

Corporate social responsibility and firm value: evidence from Chinese targeted poverty alleviation

CSR and
corporate
financial
performance

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Abstract

Purpose – Whilst the relationship between corporate social responsibility (CSR) and corporate financial performance has been well documented, CSR has rarely been studied from the perspective of corporate poverty alleviation. This study aims to test whether participation in targeted poverty alleviation (TPA) affects firms' market value and to explore how the magnitudes of market value vary in different CSR environments.

Design/methodology/approach – Based on recent Chinese TPA initiatives and on 108 TPA announcements of Chinese-listed firms from 2016 to 2020, this study adopts an event study method to investigate the impact of firm's TPA announcements on the firm's market value. Then, the authors construct a cross-sectional regression to analyse different CSR factors that may affect market reactions.

Findings – The results demonstrate that TPA announcements can increase a firm's overall market value. Additionally, the results show that TPA way and firm ownership significantly moderate the market reaction, namely the positive reaction is more significant when the TPA announcements involve charity poverty alleviation rather than industrial poverty alleviation and for privately owned firms rather than state-owned firms.

Practical implications – The empirical results help TPA practitioners obtain a nuanced understanding of whether and when to participate in poverty alleviation is worthwhile. This study also provides a reference for poverty alleviation work in countries with similar backgrounds.

Originality/value – This study not only provides empirical evidence for the consequences of poverty alleviation behaviour of firms in developing countries, but also complements the field of CSR research in developed countries.

Keywords Corporate social responsibility, Targeted poverty alleviation, Abnormal returns, Charity poverty alleviation, Industrial poverty alleviation

Paper type Research paper

1. Introduction

Corporate social responsibility (CSR) practices have always been the focus of researchers for years (Jacobs *et al.*, 2010; Úbeda-García *et al.*, 2021; Gao, 2008). CSR is closely related to corporate sustainable development, which is the source of corporate success, innovation, and profit. Poverty, viewed as a huge global challenge, is an obstacle to the sustainable



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development of human society and modern firms. According to the [World Bank \(2020\)](#), despite mankind's great efforts to eradicate extreme poverty in recent decades, the sustainable development target of completely eliminating extreme poverty by 2030 is still fraught with difficulties. Some governments and international organisations are beginning to recognise the importance of involving businesses in addressing sustainable development challenges, including eradicating poverty ([Chang et al., 2020](#)).

China has made significant progress against poverty in recent years. According to the [World Bank \(2020\)](#), in China, there were only about 225 million people living in poverty (living on less than \$5.50 per day) in 2019. To achieve the country's target of lifting all poor households out of absolute poverty (per capita annual income to exceed 4,000 yuan) by 2020, the Chinese central government initiated the targeted poverty alleviation (TPA) strategy. With the government's attention to poverty eradication, the number of Chinese listed firms engaged in TPA activities has dramatically increased, and recently, these firms have gradually begun to indicate their TPA performance in their annual reports. This provides a unique opportunity to examine listed firms' CSR practices from the perspective of poverty alleviation.

Previous researches on CSR have mainly focussed on three dimensions: economic, environmental and social dimensions ([Chen et al., 2016](#); [Dahlsrud, 2008](#); [Jacobs et al., 2010](#); [Ho et al., 2021](#)). However, few studies have focussed on corporate poverty alleviation. Although some researchers have recently explored the topic of poverty alleviation directly, they have mainly concentrated on its effectiveness ([Huang et al., 2021](#)), rather than exploring firms' interests in poverty alleviation activities. For instance, [Huang et al. \(2021\)](#) found that the photovoltaic poverty alleviation program significantly improves the standard of living of local people; [Zhang et al. \(2018\)](#) suggested that whilst the central government has set income targets for poverty alleviation projects, they have not paid enough attention to the returns of firms. In essence, it is necessary to investigate the impact of CSR initiatives on firm value from the emerging perspective of corporate poverty alleviation. Given this background, clearly, prior research has not addressed some critical questions regarding TPA as CSR, such as.

- (1) Does involvement in TPA activity affect firms' market value?
- (2) How do various operational environments (i.e. TPA ways, firm ownership types, and regional marketization levels) affect the magnitude of the effect of TPA on market value?

These issues should be addressed urgently in this era of poverty alleviation, because TPA is not just a campaign in China; it may potentially affect corporate market value and is a critical part of corporate sustainability development.

This study further adopts signalling theory to investigate how different CSR operational factors affect the market value changes of Chinese listed firms that participate in TPA. Signalling theory states that in the case of information asymmetry between two sides, the side with less information may need to depend on some observable signals conveyed by the other side that has the information to explain the potential abilities of the latter ([Connelly et al., 2011](#)). Accordingly, in the context of TPA, stakeholders should rely on the observable information of specific firms to forecast potential financial consequences for the enterprises' market value when the firm makes the TPA announcement. Considering that the signal, signaller, and receiver are the three main elements of signalling theory ([Taj, 2016](#)), this study first considers two types of TPA ways: charity poverty alleviation and industrial poverty alleviation, which may generate different signals for corporate stakeholders. This study then examines whether investors rely on the observable characteristics (firms' ownership) of specific firms to explain the financial consequences of corporate TPA. Finally, this study examines whether the market reaction depends on the regional marketization level

(the development level of marketization: more developed vs. developing), that is, whether the regional marketization level affects TPA signal transmission. In essence, revealing the aforementioned variations can provide important implications for firms to obtain more benefits from their TPA initiatives, and exploring the aforementioned moderators that may affect market response to TPA announcements will help TPA practitioners obtain a nuanced understanding of whether and when it is worthwhile to participate in poverty alleviation.

