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Do financial asset holdings affect investor expectations under negative events? The shock of COVID-19 pandemic

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ABSTRACT

Holding excessive financial assets will lead to corporate financialization, making investors underestimate its risks in front of extreme benefits and the "reservoir effect" in boom periods, especially in rapid-growing emerging economies. Few studies have explored the investors' real perceptions and attitudes towards such risks when dealing with unexpected shocks. The 2019 novel coronavirus disease (COVID-19) provides new insights into these questions. Using event study method, this study examines how investors react to corporate financialization in the risk-release condition. First, we find that firms with more financial asset holdings experience significant lower market return during the COVID-19 pandemic. Second, we find that the pandemic-induced drop in stock returns is milder when firms hold more low-liquidity or safe financial assets, have higher solvency, are less exposed to COVID-19 pandemic and have better information environment. These findings show that the investors' attitude is widely negative towards corporate financialization when the negative shock comes and strong financial flexibility and good corporate governance can alleviate the risk. It implicates that the hidden risks of corporate financialization can be perceived by investors and responded by "voting with their feet" and the managers should be alert to it rather than just seeking financial benefits.

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1. Introduction

Corporate financialization is a global economic phenomenon (Krippner, 2005). Typically, it involves substantial and excessive investments in financial assets including entrust loans, financial derivatives and other kinds of financial asset holdings and portfolios. Financial assets are often used to supplement liquidity and manage risks

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(Guay & Kothari, 2003; Jin & Jorion, 2006), playing the role of "reservoir effect" (Duchin et al., 2017). However, due to the asymmetric market return among financial and physical sectors, firms tend to chase huge gains from excessive investment in financial assets (Demir, 2009; Orhangazi, 2008). This phenomenon is quite common in the emerging economy and possibly crowd out physical investments (Stockhammer, 2004; Tori & Onaran, 2018). Obviously, this type of investment decision often causes negative effects, such as increasing systematic risk and decreasing market efficiency (Wu et al., 2021), however, firms often underestimate these risks for chasing the high gains from these investments.

Investors may have asymmetric attitude towards the risks of corporate financialization under different economic situation. Given the limited research on investors' attitude towards corporate financialization, whether they can identify hidden risks remain a question worthy of studying. The extant researches discuss this issue on the steady economic period, where the hidden risks are not fully exposed and hard to be identified by investors. This study provides a valuable opportunity to examine this question based on the unprecedented shock of COVID-19 by exploring investors' expectations and attitudes towards corporate financialization.

COVID-19 pandemic provides an exogenous shock to investigate investors' attitude towards corporate financialization. First, as previously mentioned, economic prosperity is the premise of achieving proceeds from corporate financialization, and there is no doubt that the COVID-19 pandemic has severely hit global economy and not yet stopped (Guven et al., 2022). While in the short term, strict quarantine policies carried out by Chinese government may limit commercial activities, thus cause mass economic downtown and business failure (Carletti et al., 2020; Gormsen & Koijen, 2020; Jiang, 2020; Levine et al., 2021; Lyu et al., 2023). Second, the COVID-19 pandemic deteriorate the market efficiency by influencing the market volatility (Baker et al., 2020; Ozkan, 2021), accelerating the process of risk exposure. Third, drawing from the perspective of investors' emotion, negative feelings dominate the decision making of investors when the Black Swan event occurs (Loewenstein et al., 2001). COVID-19 pandemic is infectious and has high mortality rate (Guven et al., 2022), causing investors to depress their expectations on the value of financial asset holdings (Hsu et al., 2021; Hsu & Tang, 2022).

We use the stock market and financial data of Chinese listed firms to explore this research question for the following reasons. First, as the first economy entity hit by the unexpected pandemic, Chinese companies do not have enough time buffer to adjust their assets composition and risk appetite, which helps the researchers to rule out the endogenous possibilities that may influence their assets composition. Second, informal social norm including religion and cultural beliefs have been proved to affect corporate decisions and behaviors (Greif, 1994; Williamson, 2000; McGuire et al., 2012; Lyu & Chen, 2022). In China, Confucianism is an important social norm characterized by collectivism, harmonism and risk aversion (Chen et al., 2019). Chinese investors are more prone to have negative sentiments during the COVID-19 pandemic, leading to the herd effect. Because investors respond more intensively to risks of company's holding excessive financial assets, it is of significance for Chinese companies to identify and prevent these risks, especially during economic downturn.

