Saeed & Zureigat (2020) investigates the link between trade credit and CSR. They discovered that CSR has a significant positive relationship with the supplier sides and buyers of trade credit by using data from the US manufacturing industry. The manufacturing industry trade suffered tremendously during the 2008–2009 financial crisis. In addition, they expect and discover evidence that CSR is negatively related to trade credit during a crisis. These findings are robust to the use of an alternative sample and the use of alternative CSR and trade credit proxies. Furthermore, they used the instrumental variable approach to address the endogeneity issues. Finally, they show that the documented relationship holds for both global and local subsamples.

Cheung and Pok (2019) conducted empirical research on three alternative perspectives on the link between CSR and trade credit provision. The first point of view is the trust point, which contends that CSR, as a trust-enhancing mechanism, makes trade credit provision more sustainable by avoiding the limits of an incomplete trade credit contract. As a result, it develops a favorable relationship between customer and supplier, which improves trade credit. According to the CSR literature, high CSR enterprises have debt with shorter maturities, which creates a larger refinancing risk. As a result, such businesses prefer to hoard capital (Cheung & Pok, 2019).

Cash holdings are positively associated to trade credit according to the precautionary motive hypothesis because businesses utilize cash to hedge against trade

credit risk. According to the substitution hypothesis, these firms hoard cash and provide less trade credit to prospective buyers due to greater refinancing risk (Cheung & Pok, 2019). The replacement approach suggests that CSR is negatively related with trade credit provision.

Cash holdings are positively associated to trade credit according to the precautionary motive hypothesis because businesses utilize cash to hedge against trade credit risk. Due to the heightened refinancing risk, these businesses are more likely to hoard cash and provide less trade credit to prospective buyers. The replacement approach suggests that CSR is negatively related with trade credit provision. The authors ran several robustness tests and obtained consistent findings. Their findings support the replacement and trust views, but not the precautionary purpose perspective (Cheung & Pok, 2019). They were unable to discover compelling evidence of CSR's overall impact on trade credit provision.

According to earlier research done in this area, CSR has a favorable correlation with trade receivables. In spite of this, the examination into the non-linear impact of CSR finds that the link between trade and CSR receivables is in the form of an inverted U. This suggests that at low levels of CSR, it is more likely to be a tool to manage risk and/or develop a trusting connection between suppliers and customers. On the other hand, at high levels of CSR, it is more likely to be susceptible to agency cost. The authors also discover that CSR has a relationship in the form of a U with the provision for poor trade receivables. This finding lends credence to the connection that was shown before between trade receivables and CSR.

These previous researches are important contribution to the expanding corpus of CSR literature in the field of corporate finance. The empirical results of these researches, which focused on trade credit, imply that management choices to spend in

CSR activities are advantageous to earning the confidence of stakeholders and allow the business to receive additional funding. These findings were found by concentrating on trade credit. These studies pave the way for this research by opening up new paths to understand this research and to solve the research questions in the context of a variety of geographical and ethnicities settings.

### **2.3 Hypothesis**

On the one hand, treating employees well will have a good impact on a company's ability to extend trade credit for two main reasons. First, treating employees well reflects well on a company's financial health. The probability of bankruptcy is lower for companies that engage in good employee treatment (Bae et al., 2011), and corporate fraud (Zhang et al., 2020) and financial difficulty are less common (Verwijmeren and Derwall, 2010). Given that, employee-friendly firms, which are less financially constrained are more able to extend trade credit to their customers. Second, employee treatment increases the firm's reputation and trust with various stakeholders such as customers. As outlined by Wu et al. (2014) trust is a key determinant of trade credit extension. Given that, we argue that employee treatment that enhances trust between the firm and its stakeholders is associated with a higher trade credit extension.

H1a: Trade credit is positively related to employee treatment.

On the other hand, employee-friendly policies may, however, be associated with less trade credit extension. It has been suggested that managers proactively cultivate their public image as good corporate citizens through favoritism toward employees (Barnea and Rubin, 2005) or gain private non-monetary benefits from social contacts with employees and other members of the community (Landier, Nair, and Wulf, 2009). Consistent with this view, Ben-Nasr, and Ghouma (2018) show that firms with excess employee treatment are more likely to engage in earnings management and

whistleblowing to hid their misbehavior, which may increase the likelihood of stock price crashes. Therefore, managers who adopt employee-friendly policies to hide their misbehavior are less likely to be concerned with the advantages of extending trade credit to their customers (e.g., increasing customer loyalty and sales), hence are less likely to give trade credit to their customers. Additionally, employee treatment, which increases innovation and productivity, fosters the firm's growth. In order to maintain this growth, firms tend to invest less in working capital and more in long-term profitable investments, which leads to fewer trade-credit extensions. Based on this discussion, our hypothesis is non-directional and states that:

**H1b: Trade credit is negatively related to employee treatment.**

### **3. Methodology**

#### **Research Designs**

In this section, I had discussed variables construction and sample, the sample descriptive analysis, and main model.

#### **3.1 Variables**

Because we were unable to get information about the overall volume of trade credit, we relied on previous research and made use of accounts receivable and payable to determine the amount of trade credit that was received and extended.