To address the aforementioned questions, this study first examines the market reaction to TPA announcements. Based on the 108 TPA announcements of Chinese listed firms from 2016 to 2020, our empirical results show that TPA indeed increases a firm's market value overall. More specifically, the mean abnormal returns for both days 1 and 2 were positive (0.538% and 0.315%, respectively) and significant ($p < 0.05$). This study mainly focusses on the differential effects of the TPA way, firm ownership, and regional marketization levels. This study found that positive reactions are more significant when the announcements involve charity poverty alleviation rather than industrial poverty alleviation, and for privately owned firms rather than state-owned firms. However, our conclusion does not support that market returns on TPA announcements are higher in areas with high marketization levels.

Thus, this study makes several contributions. First, this study mainly enriches the literature on the social dimension of CSR by analysing the emerging ways of TPA. Whilst the economic consequences of CSR are well documented in the western context, few studies have been conducted from the perspective of corporate poverty alleviation. Our results demonstrate that, based on the Chinese context, participation in TPA increases the firms' market value, which establishes a new theoretical foundation for the positive association between corporate poverty alleviation and firm value. Therefore, this study not only provides empirical evidence for the consequences of poverty alleviation behaviour of firms in developing countries, but also complements the field of CSR research in developed countries. Second, this study also documents the differentiation of market responses across different TPA ways and firm ownership types. These findings enable both firms and stakeholders to better understand whether and when engaging in TPA. Finally, our findings provide policy implications for the government. This also provides a reference for poverty alleviation work in countries with similar backgrounds.

The remainder of this paper is organised as follows. [Section 2](#) presents the institutional background and hypotheses development. [Section 3](#) describes the sample-selection process and methodology. [Section 4](#) presents the results of this analysis. [Section 5](#) discusses the results, theoretical and management implications, and limitations of the study.

2. Literature review and hypotheses development

2.1 Institutional background

Poverty eradication in all its forms is an important global goal of the 2030 agenda for sustainable development ([Chang et al., 2020](#)). Poverty has led to a series of adverse consequences for social development. For example, [Yoshikawa et al. \(2012\)](#) proposed that poverty causes trauma to adolescents' psychology and emotion and seriously damages their behavioural health. [Dorling et al. \(2000\)](#) found that poverty exacerbates disease mortality. The United Nations increasingly requires firms to contribute to attaining the sustainable development goals, including the goal of eradicating poverty ([Medina-Muñoz and Medina-Muñoz, 2020](#)).

China has made great progress in reducing poverty ([Chang et al., 2020](#)). For decades, China has been committed to the goal of poverty eradication, and the Chinese government has invested substantial resources to assist people get out of poverty. The Chinese central government proposed the goal of "getting out of poverty for the rural poor by 2020" in the decision to win the battle against poverty on 29 November 2015. Subsequently, the Chinese People's Congress (CPC) set this goal in the 13th Five-Year Plan on 16 March 2016. To achieve

this goal, China launched a national campaign to alleviate poverty. A prominent feature of the activity is that it mobilises organisations and individuals from all walks of life, including government officials, listed firms, and university staff, to contribute to the activity (Chang *et al.*, 2020).

To realise the role of the capital market in serving the real economy, on 12 September 2016 the China Securities Regulatory Commission (CSRC) encouraged listed firms to perform their social responsibility to serve the national poverty alleviation strategy. In December 2016, the two stock exchange markets in Shanghai and Shenzhen required firms to fully disclose their poverty alleviation achievements in annual reports. Thus, the disclosure facilitates data collection in this research regarding listed firms' participation in TPA activities. According to the statistics of the Stock Exchange, 854 listed firms disclosed information on poverty alleviation in 2017, with investments in poverty alleviation amounting to 20.8 billion yuan, directly helping more than 540,000 poor people and lifting themselves out of poverty [1].

With the government's attention to TPA activity, a large number of listed firms have contributed to this poverty alleviation activity by donating money and materials, building factories, and developing industrial projects in impoverished areas. For instance, China Minsheng Bank invested 3.2 billion yuan to support 31 industrial poverty alleviation projects and 12.8 million yuan to support 2,415 students in poverty in 2019. As a large-scale intensive pig farming firm, Muyuan invested 10.315 billion yuan in 54 key poverty-stricken counties in 13 provinces by the end of 2017, employing more than 20,000 people in poverty-stricken areas with an annual per capita income of 50,000 yuan. Midea donated 10 million yuan to poverty alleviation work in more than 2,000 relatively poor villages in Guangdong, and donated 1,100 sets of small household appliances worth 500,000 yuan to the people of Liangshan, Sichuan [2].

2.2 Literature review

In recent years, the public has increasingly shifted its goals from the government to firms, expecting them to solve worsening environmental problems and social problems, including air pollution, employees, human rights, products and community problems (Wickert, 2014). As a link between firms and their stakeholders, CSR have always been the focus of academic attention. Researchers are interested in whether, how and when CSR is attractive to businesses and stakeholders. Based on the different dimensions of CSR, we review the CSR literature in three areas: economic, environmental and social dimensions (Chen *et al.*, 2016; Dahlsrud, 2008; Jacobs *et al.*, 2010; Ho *et al.*, 2021).

First, the economic responsibility dimension reflects the essential attributes of firms as for-profit economic organisations, mainly in terms of the impact of CSR on corporate financial performance. Existing research on the relationship between CSR and financial performance has not reached a consistent conclusion. On the one hand, some scholars argue that CSR initiatives increase firm value by improving corporate reputation, enhancing cause-related marketing, or building better relationships with stakeholders (Arendt *et al.*, 2010; Michal and Myers, 1998; Wang and Qian, 2011). Al-Shammari *et al.* (2021) find that firms take into account both their economic and social responsibilities achieve better performance. On the other hand, some researchers suggest that CSR activity has a negative impact on firm value because it diverts valuable resources to areas unrelated to operations, which represents pure corporate expenditure (Bhandari and Javakhadze, 2017; Seifert *et al.*, 2004). Indeed, the financial consequences of CSR have been widely studied, and some scholars have begun to call for a shift in focus from how corporate social performance affects firms to how it affects stakeholders and society (Barnett *et al.*, 2020).