Using event study method, this study examines how investors react to corporate financialization when the exposure risk is high under pandemic. Results of this empirical question are as follows. First, we find that firms with higher financial asset holdings experience significant lower market returns under the COVID-19 pandemic, indicating that the investors' attitude is widely negative towards corporate financialization and they are aware of the risks when the economy takes a sharp down. Second, we find that the pandemic-induced drop in stock returns is milder among firms that are with more low-liquidity or safe financial assets, having more solvency, being less exposed to the pandemic and having better information environment (Miao et al., 2022). These results support our above expectation that strong financial flexibility and good corporate governance reduce the risks originated from the excessive investments in financial assets. At last, our results exist after a series of robustness checks.

Our research contributes to prior literatures in the following aspects. First, we extend the researches on the consequences of corporate financialization. Related literatures find that corporate financialization may cause risks (Allen et al., 2019; Qi et al., 2021; Tori & Onaran, 2018) under the going concern and stable economy condition, we find that excessive holding of financial assets causes worse market performance when risks exposed. Second, our study also contributes to the research on COVID-19's economic impact. Extant literatures point out that high financial flexibility, strong investor relationship, comprehensive supply management plans and proper customer selection (Fahlenbrach et al., 2021; Ke et al., 2022; Neukirchen et al., 2022; Paul et al., 2021; Raj et al., 2022) are effective ways to overcome the pandemic's negative effect on stock liquidity (Baker et al., 2020; Baig et al., 2021). Our research indicates that asset structure should be taken into consideration to prevent the liquidity crisis. At last, we find influencing factors that moderate the relationship between corporate financialization and its impact on stock return. Strong financial flexibility and good corporate governance will release investors' negative response to corporate financialization.

The rest of this study is organized as follows. Section 2 conducts theoretical analysis and develops the hypotheses. Section 3 describes the data and model. Section 4 shows the empirical results. Finally, Section 5 presents the conclusions and discussions.

2. Theoretical analysis and hypothesis development

This study assumes that during the COVID-19 pandemic, firms with more financial asset holdings perform worse. The price drop caused by COVID-19 can be explained by decision theories in psychology. Kahneman (2003, 2011) characterizes two ways of thinking for human being to make risk decisions: intuitive perceptions and analytic assessments. People often use these two ways of thinking cooperatively and in parallel (Weber & Johnson, 2009; Xu & Thaldumrong, 2018). Stock price reaction offers a preview of the future economic impact of COVID-19 pandemic (Ramelli & Wagner, 2020). In the view of intuitive perception, stock price movement is affected by investor's sentiment and panic. The COVID-19 pandemic causes widespread negative sentiment, which leads to investor's anxiety and market turbulence (Hsu et al., 2021;

Hsu & Tang, 2022). The uncertainty and investor's fear lead to the suspension in economic activities and the price pressure, causing the downfall of stock markets (Sun et al., 2021). In the view of analytic assessments, stock prices move because investors update expectations on future cash flows or on discount rates (Brogaard et al., 2020; Berkman & Malloch, 2021; Chen et al., 2013). The former reflects the long-term market risk and the latter reflect the short-term market risk (Campbell & Vuolteenaho, 2004; Chen et al., 2013). The COVID-19 pandemic could alter stock price reaction through two fundamental channels: shocks to expected cash flows and/or shocks to discount rates (Brogaard et al., 2020; Berkman & Malloch, 2021; Chen et al., 2013; Miao et al., 2022).

In terms of future cash flows, studies have found that the COVID-19 pandemic deteriorates market liquidity and induces a price crash (Haddad et al., 2021; Kargar et al., 2021; O'Hara & Zhou, 2021). The price of financial assets may decline dramatically due to the market illiquidity, which undermines firm's expected investment income, especially for firms with more financial asset holding. Studies also show that firms with more financial asset holdings may crowd out physical investment, hence to stagnant or fragile growth, as well as long-term concerns for productivity (Tori & Onaran, 2018). Therefore, investors may reduce the demand for these assets because of the reduced expected cash flow.