##### **3.1.1 Trade Credit**

We use the ratio of trade receivables over sales as our main proxy for trade credit (*rec\_sales*). We also use trade receivables over assets (*rec\_assets*), the difference between accounts receivables and accounts payables over assets (*net\_rec\_sales*), accounts receivables in days calculated as the ratio of trade receivables over sales times 365 (*ar\_days*) and the ratio of accounts payables over sales (*payables\_sales*).

##### **3.1.2 Workforce score**

We used Refinitiv ESG's workforce score. It assesses the firm's ability in enhancing employees' job satisfaction, promoting health and safety in the workplace and enhancing diversity, equal opportunities and training of its employees. The index ranges from 0 to 100, with a higher score indicating better employee treatment.

#### **3.2 Controls**

We control for firm- and country-level factors associated with trade credit. First, we control size using the logarithm of total sales in US\$ (*ln\_sales*). It is calculated by the formula as follow:

$$\text{Sales Revenue} = \text{Number of units sold} \times \text{Average price per unit}$$

Second, we control profitability using the ratio of net income over sales (ni\_sales). It is calculated by the formula as follow:

$$\text{Net Sales} = \text{Gross Sales} - \text{Returns} - \text{Allowances} - \text{Discounts}$$

Third, we control for cash holding using the ratio cash plus short-term investments over assets (cash\_assets). It is calculated by the formula:

$$\text{Cash Asset Ratio} = (\text{Cash} + \text{Cash Equivalents}) / \text{Current Liabilities}$$

Fourth, we control for tangibility using the ratio of fixed assets over total assets (fa\_assets). It is calculated by the formula:

$$\text{Fixed Assets Turnover Ratio} = \text{Net Revenue} / \text{Aggregate Fixed Assets}$$

Fifth, we control for growth opportunities using sales growth calculated over a one year period (sales\_growth). It is calculated by the formula:

$$\text{Sales Growth Rate} = (\text{Current Period Sales} - \text{Prior Period Sales}) / \text{Prior Period Sales} * 100$$

Sixth, we control for gross margin calculated as the difference between total sales and cost of goods sold over total sales (grossm). It is calculated by the formula:

$$\text{Gross Profit} = \text{Revenue} - \text{Cost of Goods Sold}.$$

Seventh, we control for a macroeconomic factor using the logarithm of GDP per capita (ln\_gdpc). It is calculated by the formula:

$$\text{GDP} = \text{Consumption} + \text{Investment} + \text{Government Spending} + \text{Net Exports}$$

Finally, we control for the credit market development using the ratio of bank credit offered to the private sector over GDP (p\_credit ).

## 4. Empirical design

### 4.1 Sample

Refinitiv's database provides us with information about ESG's employee workforce scores. Worldscope provides us with the financial data we need to calculate our trade credit and firm-level control variables. We did not include companies in the banking or utility sectors in our study. The World Development Indicators provide us with macroeconomic variables (WDI). To limit the impact of outliers, the continuous variables are winsorized at the 1st and 99th percentiles. Our panel data includes 13,208 firm-year observations from 45 countries over the period from 2003 to 2018. Table 1 includes the distribution of our sample by country. As can be seen, USA accounts for the largest number of observations. Indeed, 26.01% of our firm-year observations belong to the US.

### 4.2 Model

We estimate several specifications of the following fixed effects model:

$$\text{rec\_sales}_{i,t} = \theta_0 + \theta_1 \text{wf\_score}_{i,t-1} + \alpha_2 \text{control\_variables}_{t-1} + u_{i,t} \quad (1)$$

where *rec\_sales* is the ratio of trade receivables over sale, *wf\_score* Refinitiv is the ESG's workforce score, *control\_variables* include the logarithm of total sales in US\$ (*ln\_sales*), the ratio of net income over sales (*ni\_sales*), the ratio cash plus short-term investments over assets (*cash\_assets*), the ratio of fixed assets over total assets (*fa\_assets*), sales growth calculated over a one year period (*sales\_growth*), gross margin calculated as the difference between total sales and cost of goods sold over total sales (*grossm*), the logarithm of GDP per capita (*ln\_gdpc*) and the ratio of bank credit offered to the private sector over GDP (*p\_credit*). *u<sub>i,t</sub>* is the error term. We also include

industry, country and year dummies to control for industry, country and year fixed effects. Table 2 reports descriptive statistics of our variables.

## **5. Results**

### **5.1 Univariate Results**

Table 3 reports the results of the correlation table. We report a positive and significant correlation at the 1% level between `rec_sales` and `wf_score`, suggesting that fair employee treatment is associated with more trade credit extension. We also report a positive correlation between `rec_sales` and `cash_assets` and `grossm`, suggesting that firms with high cash holdings and gross margin are more likely to extend credit to their customers. Additionally, we report a negative correlation between `rec_sales` and `ln_sales`, `fa_assets`, `ln_gdpc` and `p_credit`, suggesting that larger firms, firms with large tangible assets and from high-income countries and countries with developed capital markets are less likely to extend trade credit to their customers. Additionally, the correlation coefficients between our explanatory variables are generally low which mitigated the multicollinearity problems. Appendix B reports Variance Inflated Factors for our variables. As can be seen, VIF for all variables is lower than 5 except `lngdpc` and `pcredit`. To address this issue we removed these variables from our basic regression (Model 1 of Table 4). The unreported results for the sake of brevity suggest that our findings are not affected by this issue.