Second, the environmental responsibility dimension reflects the efforts made by firms to be green. Researches have shown that a range of superior environmental management can significantly improve firms' environmental performance and reduced the adverse impact of

business operation on the environment (Famiyeh *et al.*, 2018; Longoni *et al.*, 2016). However, research on the financial consequences of corporate environmental practices has yielded mixed results. For instance, Jacobs *et al.* (2010) find that the market reacted positively to environmental donations but negatively to firms' announcements of emission reductions. Lam *et al.* (2016) examines the impact of environmental initiatives on the market value of firms based on Chinese social and economic environment, and obtains the results contrary to the western background. Based on data from Chinese manufacturing firms, Jiang *et al.* (2019) find that voluntary environmental information disclosure promotes firms' investment in innovation. Wong *et al.* (2016) find that the economic consequences of corporate environmental responsibility practices in China are influenced by regional differences, with a positive correlation between corporate environmental responsibility practices and operating income in Eastern region; and a negative correlation in the Western region.

Third, most research in the social dimension has focussed on the perspective of corporate philanthropy, which is described as corporate giving to social philanthropy and has been seen as a significant component of CSR (Chen *et al.*, 2016). Existing research has focussed on corporate philanthropy in terms of drivers, organisational approaches and economic consequences (Gautier and Pache, 2015). For example, Lin *et al.* (2015) find that Chinese firms tend to use charitable giving to build political networks in order to be rewarded in the present or future. Wu *et al.* (2021) find Chinese private firms tend to use charitable donations as a tool to cover up environmental misconduct. Zhang *et al.* (2021) find that the higher the proportion of returnee executives in Chinese companies, the lower the corporate philanthropic donations. Chen *et al.* (2016) prove that Chinese firms with more charitable giving are more inclined to maintain their reputation and are less likely to be "hollowed out" by controlling shareholders. Chen *et al.* (2020) examined the relationship between corporate charitable donation and subsequent misbehaviour and find that there are less misbehaviour amongst firms that donate consistently compared to one-off charitable donation behaviours.

Based on the above discussion, little CSR studies have paid attention to the social problem of poverty alleviation. As poverty is an urgent social issue to be addressed in developing countries, business is expected to make a significant contribution to poverty alleviation (Medina-Muñoz and Medina-Muñoz, 2020). In addition, social responsibility in the context of poverty alleviation may exhibit some uniqueness compared to the application of CSR to other sustainable development challenges (Griffin, 2017). Therefore, it is meaningful to examine the impact of CSR initiatives on firm value from the emerging perspective of corporate poverty alleviation. Based on recent Chinese TPA initiatives, this study investigates the impact of firm's TPA announcements on its market value. However, how and when business involvement in TPA is worthwhile remains overlooked and unclear. Therefore, based on signalling theory, this study examines whether the various operational environments affect TPA signal transmission, this is, whether the market value varies with different TPA ways (i.e. charity poverty alleviation or industrial poverty alleviation), firm's ownerships (i.e. privately-owned or state-owned) and the regional marketization level. This provides further evidence for researchers to understand not only whether but also when and how "it pays to be TPA". This study thus enriches the literature on the social dimension of CSR by analysing the emerging ways of TPA. This study not only help build a new theoretical foundation for the association between corporate poverty alleviation and firm value in developing countries, but also complements the field of CSR research in developed countries.

2.3 Hypotheses development

Signalling theory is applied to the case of information asymmetry, in which case, the certain underlying abilities of one side are imperceptible to the other (Connelly *et al.*, 2011; Zerbini, 2017). According to signalling theory, there are three main elements in the signal

transmission process: signal, signaller, and receiver (Taj, 2016). Signalling theory focusses on how the party who has the information (signaller) conveys the signal and how the party who needs the information (receiver) interprets the signal (Lee et al., 2016). Our hypothetical framework is developed from signalling theory and presented in Figure 1. First, the TPA announcement is issued by the firm can be seen as a signal that firms actively respond to the government's appeal and will make efforts for TPA. The reaction from investors after receiving signals may bring abnormal market returns and affect the market value of firms. However, how investors interpret the signal will also be affected by the characteristics of the signal and the signaller, the signal environment and other factors. Therefore, referring to Liu et al. (2020), this study considers the three moderators that may affect the market response: the characteristics of the signal (TPA ways), the characteristics of the signaller (firm's ownership), and market conditions (marketization level).

2.3.1 TPA and its impacts on financial performance. To some extent, the firm's TPA initiative help address the concerns of the local government and the firm's key stakeholders, and the TPA announcement can be seen as a signal that the firm will contribute to the TPA. The potential economic benefits of TPA include increasing income and resources, reducing risks and costs.

In terms of external benefits, TPA initiatives can increase firm revenue and competitive resources, indirectly affecting firm value. On the one hand, previous research suggests that consumers may perceive a firm's CSR commitment as a signal of brand quality, which in turn increases purchase intentions (Bhardwaj et al., 2018). Similarly, participating in TPA is an avenue for firms to actively fulfil their social responsibility, consumers also may favour firms' products for their TPA initiatives. On the other hand, TPA can also bring potential economic benefits to firms by increasing their competitive resources. Previous research has suggested that social responsibility initiatives help firms build social networks to obtain sustainable resources from stakeholders (Hillman, 2005). In China, the government controls several critical resources related to the survival and sustainable development of firms. Firm participation in TPA activities is not only a manifestation of social responsibility, but also reduces the burden on the local government. Thus, political leverage generated through TPA