In terms of discount rate, countercyclical risk aversion postulates that investors are more risk-averse during bust periods compared to boom periods (Barberis et al., 2001; Campbell & Cochrane, 1999; Huber et al., 2021). Elevated levels of risk aversion during a bust imply that individuals demand a higher risk premium. As previously mentioned, the COVID-19 pandemic damages the firm value due to either the declining investment return or the "crowd out effect". Thus, investors may devest these firms with gloomy growth prospect, amplifying downward pressure on stock prices. Above all, we posit that:

Hypothesis 1: When facing unprecedented shocks, firms with more financial asset holding perform worse.

3. Data, model and methodology

3.1. Methodology

We employ event study method for our research, whose inaugurator is Ball and Brown (1968). The principle of this method is to select a specific event according to a certain research purpose, and calculate the change of stock return for the sample listed firms before and after the event. This method is mainly used to test the response degree of stock price to a certain event or the investor's attitude towards this event. Therefore, the extra and abnormal return from a certain event, which is beyond normal returns, can be used to reflect the response degree of stock price to this event.

COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2. The pandemic was first identified in December 2019 in Wuhan, China, and it spread rapidly around the world. As a once-in-a century global

pandemic, COVID-19 has caused vast changes in society and economy. We choose it as a proper scenario to investigate if investors are aware of the adverse impact of corporate financialization and what their attitude towards it. As the event occurred later than the balance sheet date, which is fixed on December 31st in China, all of the financial decisions made in 2019, including financial asset holdings are historical and unmodifiable. The unpredictability of this epidemic means that listed firms are unlikely to adjust their financial structure to response to the epidemic. Therefore, based on the different level of financial asset holdings, the different market response indicates the investors' attitude and risk judgment towards corporate financialization under unexpected shocks.

3.2. Sample and data

For sample selection, we employ the A-share stocks in China from 2019 to early 2020 as the sample. First, we exclude firms in financial industry because the financial statements in the financial industry are greatly different from those in other industries. Second, we eliminate the observations with missing variables and acquire a sample of 2731 observations. Third, all the variables are winsorized at the 1% level to alleviate the impact of extreme values. Data used are acquired from the Chinese Stock Market and Accounting Research Database (CSMAR).

3.3. Model and variables

We run OLS regressions on cross-sectional data, and the baseline regression model is shown in Equation (1) as follows:

$$\mathrm{CAR_i} = \beta_0 + \beta_1 \mathrm{Fin_i} + \beta \mathrm{Controls_i} + \mathrm{Industry\ FE} + \mathrm{Province\ FE} + \varepsilon_i \qquad (1)$$

where dependent variable CAR_i represents the Cumulative Abnormal Return, independent variable Fin_i represents the financial asset holdings. $Controls_i$ is a matrix of control variables. In addition, we also control the industry and province fixed effect to control the unobservable factors associated with the industry and province. Standard error is fixed by robust standard error. $\varepsilon_{i,t}$ is the residual of the model.

Dependent variable CAR_i is calculated according to Ball and Brown (1968) and Chen et al. (2005). First, we set 7 days around the event date January 20th 2020 as the event study window, namely [-3, +3], and then we estimate the daily abnormal stock returns based on the estimation period [-210, −10]. Second, we run the regression model $\mathrm{R_{it}} = \alpha_i + \beta_i \mathrm{R_{mt}} + \varepsilon_{it}$, in which the R_{it} and R_{mt} represents the return of stock i and market portfolio, respectively. Third, after obtaining the estimated values $\hat{\alpha}_i$ and $\hat{\beta}_i$, we calculate the daily abnormal return (AR) in event window [-3, +3]. Finally, we add up ARs in 7 days and then we get cumulative abnormal return (CAR). It should be noted that all the days here are stock trading days, instead of natural days.

Independent variable Fin_i is the ratio of financial assets to total assets at the end of 2019. The financial assets here is calculated as the total value of trading securities, held-to-maturity investments, available-for-sale financial assets, investment real estates, derivative financial assets, Loans and payments on behalf.

Table 1. Variables description.