### **5.2 Multivariate results**

Table 4 reports the results of estimating equation (1) using OLS regression while controlling for industry, country and year dummies to control for industry, country and year fixed effects and cluster robust standard errors by firm. As can be seen in Model (1) of Table 4 the coefficient for `wf_score` loads positive and significant at the 1% level, suggesting that employee-friendly firms are more likely to extend trade

credit to their customers. A one standard deviation increase in *wf\_score* is associated with a 3.98% ( $2.007 \times 0.275 / 13.871$ ) increase in *rec\_sales*. This finding is consistent with the view that fair employee treatment translates into lower bankruptcy cost and a lower cost of debt, hence is associated with more financial flexibility. Being less financially constrained, employee-friendly firms are more likely to grant trade credit to their customers. This finding is also consistent with the conjecture that employee treatment increases the firm's reputation and trust with various stakeholders such as customers. Since trust is a key determinant of trade credit extension, employee treatment practices favor trade credit extension. Model (2) reports our results when we use triple clustering of robust standard errors at the country, industry and year level. The results show that *wf\_score* remains positive and significant at the 1% level, corroborating our earlier finding. We also report several significant coefficients for the control variables. The coefficients for *grossm* and *ln\_gdpc* load positive and significant, suggesting that firms with higher gross margin and from high-income countries are more likely to extend trade credit to their customers. We also find that the coefficient for *ln\_sales*, *cash\_assets*, *fa\_assets* and *p\_credit* are negative and significant, suggesting that larger firms, firms with high cash holdings, larger tangible assets and from countries with more developed credit markets are less likely to extend trade credit to their customers.

Table 5 report our results when we use alternative proxies of trade credit. First, we use the ratio of trade receivables over assets (*rec\_assets*) instead of *rec\_sales*. The results reported in Model 1 of Table show that the coefficient for *wf\_score* remains positive and significant at the 1% level, further supporting our earlier findings. Second, we use net trade credit calculated as the difference between accounts receivables and accounts payables over assets (*net\_rec\_sales*) instead of *rec\_sales*. The results reported

in Model 3 of Table 5 show that the coefficient for `wf_score` continues to hold positive and significant at the 1% level. Third, we use the number of days in accounts receivables calculated as the ratio of trade receivables over sales times 365 (`ar_days`) instead of `rec_sales`. Finally, we use the ratio of accounts payables over sales (`payables_sales`) instead of `rec_sales`. The results reported in Model 4 of Table 5 show that the coefficient for `wf_score` loads positive and significant at the 1% level, suggesting that fair employee treatment is associated with more financing from suppliers. This finding also supports the view that employee practices foster trustworthiness between the firm and its stakeholders including suppliers which increase the likelihood of obtaining trade credit from suppliers.

Our results may be affected by omitted unobservable variables that may affect both of trade credit and employee treatment. Additionally, our results may be driven by reverse causality issues since financially healthy firms that are more able to extend their trade credit to their customers also afford to invest in employee-friendly practices. To ensure that our results are not driven by these issues we use an instrumental variable approach. In the first stage, we regress `wf_score` on two labor regulation proxies. First, we use a dummy variable equal to one if the firm is implemented in a country with a hiring regulations and minimum wages score that is higher than the sample median and zero otherwise (`hiring_reg_min_d`). `hiring_reg_min_d` of 1 indicates high minimum wages and strict hiring regulations. Second, we use a dummy variable equal to one if the firm's country has a cost of dismissal mandated by law that is higher than the sample median and zero otherwise (`mandated_cost_d`). Firms in countries with a high mandated dismissal cost are subject to stringent labor laws. Model 1 of Table 6 reports the results of the first stage. As we can see, `hiring_reg_min_d` and `mandated_cost_d` load positive and significant at the 1% level, supporting your prediction. The results of

the second stage are reported in Model 2 of Table 6. As can be seen, the predicted `wf_score` loads positive and significant at the 1% level, suggesting that our findings are not affected by the endogeneity issues.

In Table 7, we report the results separately for emerging and developed countries. The results of Models 1 and 2 show that employee treatment is positive and significant only for the sub-sample of developed countries. We also report the results separately for civil and common law countries. The results of Models 3 and 4 show that employee treatment is positive and significant in both of the sub-sample of civil and common law countries. However, the coefficient is higher for the civil law countries.

## **Conclusion**

Our findings are in line with a variety of CSR explanations and models. The first notion that we put to the test with our first hypothesis is the idea that socially responsible businesses have better access to various forms of funding. In light of the signaling theory, this research looks how labor influence the link between CSR performance and trade credit. U-shaped association between CSR performance and trade credit is larger for smaller business size and lower financial slack, according to our findings. These findings of the study are consistent with the study conducted by Nguyen & Nguyen, (2021). Moreover another research conducted by Xu et al. (2020) is consistent with this research which explained that firms with better CSR ratings have a greater amount of trade credit available to them. In addition, according to the findings of our research into the influence of individual CSR factors on trade credit, the level of trade credit is higher when businesses have higher scores in four CSR factors, namely the diversity factor, employee relations factor, community factor, and environmental factor.