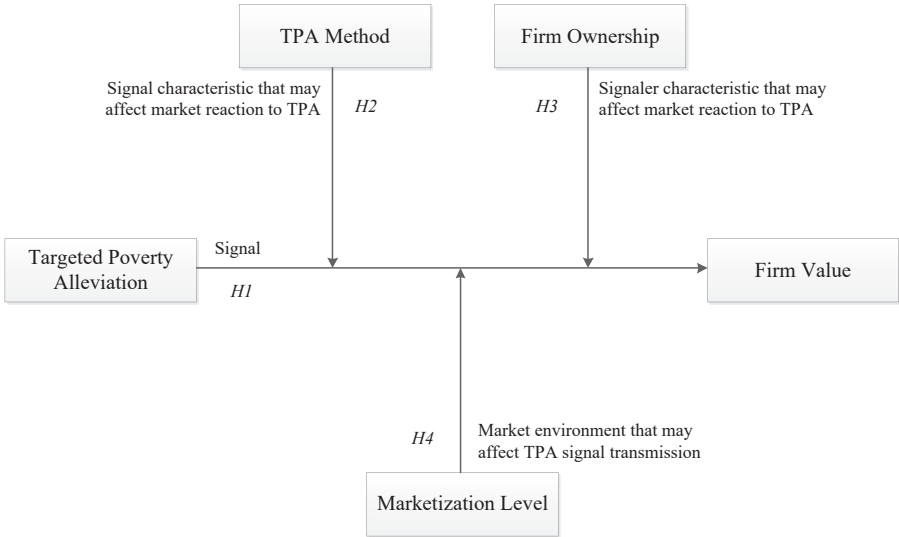


Figure 1.
Research model

may enable firms to gain more resources, such as land, credit, and government subsidies (Chang *et al.*, 2020).

In terms of cost reduction, scholars find that firms with more transparency in the dissemination of CSR information can reduce financing costs (Raimo *et al.*, 2021). Previous research has also shown that socially responsible initiatives are helpful for establishing political connections with the government (Lin *et al.*, 2015), which enables firms to reduce political costs. The government usually uses fiscal and tax policies to compensate for the cost of CSR, which enables firms to reduce tax costs. Regarding TPA, preferential tax policies include enterprise income tax, individual income tax, farmland occupation tax, deed tax, stamp tax, and so on. These preferential tax policies greatly reduce the tax burden on firms and reduce operating costs. In addition, firms participate in TPA by cooperating with local governments or banks, which is helpful in reducing financing costs.

In terms of risk reduction, TPA reduces investors' risk expectations by reducing or eliminating the threat of adverse events to the firm, which indirectly affects the firm's internal economic benefits. As an effective risk management strategy, CSR performance can reduce the negative effect of an adverse effect on firm value (Jo and Na, 2012). Chang *et al.* (2020) proposed that business managers tend to contribute to TPA activities to avoid becoming the target of an anti-corruption campaign. Considering the above discussion, our first hypothesis is:

H1. The market reacts positively to TPA announcements.

2.3.2 Moderators that affect market reaction to TPA. Although this study has speculated a positive impact of TPA on firms' performance in the above discussions, due to information asymmetry, stakeholders should rely on the observable information of specific firms to forecast potential financial consequences for the enterprises' market value. Taking the TPA as an example, when firms issue TPA announcements, the external investors may not be able to get the signals that TPA conveys to increase external returns and reduce risks. Therefore, we adopt signalling theory to explore how do various operational environments (i.e. TPA ways, firm ownership types, and regional marketization levels) affect signal transmission, thus resulting in different market reactions.

This study first analyses whether investors rely on different TPA ways to explain the financial consequences of corporate TPA. There are mainly two TPA ways: (1) charity poverty alleviation; firms donate money and materials directly to poor people in impoverished areas; (2) industrial poverty alleviation, which mainly combines the resource endowment of impoverished areas and the industrial development direction of firms to build an agricultural industrial chain model that integrates production, processing, transportation, marketing, and sales in impoverished areas (Liu *et al.*, 2021). These two types of TPA ways show different characteristics and send different signals to investors.

For Chinese firms, investors may believe that industrial poverty alleviation produces less economic benefits than charity poverty alleviation for several reasons. First, according to the concept and characteristics of industrial poverty alleviation, industrial poverty alleviation is a long-term poverty alleviation mechanism that requires continuous investment of resources to maintain industrial development, and the construction process of industrial poverty alleviation is long-term, with slow growth effect, which may be a risk for firms (Liu *et al.*, 2021). In contrast, charity poverty alleviation is a short-term poverty alleviation approach that does not require long-term investment; it is a low-risk approach and can be better controlled for firms. Because of the high degree of external visibility, charity poverty alleviation can easily enhance corporate image. Second, environmental regulations in China are becoming increasingly stringent, and governments have begun to pay close attention to the implementation of environmental laws and regulations (Marquis *et al.*, 2011). Poverty alleviation indirectly increases energy consumption, pollution, and emissions, posing a threat

to the environment. Most impoverished areas are ecologically fragile, with a weak industrial foundation, and there is a contradiction between industrial poverty alleviation and ecological risks. If firms fail to grasp the relationship between industrial development and ecological environmental protection, they will suffer losses. Therefore, our hypothesis is as follows:

- H2.* Market reactions to charity poverty alleviation are more positive than those to industrial poverty alleviation.