Type	Variable	Definition
Dependent	CAR	Cumulative abnormal return, which is calculated according to Ball and Brown (1968) and Chen et al.,(2005). See details in Section 3.3.
Independent	Fin	Financial asset holdings, which is a ratio of financial assets to total assets at the end of year. See details in Section 3.3.
Control	Size	The natural logarithm of total assets at the end of year
	Lev	A ratio of total liabilities to total assets at the end of year
	Roa	A ratio of net profit during the year to total assets at the end of year
	Ppe	A ratio of fixed assets to total assets at the end of year
	Mb	A ratio of market value to book value at the end of year
	Cashholding	A ratio of cash in hand to total assets at the end of year
	Beta	The beta value collected from CAPM model
	Listage	The firm's listing age, and its calculation formula is ln(number of days since its listing/365 + 1).
	Soe	The nature of property rights, which is a dummy variable that equals 1 if the firm is state-owned, and otherwise 0.

Source: The Authors.

$Controls_i$ is a matrix of control variables referred to Harford (1999).We control for the natural logarithm of total assets (*Size*), the ratio of total liabilities to total assets (*Lev*), the ratio of net profit to total assets (*Roa*) and the ratio of fixed assets to total assets (*Ppe*). These four control variables are financial characteristics of the firm and they are traditional and common control variables in Chinese studies. Besides, we control for the ratio of net assets to the firm's market value (*Mb*) and the beta value collected from CAPM model (*Beta*). These two control variables may affect the firm's market performance and are frequently used in study of asset pricing, such as Fama and MacBeth (1973) and Liu et al. (2019). In the meantime, we also control for the ratio of cash in hand to total assets (*Cashholding*) to control the asset liquidity, based on the findings of previous literature that the epidemic will affect the liquidity of firms (Baker et al., 2020; Baig et al., 2021). We also control for the nature of property rights (*Soe*, equals one if state-owned, and zero otherwise) and the reason for controlling this variable is that there are significant differences in governance structure and management mode between state-owned and non-state-owned firms in China, thus the risks they face are also very different. The firm's listing age (*Listage*) is also controlled (Table 1).

3.4. Descriptive statistics and analysis

The summary statistics of the variables are presented in Table 2. The dependent variable *CAR* has a mean value of approximately 0 and median of −0.007, which indicates that the COVID-19 pandemic negatively hit more than half of the firms within the window. That is, although certain industries, such as the medical industry and the information and communication industry, benefit from the pandemic, it is a severe crisis for most industries. The independent variable *Fin* has a mean value of 0.054 and median of 0.011, which indicates that more than half of firms have financial assets and the average proportion is about 5%. In addition, the distribution of all the control variables is comparable to the previous studies.

Table 2. The summary statistics of variables.

Variables	Observation	Mean	Std.	Min	25%	50%	75%	Max
CAR	2731	0.000	0.070	−0.177	−0.036	−0.007	0.024	0.274
Fin	2731	0.054	0.092	0.000	0.000	0.011	0.063	0.465
Size	2731	22.530	1.3450	19.83-	21.600	22.370	23.300	26.450
Lev	2731	0.446	0.203	0.066	0.290	0.435	0.593	0.910
Roa	2731	0.027	0.086	−0.429	0.012	0.033	0.065	0.197
Ppe	2731	0.213	0.161	0.001	0.084	0.185	0.307	0.698
Mb	2731	2.234	2.494	0.296	0.958	1.517	2.519	17.490
Cashholding	2731	0.161	0.111	0.013	0.084	0.133	0.206	0.557
Beta	2731	1.126	0.248	0.439	0.971	1.129	1.291	1.718
Listage	2731	13.200	8.233	0.515	5.003	12.130	21.150	27.36
Soe	2731	0.370	0.483	0.000	0.000	0.000	1.000	1.000

Source: The Authors.

4. Empirical results and analysis

4.1. Baseline regression

Baseline regression explores the effect of the financial asset holdings on investor expectations under unprecedented public health crisis, and the results are shown in Table 3.