Workers' dedication and loyalty to the company are increased as a result of fair employee treatment. Additionally, employee friendly practices lower employee churn and improves the effectiveness of recruiting new employees. Furthermore, employee treatment creates a better reputation for the firm, which may help retain high-quality employees and reduce turnover, making hiring more efficient (Cao and Rees, 2020). Fair employee treatment may reduce the firm's financing costs (e.g., Verwijmeren and Derwall, 2010; Cheung et al., 2019; Francis et al., 2019), hence increases its ability to extend trade credit to their customers. Consistent with these arguments, we find a positive and highly significant relation between employee treatment and trade credit.

A one standard deviation rises in employee treatment is affiliated with a 3.98% increase in trade receivables over sales. Our results are robust to utilizing alternative proxies of trade receivables: trade receivable over assets, net trade credit overselling, and the number of days in accounts receivable as alternative proxies of trade credit. We also check whether employee treatment affects trade payables. We also find that employee-friendly practices help to secure more trade credit from their providers. This finding also supports the view that fair employee treatment is associated with more trust between the firm and its suppliers. We addressed the endogeneity issues using the instrumental variable approach. Our outcomes remain robust after using this approach.

Our conclusions highlight the importance of employee treatment for informal finance namely extending trade credit to customers and obtaining trade credit from suppliers. This research is an important contribution to the expanding corpus of CSR literature in the field of corporate finance.

Our empirical results, which focused on trade credit, imply that management choices to spend in CSR activities are advantageous to earning the confidence of stakeholders and allow the business to receive additional funding. These findings were found by concentrating on trade credit.

Due to the fact that the economy of the United States is deeply impacted by the ongoing global financial crisis, this research has the practical drawback of producing results that may vary from those obtained from a sample of nations that have been least impacted by the crisis. This work paves the way for future research by opening up new paths for scholars to investigate this issue statement in the context of a variety of ethnicities and locations.

## Tables

Table 1: Sample distribution by country

Country	N	%
Australia	378	2.86%
Austria	70	0.53%
Belgium	111	0.84%
Brazil	115	0.87%
Canada	612	4.63%
Chile	50	0.38%
China	385	2.91%
Colombia	12	0.09%
Czech Republic	12	0.09%
Denmark	100	0.76%
Egypt, Arab Rep.	23	0.17%
Finland	143	1.08%
France	434	3.29%
Germany	442	3.35%
Greece	56	0.42%
Hong Kong SAR, China	512	3.88%
Hungary	12	0.09%
India	68	0.51%
Indonesia	47	0.36%
Ireland	44	0.33%
Italy	120	0.91%
Japan	2688	20.35%
Korea, Rep.	235	1.78%
Luxembourg	10	0.08%
Malaysia	86	0.65%
Mexico	113	0.86%
Netherlands	173	1.31%
New Zealand	21	0.16%
Norway	131	0.99%
Peru	8	0.06%
Philippines	35	0.26%
Poland	59	0.45%
Portugal	34	0.26%
Russian Federation	70	0.53%
Saudi Arabia	9	0.07%
Singapore	138	1.04%
South Africa	450	3.41%
Spain	155	1.17%
Sri Lanka	12	0.09%
Sweden	238	1.80%
Switzerland	265	2.01%
Thailand	41	0.31%
Turkey	29	0.22%

United Kingdom	1026	7.77%
United States	3436	26.01%
Total	13208	100.00%

Table 2: Descriptive statistics

Variable	N	Average	Second Quartile	sigma	First Quartile	Third Quartile
rec_sales	13208	13.871	13.253	11.059	6.240	19.123
wf_score	13208	0.537	0.560	0.275	0.315	0.767
ln_sales	13208	15.218	15.229	1.182	14.446	16.046
ni_sales	13208	0.067	0.054	0.118	0.024	0.099
cash_assets	13208	0.112	0.084	0.102	0.038	0.157
fa_assets	13208	0.313	0.273	0.201	0.152	0.437
sales_growth	13208	0.078	0.056	0.173	-0.009	0.136
grossm	13208	0.363	0.335	0.187	0.228	0.468
ln_gdpc	13208	10.483	10.695	0.703	10.525	10.818
p_credit	13208	142.439	158.936	50.742	119.299	179.591

Table 3: Correlation

Variable	rec_sales	wf_score	ln_sales	ni_sales	cash_assets	fa_assets	sales_growth	grossm	ln_gdpc
wf_score	<b>0.025</b>								
ln_sales	<b>-0.072</b>	<b>0.244</b>							
ni_sales	-0.007	0.018	<b>-0.167</b>						
cash_assets	<b>0.121</b>	<b>-0.051</b>	<b>-0.082</b>	<b>0.114</b>					
fa_assets	<b>-0.230</b>	<b>-0.037</b>	<b>-0.077</b>	0.001	<b>-0.240</b>				
sales_growth	-0.020	<b>-0.040</b>	<b>-0.096</b>	<b>0.142</b>	<b>0.025</b>	<b>0.036</b>			
grossm	<b>0.026</b>	<b>0.088</b>	<b>-0.239</b>	<b>0.310</b>	<b>0.128</b>	0.022	<b>0.037</b>		
ln_gdpc	<b>-0.023</b>	<b>-0.023</b>	<b>0.093</b>	<b>-0.064</b>	<b>-0.044</b>	<b>-0.129</b>	<b>-0.135</b>	<b>0.058</b>	
p_credit	<b>-0.045</b>	<b>-0.159</b>	<b>0.076</b>	0.002	<b>0.073</b>	<b>-0.110</b>	<b>-0.050</b>	0.002	<b>0.346</b>