This study further examines whether investors rely on a firm's ownership characteristics to explain the financial consequences of corporate TPA. Chinese state-owned firms are not only regarded as business firms, but also as government authorities of social stability. Compared with privately owned firms, in addition to creating shareholder wealth, Chinese state-owned firms also undertake other political and social responsibilities, such as helping the government achieve social welfare goals, increasing employment rates, and protecting the environment (Chen *et al.*, 2018; Zhu *et al.*, 2016). Qian *et al.* (2015) believe that Chinese state-owned firms bear most of their social responsibilities. Since TPA activity is initiated by the government, all relevant government entities are required to participate in this activity. Therefore, state-owned firms may regard TPA as a political task assigned by the government rather than as a tool to increase a firm's revenue. In contrast, although privately owned firms are also encouraged to participate in TPA activity, this is not mandatory. The main goal of privately owned firms participating in TPA is more likely to create shareholder wealth. Therefore, for the TPA initiatives of state-owned firms, investors will regard them as an insignificant signal, as they may assume it is their responsibility, so it is a normal practice. In contrast, for the TPA initiatives of privately owned firms, investors may regard them as a positive signal that can bring economic benefits to firms. Considering the above discussions, this study speculates that the signal transmission effect of TPA initiatives in privately owned firms is stronger than that in state-owned firms, and privately owned firms can reap more economic benefits through TPA initiatives. Therefore, our third hypothesis is as follows:

- H3.* Market reactions to TPA announcements made by privately owned firms are more positive than reactions to those made by state-owned firms.

Finally, this study examines whether market reactions rely on the regional marketization level, that is, whether the regional marketization level affects TPA signal transmission. Since the strategy of reform and opening up, the marketization process has been uneven across various regions in China; this implies great differences in the overall regional environment, such as the legal, economic, and institutional environments (Chen *et al.*, 2018). Accordingly, the process by which investors convey and interpret information may vary from region to region. The local marketization level measures the maturity of the market and intervention of the local government (Peng and Zhou, 2005). The areas with high level of marketization not only provides firms with high media exposure and advanced technology, but also promotes the transaction efficiency of firms, which facilitates the transmission of firm information (Wang and Qian, 2011). Thus, the stakeholders of firms located in the areas with high level of marketization may quickly and accurately capture firms' TPA information. Subsequently, these stakeholders will be in a better position to react to the firm TPA initiatives by providing greater cooperation, which tends to improve the firm's financial performance. On the contrary, due to the lack of effective communication in the areas with low level of marketization, less attention has been paid to the TPA initiatives of firms. Therefore, our hypothesis is as follows:

- H4.* Market reactions to TPA announcements made by firms in areas with high marketization are more positive.

3. Methodology

3.1 Sample selection and data collection

Since TPA activity was proposed by the Chinese central government in 2015 and identified as a national strategy in the 13th Five-Year Plan in 2016, and given that the two stock exchange markets in Shanghai and Shenzhen required firms to fully disclose their annual poverty alleviation achievements in annual reports from 2016, our data have been collected since 2016. The TPA announcement sample in this study was obtained from the JuChao website, which is a listed firm information disclosure website designated by the CSRC. First, with reference to the contents of “the 13th Five-Year Plan for Poverty Alleviation”, we adopted relevant keywords to manually collect TPA announcements from the JuChao website, such as on targeted, photovoltaic, ecological, industrial, and education poverty alleviation. Second, we download and read all announcements that met the above search criteria. Inspired by prior event studies (Lam *et al.*, 2016; Jacobs *et al.*, 2010), we excluded the following announcements: (1) we exclude announcements that did not directly relate to TPA, such as an announcement selected simply because it contained the keyword “poverty”, (2) in order to prevent confusion events from affecting market reaction, we exclude announcements confounded with other firm events such as suspension of enterprise trading in the event window, (3) we exclude announcements issued by firms with missing data. We finally obtained 108 TPA announcements of Chinese listed firms from 2016 to 2020. The daily stock returns and financial data of the sample firms were collected from the China Stock Market and Accounting Research (CSMAR) database.

3.2 Event study methodology

The event study methodology was proposed by Brown and Warner (1985) to quantify stock returns associated with specific events. According to the efficient market hypothesis, when a specific event occurs, its effect on wealth will be immediately reflected in the firm’s stock price. Thus, the extent of this effect can be measured by capturing changes in stock prices during the event window. Adopting the event study to examine the influence of TPA announcement on the firm value has several advantages: first of all, the event study is based on objective stock market data, which makes the conclusion more convincing (Liu *et al.*, 2020). Secondly, based on the event study, we can capture the market reaction of the TPA announcement, which also reflects investors’ expectations of the firm’s future operating performance.

Consistent with Lam *et al.* (2016), this study adopted the market model to predict AR and set the estimation period for 175 trading days from day -180 to day -6 . The formula is as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

In Eq. (1), R_{it} represents the returns of stock i on day t . R_{mt} represents the returns of market portfolios on day t . In this relationship, α_i , β_i and ε_{it} represent the intercept of the stock i , slope, and error term on t day, respectively. We then used the least squares regression to estimate $\hat{\beta}_i$ and $\hat{\alpha}_i$ based on stock and market returns during the estimated period.

The abnormal returns AR_{it} for stock i on day t is calculated by:

$$AR_{it} = R_{it} - \left(\hat{\alpha}_i + \hat{\beta}_i R_{mt} \right) \quad (2)$$

In this study, N represents the number of TPA announcements in the sample. The mean abnormal return of the sample on day t is:

$$\overline{AR}_t = \sum_{i=1}^N \frac{AR_{it}}{N} \quad (3)$$

The cumulative abnormal returns (CAR) during the event window $[t_1, t_2]$ is:

$$\overline{CAR}_{[t_1, t_2]} = \sum_{t=t_1}^{t_2} \overline{AR}_t. \quad (4)$$

Abnormal returns are independent of each other, with a mean of 0 and variance $\hat{S}_e^2$. According to the central limit theorem, the sum of the standardised N abnormal returns is approximately normal, with a mean of 0 and variance N . Hence, the significance test of the mean abnormal return on day t is:

$$T_{AR} = \sum_{i=1}^N \frac{AR_{it} / \hat{S}_e^2}{\sqrt{N}} \sim N(0, 1) \quad (5)$$

The significance test for the CAR during the event period is calculated as:

$$T_{CAR} = \sum_{i=1}^N \frac{\sum_{t=t_1}^{t_2} AR_{it} / \sqrt{\sum_{t=t_1}^{t_2} \hat{S}_e^2}}{\sqrt{N}} \sim N(0, 1) \quad (6)$$

To eliminate the influence of outliers and prove the robustness of the results, we applied the Wilcoxon signed-rank test as a supplement (Liu *et al.*, 2020). This non-parametric test is suitable for testing the statistical significance of median abnormal returns. We indicated two-tailed p -values both in the Wilcoxon signed-rank test and t -tests, and hypothesised that abnormal returns are positive.