As Table 3 shows, regression (1) to (4) represents various situations with or without controlling of industry fixed effects and province fixed effects. The results of the regressions show, all of the independent variables *Fin* have significantly negative coefficients (-0.050, −0.036, −0.054, −0.040 in regression 1 to 4, respectively). This indicates that the existing financial asset holdings can negatively affect investor expectations, and firms with more financial asset holdings perform worse when facing unprecedented shocks. It further illustrates that investors perceptive the risk of excessive financialization and have a negative attitude towards it. Hypothesis 1 is proved.

4.2. Cross-sectional heterogeneity

Although the existing financial asset holdings will affect investor expectations and risk judgments, the main result in Table 3 does not explore the underlying mechanism. Thus, we further employ the test of cross-sectional heterogeneity to figure it out and strengthen the validity of our findings.

4.2.1. Liquidity and safety

Financial assets classification affects investors' perception of corporate financialization. We classify financial assets based on the liquidity and safety. We argue that firms with more current or risky financial assets perform worse than their counterparts during the COVID-19 pandemic. Firstly, the price and trade volume of these financial assets are more sensitive to market illiquidity and dislocation and are more likely to induce a price crash (Duchin et al., 2017) . Secondly, current financial assets and risky financial assets are more likely to be held for short term capital gains and depress physical investment accumulation (Tori & Onaran, 2018; Qi et al., 2021). Thus, investors may underprice these firms for short-term investment return and long-term growth prospect.

Table 3. The effect of the financial asset allocation structure on investor expectations.

Variables	(1) CAR	(2) CAR	(3) CAR	(4) CAR
Fin	**−0.050*****	**−0.036****	**−0.054*****	**−0.040****
	(−3.26)	**(−2.35)**	**(−3.46)**	**(−2.54)**
Size	0.004***	0.004***	0.003**	0.004***
	(2.71)	(2.98)	(2.51)	(2.78)
Lev	−0.016*	−0.013	−0.013	−0.009
	(−1.70)	(−1.33)	(−1.40)	(−0.94)
Mb	0.002***	0.002***	0.002***	0.002***
	(2.93)	(2.96)	(2.85)	(2.78)
Roa	0.159***	0.147***	0.163***	0.152***
	(8.16)	(7.57)	(8.35)	(7.81)
Ppe	−0.011	−0.026**	−0.005	−0.022**
	(−1.29)	(−2.54)	(−0.60)	(−2.22)
Cashholding	−0.004	−0.003	−0.003	−0.002
	(−0.31)	(−0.21)	(−0.24)	(−0.17)
Beta	0.056***	0.047***	0.055***	0.047***
	(10.34)	(8.31)	(10.16)	(8.11)
Listage	0.000	0.000	0.000*	0.000*
	(1.25)	(1.15)	(1.72)	(1.70)
Soe	−0.009***	−0.005	−0.008**	−0.004
	(−2.83)	(−1.49)	(−2.34)	(−1.15)
Constant	−0.137***	−0.137***	−0.136***	−0.135***
	(−4.70)	(−4.62)	(−4.64)	(−4.56)
Observations	2731	2731	2731	2731
Adj R-squared	0.069	0.100	0.081	0.112
Industry FE	No	Yes	No	Yes
Province FE	No	No	Yes	Yes
Robust SE	Yes	Yes	Yes	Yes

This table represents the effect of the financial asset holdings on investor expectations. The dependent variable car represents cumulative abnormal return, which reflects the investor's attitude and risk judgment towards the event. The independent variable fin represents the financial asset holdings and its coefficient is our main concern. All variables are defined in Section 3.3. All continuous variables are winsorized at the top and bottom 1%. All of the regressions are performed on cross-sectional data, so time fixed effect is not controlled.
Note: Standard error is modified by robust standard error. T-statistics are reported in brackets below the coefficients. ***, **, * denote significance at 1%, 5%, and 10% level, respectively.
Source: The Authors.

We define liquidity variable as the proportion of current financial assets in total financial assets and safety variable as the proportion of cash holding in total financial assets. Current financial assets are the sum of trading securities and derivative financial assets. We divide the liquidity variable and the safety variable into two groups based on their median and generate two dummy variables. We separately run the regressions using these dummy variables and use chow test to determine whether the variable that we are concerned about is statistically significant between the two groups.