Table 4: Main results

Variable	(1)	(2)
	rec_sales	rec_sales
wf_score	2.007*** (5.700)	1.249*** (3.462)
ln_sales	-1.789*** (-17.700)	-0.845*** (-9.328)
ni_sales	-0.252 (-0.224)	-2.944*** (-3.142)
cash_assets	-11.636*** (-11.885)	7.137*** (6.954)
fa_assets	-14.485*** (-29.178)	-12.604*** (-25.122)
sales_growth	0.872 (1.577)	-1.498*** (-2.608)
grossm	2.061*** (3.540)	0.599 (1.000)
ln_gdpc	5.208*** (6.766)	-0.424*** (-2.778)
p_credit	-0.016*** (-3.615)	-0.012*** (-5.712)
Constant	-10.527 (-1.297)	35.448*** (16.487)
Ind FEs	Y	
Ctry FEs	Y	
Year FEs	Y	
Triple clustering		Y
Observations	13,208	13,208
R-squared	0.323	0.072

Table 5: Alternative trade credit proxies

Variable	(1)	(2)	(3)	(4)
	rec_assets	net_rec_sales	ar_days	payables_sales
wf_score	0.801*** (2.806)	0.804** (2.498)	8.481*** (5.483)	0.022*** (6.138)
ln_sales	-0.312*** (-4.182)	-0.958*** (-10.471)	-9.512*** (-19.477)	-0.018*** (-18.693)
ni_sales	-2.367*** (-3.965)	6.855*** (3.803)	15.240* (1.804)	0.003 (0.266)
cash_assets	-6.688*** (-9.286)	-3.747*** (-4.216)	-51.795*** (-11.713)	-0.115*** (-11.905)
fa_assets	-16.404*** (-42.541)	-5.063*** (-12.797)	-66.551*** (-30.749)	-0.152*** (-30.045)
sales_growth	1.175*** (2.790)	-0.636 (-1.369)	-15.512*** (-6.551)	0.008 (1.398)
grossm	-8.959*** (-21.096)	-0.120 (-0.220)	7.228** (2.555)	
ln_gdpc	2.820*** (4.804)	0.274 (0.404)	18.360*** (5.312)	0.050*** (6.448)
p_credit	-0.025*** (-6.967)	0.027*** (6.841)	0.045** (2.296)	-0.000*** (-3.310)
finish				-0.029*** (-9.953)
Ind FEs	Y	Y	Y	Y
Ctry FEs	Y	Y	Y	Y
Year FEs	Y	Y	Y	Y
Constant	-2.634 (-0.445)	16.496** (2.347)	30.880 (0.897)	-0.058 (-0.717)
Observations	13,208	13,208	12,226	13,208
R-squared	0.379	0.312	0.262	0.329

Table 6: Instrumental variable approach

Variable	(1)	(2)
	First stage	Second stage
	wf_score	rec_sales
hiring_reg_min_d	5.764*** (10.425)	
mandated_cost_d	11.737*** (20.542)	
wf_score_pred		0.020*** (5.828)
ln_sales	7.567*** (39.111)	-1.637*** (-17.613)
ni_sales	5.852*** (3.418)	-0.127 (-0.113)
cash_assets	-10.988*** (-4.912)	-11.861*** (-12.040)
fa_assets	-5.768*** (-5.005)	-14.600*** (-29.241)
sales_growth	-4.805*** (-3.715)	0.774 (1.399)
grossm	26.119*** (21.147)	2.586*** (4.481)
ln_gdpc	2.665*** (6.756)	5.333*** (6.925)
p_credit	-0.031*** (-5.637)	-0.016*** (-3.750)
Ind FEs	Y	Y
Ctry FEs	Y	Y
Year FEs	Y	Y
Constant	-100.269*** (-18.331)	-12.977 (-1.601)
Observations	13,208	13,208
R-squared	0.163	0.323

Table 7: Sub-sample analyses

Variables	Emerging countries	Developed countries	Common law countries	Civil law countries
	(1)	(2)	(3)	(4)
wf_score	-1.313 (-1.246)	2.639*** (7.111)	1.724*** (3.554)	1.742*** (3.531)
log_sales	-1.633*** (-6.277)	-1.794*** (-16.413)	-1.314*** (-9.271)	-2.151*** (-15.460)
ni_sales	-2.894 (-0.871)	-0.331 (-0.282)	-0.232 (-0.187)	0.140 (0.071)
cash_assets	-6.942** (-1.978)	-12.507*** (-12.533)	-12.410*** (-10.633)	-13.019*** (-8.190)
tangab	-20.202*** (-13.547)	-13.061*** (-24.680)	-8.650*** (-14.329)	-22.030*** (-28.520)
sg	2.902** (1.985)	0.229 (0.395)	-0.224 (-0.318)	1.261 (1.503)
grossmargin	5.933*** (3.689)	1.725*** (2.739)	2.979*** (3.700)	1.409* (1.705)
lngdpc	8.024*** (5.584)	5.725*** (5.720)	6.304*** (4.297)	5.415*** (5.449)
pcredit	0.008 (0.377)	-0.014*** (-3.022)	-0.015*** (-2.608)	0.011* (1.824)
Constant	-24.647** (-2.075)	-18.714* (-1.757)	-35.937** (-2.323)	-0.906 (-0.086)
Observations	1,961	11,247	6,235	6,973
R-squared	0.319	0.335	0.230	0.374