3.3 Cross-sectional regression analysis

Consistent with Liu *et al.* (2020), we constructed a cross-sectional regression model to analyse whether the observable types of TPA, firm ownership, and market environment may affect market reactions. The regression model is

$$\begin{aligned} CAR_{i,t} = & \beta_0 + \beta_1 METHOD_{i,t} + \beta_2 SOE_{i,t} + \beta_3 DEV_{i,t} + \beta_4 SIZE_{i,t-1} \\ & + \beta_5 CASH_{i,t-1} + \beta_6 TOP_{i,t-1} + \beta_7 ROE_{i,t-1} + YearDummies + \varepsilon_{i,t} \end{aligned} \quad (7)$$

In Eq. (7), $CAR_{i,t}$ is the cumulative abnormal returns of firm i during the event window (0, 2). $METHOD_{i,t}$ represents the way in which firms participate in the TPA. We classified TPA into industrial poverty alleviation (coded as 0) and charity poverty alleviation (coded as 1). The former is a TPA approach in which firms donate money and materials directly to poor people in impoverished areas, whilst the latter is another TPA approach in which firms use their own resources along with the actual conditions of poverty-stricken areas for industrial development. $SOE_{i,t}$ is a variable that equals 1 if a firm is ultimately controlled by the government, and 0 otherwise. $DEV_{i,t}$ represents the regional marketization level, which is measured by the NERI [3] index, and reflects the marketization process of 31 provinces, municipalities, and autonomous regions in China. Inspired by the research of Wang and Qian (2011), we adopted the marketization index score of the province in which a firm operates to represent the marketization level of the firm. If a firm operates in multiple provinces simultaneously, we adopted the score of its primary location.

In addition, we included control variables that may affect market valuation. Considering Lam *et al.* (2016), we make all control variables at $t - 1$. $SIZE_{i,t-1}$ is used to control the size of

the firm, which is calculated from the natural logarithm of the firm's total assets. $CASH_{i,t-1}$ represents the pool of resources available for firm donations and is calculated as the firm's cash and cash equivalents divided by total assets. $TOP_{i,t-1}$ represents the power of the controlling shareholders and is defined as the percentage of shares held by the largest shareholder. $ROE_{i,t-1}$ is used to control for the potential effect of a firm's prior performance on market reaction and is calculated as net profit divided by the average balance of shareholders' equity. Finally, we included dummy variables for the announcement year.

4. Results analysis

4.1 Market reaction to TPA

The cumulative average abnormal returns (CAAR) during the event window are shown in Figure 2, where the Abscissa T represents the event window of the TPA announcement and the Ordinate represents CAAR. The CAAR fluctuated around 0 in the five event windows before the TPA announcement, with CAAR negative two days before and the day before the announcement. The CAAR increased significantly on both day 1 and day 2, which initially shows that TPA announcement indeed increases a firm's market value. With the passage of event, the CAAR showed a gradual downward trend after TPA announcement, indicating that the impact of TPA announcement on firm value gradually decreased and returned to the normal level.

Table 1 shows the abnormal return results based on the market model. The mean abnormal return on day -1 was negative (-0.212%) and insignificant ($p > 0.1$). The mean abnormal returns for both days 1 and 2 were positive (0.538% and 0.315% , respectively) and significant ($p < 0.05$). The mean (median) CAR over the three-day event window (i.e. days 0 to 2) was 0.891% (0.471%), statistically significant at the 1% (5%) level. These results demonstrate once again that TPA increases a firm's market value. Therefore, H1 is supported.

4.2 Cross-sectional regression results

Table 2 presents the descriptive statistics and correlation analysis of all the variables. The mean and standard deviation of CAR reflect that there is little difference in cumulative

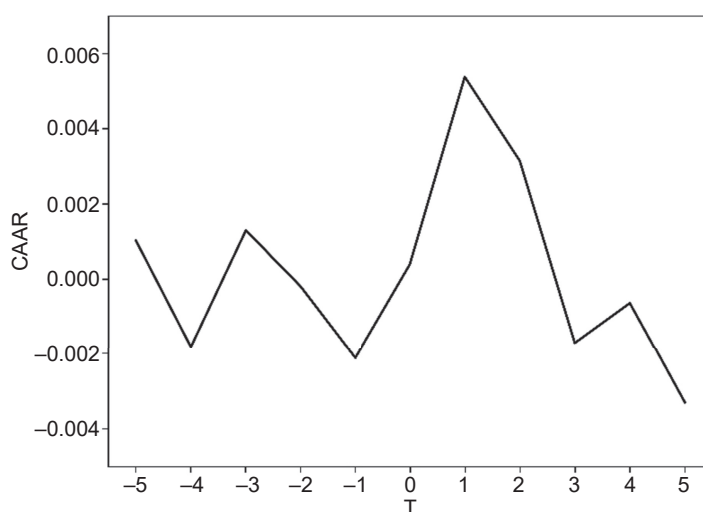


Figure 2.
Cumulative average
abnormal returns
(CAAR) for the 11 days
surrounding the event