As Table 4 regressions (1) and (2) show, the independent variable *Fin*, is only significantly negative in regression 1(-0.052 with a T-value of −2.57 in regression 1, and −0.025 with a T-value of −0.85 in regression 2, respectively). This indicates that the negative effect of corporate financialization only exists in firms holding more high current financial assets. The further result of chow test shows that the empirical P-value is 0.000. This means that the negative effect of corporate financialization on high liquidity structure sample is significantly greater than that on low liquidity structure sample. The results of Table 4 regressions (3) and (4) show that,

Table 4. The heterogeneous effect of liquidity or safety.

Variables	(1) High liquidity structure CAR	(2) Low liquidity structure CAR	(3) Safe structure CAR	(4) Risky structure CAR
Fin	**−0.050*** **	**−0.036** **	**−0.054*** **	**−0.040** **
	(−3.26)	**(−2.35)**	**(−3.46)**	**(−2.54)**
Size	0.004***	0.004***	0.003**	0.004***
	(2.71)	(2.98)	(2.51)	(2.78)
Lev	−0.016*	−0.013	−0.013	−0.009
	(−1.70)	(−1.33)	(−1.40)	(−0.94)
Mb	0.002***	0.002***	0.002***	0.002***
	(2.93)	(2.96)	(2.85)	(2.78)
Roa	0.159***	0.147***	0.163***	0.152***
	(8.16)	(7.57)	(8.35)	(7.81)
Ppe	−0.011	−0.026**	−0.005	−0.022**
	(−1.29)	(−2.54)	(−0.60)	(−2.22)
Cashholding	−0.004	−0.003	−0.003	−0.002
	(−0.31)	(−0.21)	(−0.24)	(−0.17)
Beta	0.056***	0.047***	0.055***	0.047***
	(10.34)	(8.31)	(10.16)	(8.11)
Listage	0.000	0.000	0.000*	0.000*
	(1.25)	(1.15)	(1.72)	(1.70)
Soe	−0.009***	−0.005	−0.008**	−0.004
	(−2.83)	(−1.49)	(−2.34)	(−1.15)
Constant	−0.137***	−0.137***	−0.136***	−0.135***
	(−4.70)	(−4.62)	(−4.64)	(−4.56)
Observations	1328	1403	1360	1371
Adj R-squared	0.132	0.104	0.114	0.113
Industry FE	YES	YES	YES	YES
Province FE	YES	YES	YES	YES
Robust SE	YES	YES	YES	YES
Chow Test	P = 0.000***		P = 0.000***	

This table represents the heterogeneous effect of liquidity or safety. Regression 1 and 2 are regressed on High/Low liquidity structure of financial assets sample, respectively. Regression 3 and 4 are regressed on Safe/Risky structure of financial assets sample, respectively. We perform Chow test to figure out whether there is statistically significant difference between two groups. The dependent variable car represents cumulative abnormal return, which reflects the investor's attitude and risk judgment towards the event. The independent variable fin represents the financial asset holdings and its coefficient is our main concern. All variables are defined in Section 3.3. All continuous variables are winsorized at the top and bottom 1%. All of the regressions are performed on cross-sectional data, so time fixed effect is not controlled.

Note: Standard error is modified by robust standard error. T-statistics are reported in brackets below the coefficients. ***, **, * denote significance at 1%, 5%, and 10% level, respectively.

Source: The Authors.

the independent variable *Fin*, is only significantly negative in regression 4(0.012 with a T-value of 0.16 in regression 3, and −0.043 with a T-value of −2.19). The result of chow test shows that the empirical P-value is 0.000, which is significant at the 1% level. This means that investors underprice firms with more risky financial assets. Investors underprice these firms due to worse liquidity condition and gloomy growth prospect.

4.2.2. Solvency

We believe that solvency also affects investors' expectation on financial asset holdings. Firms that have higher solvency are better at coping with unexpected events and boosting investors' confidence about future payoff. We use financing constrains and ownership to proxy for solvency. On the one hand, compared to financially

Table 5. The heterogeneous effect of solvency.