## References

- Abdulla, Y., Dang, V. A., & Khurshed, A. (2017). Stock market listing and the use of trade credit: Evidence from public and private firms. *Journal of Corporate Finance*, 46, 391-410.
- Akerlof, G. (1982). Labor contracts as partial gift exchange. *Quarterly Journal of Economics* 97, 543-69.
- Akerlof, G.A., Rose, A.K., Yellen, J.L., Ball, L., Hall, R.E. (1988). Job switching and job satisfaction in the U.S. labor market. In: *Brookings Pap. Econ. Act.* 1988, pp. 495–594.
- Atanassov, J., Kim, E.H. (2009). Labor and corporate governance: international evidence from restructuring decisions. *J. Financ.* 64, 341–374.
- Bae, K. H., Kang, J. K., & Wang, J. (2011). Employee treatment and firm leverage: A test of the stakeholder theory of capital structure. *Journal of financial economics*, 100(1), 130-153.
- Baker, S.R., Bloom, N., Davis, S.J. (2016). Measuring economic policy uncertainty. *Q. J. Econ.* 131 (4), 1593–1636.
- Barnea, A., & Rubin, A. (2005). Corporate Social Responsibility as a Conflict Between Owners, Social Performance Metrics Conference. *Haas Center for Responsible Business*.
- Ben-Nasr, H., & Ghouma, H. (2018). Employee welfare and stock price crash risk. *Journal of Corporate Finance*, 48, 700-725.
- Biddle, G.C., Hilary, G., Verdi, R.S. (2009). How does financial reporting quality relate to investment efficiency? *J. Account. Econ.* 48, 112–131.
- Bowen, R., Call, A., Rajgopal, S. (2010). Whistle-blowing: target firm characteristics and economic consequences. *Account. Rev.* 85, 1239–1271.

- Cao, Z., & Rees, W. (2020). Do employee-friendly firms invest more efficiently? Evidence from labor investment efficiency. *Journal of Corporate Finance*, 65, 101744.
- Chang, S., & Jo, H. (2019). Employee-friendly practices, product market competition and firm value. *Journal of Business Finance & Accounting*, 46(1-2), 200-224.
- Chen, C., Chen, Y., Hsu, P.-H., Podolski, E.J. (2016a). Be nice to your innovators: employee treatment and corporate innovation performance. *J. Corp. Finance* 39 78–98.
- Chen, T. K., Chen, Y. S., & Yang, H. L. (2019). Employee treatment and its implications for bondholders. *European Financial Management*, 25(4), 1047-1079.
- Chen, J., Leung, W. S., & Evans, K. P. (2016b). Are employee-friendly workplaces conducive to innovation? *Journal of Corporate Finance*, 40, 61-79.
- Cheung, A. W., & Pok, W. C. (2019). Corporate social responsibility and provision of trade credit. *Journal of Contemporary Accounting & Economics*, 15(3), 100159.
- Chow, C.W. (1983). Competitive manuscript award: the effects of job standard tightness and compensation scheme on performance: an exploration of linkages. *Account. Rev.* 667–685.
- Cronqvist, H., Heyman, F., Nilsson, M., Svaleryd, H., and Vlachos, J. (2009). Do entrenched managers pay their workers more? *The Journal of Finance*, 64(1), 309-339.
- Darrough, M., Kim, H., & Zur, E. (2019). The impact of corporate welfare policy on firm-level productivity: Evidence from unemployment insurance. *Journal of business ethics*, 159(3), 795-815.
- Diamond, P.A. (1982). Aggregate demand management in search equilibrium. *J. Polit.*

- Econ. 90, 881–894.
- Dixit, A. (1997). Investment and employment dynamics in the short run and the long run. *Oxf. Econ. Pap.* 49, 1–20.
- D'Mello, R., & Toscano, F. (2020). Economic policy uncertainty and short-term financing: The case of trade credit. *Journal of Corporate Finance*, 64, 101686.
- Dyck, A., Morse, A., Zingales, L. (2010). Who blows the whistle on corporate fraud? *J. Financ.* 65, 2213–2253.
- Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial economics*, 101(3), 621-640.
- Edmans, A. (2012). The link between job satisfaction and firm value, with implications for corporate social responsibility. *Acad. Manag. Perspect.* 26 (4), 1–19.
- Edmans, A., Li, L., Zhang, C. (2020). Employee Satisfaction, Labor Market Flexibility, and Stock Returns around the World. Working Paper. European Corporate Governance Institute (ECGI).
- El Ghoul, S., & Zheng, X. (2016). Trade credit provision and national culture. *Journal of Corporate Finance*, 41, 475-501.
- Faleye, O., & Trahan, E. A. (2011). ‘Labor-friendly corporate practices: Is what is good for employees good for shareholders?’ *Journal of Business Ethics*, 101, 1–27.
- Farmer, R.E.A. (1985). Implicit contracts with asymmetric information and bankruptcy: the effect of interest rates on layoffs. *Rev. Econ. Stud.* 52, 427–442.
- Fauver, L., McDonald, M. B., & Taboada, A. G. (2018). Does it pay to treat employees well? International evidence on the value of employee-friendly culture. *Journal of Corporate Finance*, 50, 84-108.
- Francis, B., Hasan, I., Liu, L., & Wang, H. (2019). Employee treatment and contracting