Date	Day-1	Day 0	Day 1	Day 2	Day (0,1)	Day (0,2)
<i>N</i>	108	108	108	108	108	108
Mean abnormal return	-0.212%	0.039%	0.538%	0.315%	0.577%	0.891%
<i>t</i> -statistic	-1.040	0.233	2.288**	1.983**	2.228**	2.981***
Median abnormal return	-0.261%	0.177%	0.057%	0.205%	0.159%	0.471%
Wilcoxon signed-rank	-1.857*	0.546	1.082	1.778*	1.410	2.455**
<i>Z</i> -statistic						

Note(s): All tests are two-tailed; and $*p \leq 0.10$, $**p \leq 0.05$, $***p \leq 0.01$

	Mean	SD	1	2	3	4	5	6	7	8
1. CAR	0.009	0.031	1							
2. METHOD	0.602	0.492	0.165*	1						
3. SOE	0.491	0.502	-0.095	0.420***	1					
4. DEV	6.612	2.329	0.008	0.015	-0.073	1				
5. SIZE	22.93	1.300	0.022	0.049	0.056	0.080	1			
6. CASH	0.123	0.085	-0.075	-0.134	0.092	0.138	-0.045	1		
7. TOP	39.79	16.84	0.152	0.104	0.212**	0.215**	0.115	-0.007	1	
8. ROE	0.109	0.081	0.037	-0.012	-0.182*	-0.005	0.211**	0.134	0.343***	1
Note(s): Correlation significance is two-tailed; * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$										

Table 2.
Descriptive statistics
and correlation matrix

MD 60,12 3268 Table 3. Cross-sectional regression results (CAR based on market model)	Variables	Direction of hypothesis	Model 1	Model 2
	Intercept		−0.008 (−0.14)	−0.013 (−0.25)
	METHOD	+/−		0.018** (2.46)
	SOE	−		−0.018** (−2.41)
	DEV	+		−0.002 (−1.05)
	SIZE		0.001 (0.36)	0.001 (0.61)
	CASH		−0.023 (−0.65)	0.004 (0.11)
	TOP		0.000 (1.35)	0.000* (1.89)
	ROE		−0.015 (−0.36)	−0.042 (−0.99)
	Year		YES	YES
	N		108	108
	R-squared		0.076	0.160
	Adjusted R-square		−0.001	0.064
	F-value		1.02	1.67*
Note(s): * and ** denote significance at the 10% and 5% levels, respectively				

Date	Day-1	Day 0	Day 1	Day 2	Day (0,1)	Day (0,2)
N	108	108	108	108	108	108
Mean abnormal return	−0.304%	−0.060%	0.974%	0.684%	0.914%	1.599%
t-statistic	−0.735	−0.170	2.029**	2.167**	1.650	2.539**
Median abnormal return	−0.445%	0.094%	0.057%	0.590%	−0.038%	0.695%
Wilcoxon signed-rank	−1.413	0.077	0.812	2.185**	0.913	1.732*
Z-statistic						
Note(s): All tests are two-tailed; and * $p \leq 0.10$, ** $p \leq 0.05$						

Variables	Direction of hypothesis	Model 1	Model 2
Intercept		−0.015 (−0.13)	−0.032 (−0.30)
METHOD	+/−		0.043*** (2.88)
SOE	−		−0.043*** (−2.81)
DEV	+		−0.002 (−0.74)
SIZE		0.002 (0.48)	0.004 (0.73)
CASH		−0.049 (−0.66)	0.011 (0.14)
TOP		0.000 (0.50)	0.000 (1.07)
ROE		−0.067 (−0.77)	−0.128 (−1.48)
Year		YES	YES
N		108	108
R-square		0.088	0.195
Adjusted R-square		0.015	0.103
F-value		1.20	2.11**
Note(s): ** and *** denote significance at the 5% and 1% levels, respectively			

In addition, we also adopted other event windows (CAR(0, 1) and CAR(0, 3)) to test the robustness of the regression results. As shown in Table 6, the overall results are robust.

Finally, we adopt the stepwise regression model to assess the sensitivity of the results to the additional variables. As shown in Table 7, the sign and significance of each explanatory variable are robust. And the variance inflation factor (VIF) is added to the Model 4, all the VIF

	Market model		Market-adjusted model	
	CAR(0, 1)	CAR(0,3)	CAR(0, 1)	CAR(0,3)
Intercept	-0.027 (-0.59)	-0.054 (-0.76)	-0.055 (-0.58)	-0.102 (-0.73)
METHOD	0.014** (2.27)	0.022** (2.34)	0.036*** (2.83)	0.053*** (2.82)
SOE	-0.012* (-1.91)	-0.018* (-1.81)	-0.027** (-2.05)	-0.043** (-2.17)
DEV	-0.001 (-0.72)	-0.003 (-1.36)	-0.001 (-0.30)	-0.003 (-0.89)
SIZE	0.002 (0.95)	0.004 (1.17)	0.004 (0.92)	0.007 (1.17)
CASH	-0.004 (-0.13)	0.021 (0.43)	-0.011 (-0.17)	0.058 (0.62)
TOP	0.000 (1.11)	0.001* (1.93)	0.000 (0.62)	0.001 (1.19)
ROE	-0.037 (-1.03)	-0.008 (-0.14)	-0.113 (-1.51)	-0.051 (-0.46)
Year	YES	YES	YES	YES
N	108	108	108	108
R-squared	0.172	0.191	0.224	0.210
Adjusted R-square	0.077	0.098	0.135	0.119
F-value	1.81*	2.06**	2.52***	2.32**
Note(s): *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively				