- with bank lenders: An instrumental approach for stakeholder management. *Journal of Business Ethics*, 158(4), 1029-1046.
- Friedman, M. (2007). The social responsibility of business is to increase its profits. In *Corporate ethics and corporate governance* (pp. 173-178). Springer, Berlin, Heidelberg.
- Garcia-Appendini, E., & Montoriol-Garriga, J. (2013). Firms as liquidity providers: Evidence from the 2007–2008 financial crisis. *Journal of financial economics*, 109(1), 272-291.
- Ghaly, M., Dang, V. A., & Stathopoulos, K. (2015). Cash holdings and employee welfare. *Journal of Corporate Finance*, 33, 53-70.
- Gonçalves, A. B., Schiozer, R. F., & Sheng, H. H. (2018). Trade credit and product market power during a financial crisis. *Journal of Corporate Finance*, 49, 308-323.
- Guo, J., Huang, P., Zhang, Y., & Zhou, N. (2016). The effect of employee treatment policies on internal control weaknesses and financial restatements. *The Accounting Review*, 91, 1167–1194.
- Hamermesh, D.S. (1995). Labour demand and the source of adjustment costs. *Econ. J.* 105, 620–634.
- Hamermesh, D.S. (1989). Labor demand and the structure of adjustment costs. *Am. Econ. Rev.* 79, 674–689.
- Hamermesh, D.S., Pfann, G.A. (1996). Adjustment costs in factor demand. *J. Econ. Lit.* 34, 1264–1292.
- Hemingway, C.A., MacLagan, P.W. (2004). Managers' personal values as drivers of corporate social responsibility. *J. Bus. Ethics* 50, 33–44.
- Hong, H., Kubik, J. D., & Scheinkman, J. A. (2012). *Financial constraints on corporate*

- goodness* (No. w18476). National Bureau of Economic Research.
- Jensen, M.C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *Am. Econ. Rev.* 76, 323–329.
- Jensen, M.C., Meckling, W.H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *J. Financ. Econ.* 3, 305–360.
- Jory, S. R., Khieu, H. D., Ngo, T. N., & Phan, H. V. (2020). The influence of economic policy uncertainty on corporate trade credit and firm value. *Journal of Corporate Finance*, 64, 101671.
- Kong, D., Pan, Y., Tian, G. G., & Zhang, P. (2020). CEOs' hometown connections and access to trade credit: Evidence from China. *Journal of Corporate Finance*, 62, 101574.
- Landier, A., Nair, V.B., Wulf, J. (2009). Trade-offs in staying close: corporate decision making and geographic dispersion. *Rev. Financ. Stud.* 22, 1119–1148.
- Landier, A., V. B. Nair, J. Wulf. (2007). Trade-offs in staying close: Corporate decision making and geographic dispersion. *Review of Financial Studies*, 22(3), 1119–1148.
- Lambert, R., Leuz, C., Verrecchia, R.E. (2007). Accounting information, disclosure, and the cost of capital. *J. Account. Res.* 45, 385–420.
- Levine, D.I. (1992). Can wage increases pay for themselves? Tests with a productive function. *Econ. J.* 102 (414), 1102–1115.
- Mao, C. X., & Weathers, J. (2019). Employee treatment and firm innovation. *Journal of Business Finance & Accounting*, 46(7-8), 977-1002.
- Mas, A. (2006). Pay, reference points, and police performance. *Q. J. Econ.* 122, 783–821.
- Meltzer, A.H. (1960). Mercantile credit, monetary policy, and size of firms. *Rev. Econ.*

- Stat. 42, 429–437.
- Miceli, M.P., Near, J.P., (1994). Whistle blowing: reaping the benefits. *Acad. Manag. Exec.* 8, 65–73.
- Nguyen, L., & Nguyen, K. (2021). Corporate social responsibility, trade credit provision and doubtful accounts receivable: the case in China. *Social Responsibility Journal*.
- Oi, W.Y. (1962). Labor as a quasi-fixed factor. *J. Polit. Econ.* 70, 538–555.
- Oswald, A.J., Proto, E., Sgroi, D. (2015). Happiness and productivity. *J. Labor Econ.* 33, 789–822.
- Pagano, M., Volpin, P.F. (2005). Managers, workers, and corporate control. *J. Financ.* 60, 841–868.
- Perry-Smith, J. E., & Blum, T. C. (2000). ‘Work-family human resource bundles and perceived organizational performance’. *Academy of Management Journal*, 43, 1107–1117.
- Petrovits, C. (2006). Corporate-sponsored foundations and earnings management. *J. Account. Econ.* 41, 335–362.
- Pissarides, C.A. (2011). Equilibrium in the labor market with search frictions. *Am. Econ. Rev.* 101, 1092–1105.
- Prior, D., Surroca, J., Tribo, J.A. (2008). Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. *Corp. Gov.* 16 (3), 160–177.
- Rothschild, J., Miethe, T.D. (1999). Whistle-blower disclosures and management retaliation: the battle to control information about organization corruption. *Work. Occup.* 26, 107–128.
- Saeed, A. (2021). The impact of employee friendly practices on dividend payments:

- Evidence from emerging economies. *Journal of Business Research*, 135, 592-605.
- Saeed, A., & Zureigat, Q. (2020). Corporate Social Responsibility, Trade Credit and Financial Crisis. *Journal of Risk and Financial Management*, 13(7), 144.
- Salop, S.C. (1979). A model of the natural rate of unemployment. *Am. Econ. Rev.* 69, 117–125.
- Schwartz, R.A. (1974). An economic model of trade credit. *J. Financ. Quant. Anal.* 9, 643–657.
- Shang, C. (2020). Trade credit and stock liquidity. *Journal of Corporate Finance*, 62, 101586.
- Shou, Y., Shao, J., Wang, W., & Lai, K. H. (2020). The impact of corporate social responsibility on trade credit: Evidence from Chinese small and medium-sized manufacturing enterprises. *International Journal of Production Economics*, 230, 107809.
- Sherf, N.S., Venkataramani, V., & Gajendran, R.S. (2019). Too Busy to Be Fair? The Effect of Workload and Rewards on Managers' Justice Rule Adherence. *Academy of Management Journal* Vol. 62, No. 2.
- Stigler, G.J. (1962). Information in the labor market. *J. Polit. Econ.* 70, 94–105.
- Stiglitz, J.E., Weiss, A. (1981). Credit rationing in markets with imperfect information. *Am. Econ. Rev.* 71, 393–410.
- Turban, D., Greening, D. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal* 40, 658–672.
- Verwijmeren, P., & Derwall, J. (2010). Employee well-being, firm leverage, and bankruptcy risk. *Journal of Banking & Finance*, 34(5), 956-964.

- Wadhvani, S.B., Wall, M. (1991). A direct test of the efficiency wage model using UK micro-data. *Oxf. Econ. Pap.* 43 (4), 529–548.
- Wei, Y., Nan, H., & Wei, G. (2020). The impact of employee welfare on innovation performance: Evidence from China's manufacturing corporations. *International Journal of Production Economics*, 228, 107753.
- Weiss, A. (1980). Job queues and layoffs in labor markets with flexible wages. *J. Polit. Econ.* 88, 526–538.
- Wu, W., Firth, M., & Rui, O. M. (2014). Trust and the provision of trade credit. *Journal of Banking & Finance*, 39, 146-159.
- Xu, H., Wu, J., & Dao, M. (2020). Corporate social responsibility and trade credit. *Review of Quantitative Finance and Accounting*, 54(4), 1389-1416.
- Yashiv, E. (2007). Labor search and matching in macroeconomics. *Eur. Econ. Rev.* 51, 1859–1895.
- Zhang, J., Wang, J., & Kong, D. (2020). Employee treatment and corporate fraud. *Economic Modelling*, 85, 325-334.
- Zingales, L. (2000). In search of new foundations. *J. Financ.* 55, 1623–1653.

## Appendix A

Variable	Definition	Source
rec_sales	The ratio of trade receivables over sales	Worldscope
rec_assets	Trade receivables over assets	Worldscope
net_rec_sales	The difference between accounts receivables and accounts payables over assets	Worldscope
ar_days	Accounts receivables in days calculated as the ratio of trade receivables over sales times 365	Worldscope
payables_sales	The ratio of accounts payables over sales	Worldscope
wf_score	Refinitiv ESG's workforce score. It assesses the firm's ability in enhancing employees' job satisfaction, promoting health and safety in the workplace and enhancing diversity, equal opportunities and training of its employees. The index ranges from 0 to 100, with a higher score indicating better employee treatment.	ESG
ln_sales	The logarithm of total sales in US\$	Worldscope
ni_sales	The ratio of net income over sales	Worldscope
cash_assets	The ratio cash plus short-term investments over assets	Worldscope
fa_assets	The ratio of fixed assets over total assets	Worldscope
sales_growth	Sales growth calculated over a one year period	Worldscope
grossm	Gross margin calculated as the difference between total sales and cost of goods sold over total sales	Worldscope
ln_gdpc	The logarithm of GDP per capita	WDI
p_credit	The ratio of bank credit offered to the private sector over GDP	WDI

## Appendix B

Variable	VIF	1/VIF
wf_score1	1.52	0.66
log_sales	1.74	0.58
ni_sales	1.19	0.84
cash_assets	1.35	0.74
tangab	1.24	0.81
sg	1.17	0.85
grossmargin	1.38	0.72
lngdpc	35.63	0.03
pcredit	6.95	0.14