Table 6.
Cross-sectional
regression results

MD 60,12					
	Model 1	Model 2	Model 3	Model 4 VIF	
3270	Intercept	0.016* (1.90)	0.018** (2.15)	0.023 (1.65)	−0.013 (−0.25)
	METHOD	0.014** (2.12)	0.018** (2.57)	0.018** (2.55)	0.018** (2.46)
	SOE		−0.013* (−1.88)	−0.013* (−1.92)	−0.018** (−2.41)
	DEV			−0.001 (−0.47)	−0.002 (−1.05)
	SIZE				0.001 (0.61)
	CASH				0.004 (0.11)
	TOP				0.000* (1.89)
	ROE				−0.042 (−0.99)
	Year	YES	YES	YES	YES
	N	108	108	108	108
	R-squared	0.093	0.124	0.126	0.160
	Adjusted R-square	0.049	0.072	0.065	0.064
	F-value	2.10*	2.38**	2.06*	1.67*
	Note(s): * and ** denote significance at the 10% and 5% levels, respectively				

Table 7.
Stepwise regressions
results (CAR based on
market model)

are less than 10, which indicates that our results are not affected by multicollinearity. The results of these robust tests confirm the robustness of the regression model.

5. Discussion and conclusion

Examining the impact of CSR initiatives on firm value from the emerging perspective of poverty alleviation is of great significance to practitioners and academics alike. This study extends the literature in this area by examining the market responses of Chinese firms to TPA announcements. Our empirical results indicate that TPA increases a firm’s market value. In other words, Chinese investors may believe that participation in TPA is a signal of increased profitability. This study further adopts signalling theory to investigate how different CSR operational factors affect the market value changes of Chinese listed firms that participate in TPA. We find that positive reaction is more significant when TPA announcements involve charity poverty alleviation rather than industrial poverty alleviation, and for privately owned firms rather than state-owned firms.

In addition, inconsistent with previous CSR research (Chen *et al.*, 2018; Wang and Qian, 2011), our conclusion does not support that market returns on TPA announcements are higher in high-marketization areas. The reasons may be as follows. First, in contrast to ordinary CSR, remote regions with low marketization levels are the key areas for the government to carry out the TPA strategy. Second, the CSRC proposes to provide firms in poverty-stricken areas more resources to participate in TPA. Thus, it is easier for firms with low marketization to establish a relationship with the government through TPA activities to obtain government subsidies and resources. Obtaining government subsidies also has a signal transmission effect, that is, the government recognises and encourages the TPA initiatives of firms, which compensates for the disadvantage of weak signal effects in these regions. Therefore, the marketization level cannot significantly moderate market reaction.

This study makes several contributions for both academics and practitioners. First, our research mainly enriches the literature on the social dimension of CSR by analysing the

emerging ways of TPA. Previous researches on CSR have focussed on the three dimensions of corporate economics, environment and philanthropy (Chen *et al.*, 2016; Dahlsrud, 2008; Jacobs *et al.*, 2010; Ho *et al.*, 2021). Our results demonstrate that, based on the Chinese context, participation in TPA increases the firms' market value, which establishes a new theoretical foundation for the positive association between corporate poverty alleviation and firm value. Therefore, this study not only provides empirical evidence for research on the consequences of poverty alleviation behaviour of firms in developing countries, but also complements the field of CSR research in developed countries.

Second, this study also documents the differentiation of market responses across different moderators, both TPA ways and firm ownership types. These findings enable TPA stakeholders to better understand whether and when engaging in TPA. Specifically, our conclusion reveals that market reactions to charity poverty alleviation are more positive than those to industrial poverty alleviation. Investors may regard industrial poverty alleviation as a kind of long-term risky investment, which will not bring short-term advantages to firms. As a result, it is feasible for firm managers to selectively implement charity poverty alleviation in China to improve their firm's value in the short term. Our conclusion also shows that market reactions are more positive to TPA announcements released by privately owned firms than to those released by state-owned firms. In this sense, privately owned firms actively shoulder CSR and reap more benefits from poverty alleviation efforts than state-owned firms. Our conclusions provide evidence that privately owned firms in developing countries practice social responsibility.

Finally, our findings provide policy implications for the government. In terms of poverty alleviation, in order to mobilise the enthusiasm of firms, the government should not only consider the targets of poverty alleviation, but also align poverty alleviation with a firm's interest. We believe that with the improvement in this aspect in the future, more poverty alleviation methods will also be recognised by investors and other stakeholders. This also provides a reference for poverty alleviation work in countries with similar backgrounds.

This study has several limitations. First, this study has only limited data on TPA announcements. Although there are many firms involved in TPA and disclose their TPA performance in their annual reports, only a few firms issue their TPA announcements, which limits our sample size. Second, this study was based on a unique time period. TPA was proposed by the Chinese central government during the 13th Five-Year Plan to lift all poor households out of absolute poverty by 2020. The economic consequences of poverty alleviation initiatives may also vary, given the different objectives of poverty alleviation strategies at different periods and the different motivations of firms to engage in poverty alleviation. Finally, the conclusion of this study only based on the institutional background of China, our results thus should be carefully extended to other countries with different institutional environments.

This study also provides several interesting directions for future research. Future studies can consider whether the impact of corporate TPA events varies from different sources, such as from the media or leading financial newspapers. Another interesting topic is to explore the impact of other types of poverty alleviation on firms, society and stakeholders, such as ecological poverty alleviation, education poverty alleviation and health poverty alleviation. In addition, it is also an interesting study to explore the economic consequences of foreign firms in TPA.

Notes

1. See the official news report at http://www.csrc.gov.cn/pub/newsite/zjhxwfb/xwdd/201809/t20180907_343892.html.
2. All donation data are derived from the firm's annual reports.
3. The index comes from the report on NERI index of marketization of Chinese provinces. (See the official news report at <http://www.neri.org.cn/3148.html>). We used the overall marketization index of Chinese provinces from 2008 to 2016 and calculated the score to 2020.

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