Variables	(1) High financing constrains CAR	(2) Low financing constrains CAR	(3) SOE CAR	(4) Non-SOE CAR
Fin	**−0.046****	**−0.025**	**−0.010**	**−0.045****
	(−2.08)	**(−1.09)**	**(−0.38)**	**(−2.39)**
Size	0.005**	0.002	−0.002	0.008***
	(2.56)	(0.91)	(−1.40)	(3.89)
Lev	−0.007	−0.008	0.007	−0.018
	(−0.49)	(−0.58)	(0.55)	(−1.31)
Mb	0.003***	0.001	−0.002	0.003***
	(2.84)	(0.89)	(−1.53)	(3.76)
Roa	0.141***	0.159***	0.138***	0.149***
	(4.72)	(6.07)	(2.97)	(6.59)
Ppe	−0.009	−0.035***	−0.050***	0.001
	(−0.55)	(−2.62)	(−3.63)	(0.08)
Cashholding	−0.013	0.020	−0.001	−0.002
	(−0.67)	(0.99)	(−0.05)	(−0.11)
Beta	0.054***	0.037***	0.033***	0.050***
	(6.09)	(4.82)	(3.87)	(6.57)
Listage	0.000	−0.000	0.000	0.000
	(0.30)	(−0.61)	(0.90)	(0.28)
Soe	−0.006	−0.003	–	–
	(−1.19)	(−0.71)	–	–
Constant	−0.179***	−0.073	0.021	−0.230***
	(−4.02)	(−1.51)	(0.47)	(−5.33)
Observations	1360	1371	1010	1721
Adj R-squared	0.110	0.122	0.113	0.119
Industry FE	YES	YES	YES	YES
Province FE	YES	YES	YES	YES
Robust SE	YES	YES	YES	YES
Chow Test	P = 0.003***		P = 0.000***	

This table represents the heterogeneous effect of solvency. Regression 1 and 2 are regressed on High/Low financing constrain sample, respectively. Regression 3 and 4 are regressed on SOE/none-SOE sample, respectively. We perform Chow test to figure out whether there is statistically significant difference between two groups. The dependent variable car represents cumulative abnormal return, which reflects the investor's attitude and risk judgment towards the event. The independent variable fin represents the financial asset holdings and its coefficient is our main concern. All variables are defined in Section 3.3. All continuous variables are winsorized at the top and bottom 1%. All of the regressions are performed on cross-sectional data, so time fixed effect is not controlled.

Note: Standard error is modified by robust standard error. T-statistics are reported in brackets below the coefficients. ***, **, * denote significance at 1%, 5%, and 10% level, respectively.

Source: The Authors.

constrained firms, financially unconstrained firms have greater financial flexibility and can more easily fund a cash flow shortfall resulting from the COVID-19 pandemic (Fahlenbrach et al., 2021; Khan, 2022). On the other hand, SOEs are an important instrument for the government to intervene in the economy. Due to the soft budget constraint and paternalism (Allen et al., 2005; Brandt & Li, 2003), government and state-owned banks can provide financial support to SOEs in a variety of ways, making them less likely to encounter capital shortage. Thus, SOEs are more likely to survive under the COVID-19 pandemic.

We use SA Index to measure financing constrains and divide it based on its median. And we classify firm as the stated-owned enterprise if its ultimate controlling shareholder is the local or central State-owned Assets Supervision and Administration Commission.

As is shown in Table 5 regressions (1) and (2), the independent variable *Fin* is only significantly negative in regression 1(-0.046 with a T-value of −2.08 in regression 1, and −0.025 with a T-value of −1.09 in regression 2). The chow test shows that the empirical P-value is 0.0033, significant at 1% level. This indicates that the negative effect of corporate financialization exists in high financing constraints sample. Financially unconstrained firms have greater financial flexibility and investors price it positively when evaluating the negative effect of COVID-19 pandemic on firms. The results of Table 5 regressions (3) and (4) show that, the independent variable *Fin* is significantly negative in regression 4(-0.010 with a T-value of −0.38 in regression 3 and −0.045 with a T-value of −2.39 in regression 4). The chow test shows that the empirical P-value is 0.000, which is significant at 1% level. This indicates that the market may expect the government to provide financial support for state-owned enterprises during the crisis, dampening the impact of COVID-19 pandemic on these firms.

4.2.3. The exposure to the COVID-19 pandemic

Differently from typical macroeconomic shocks, the COVID-19 pandemic has hit different firms with widely different severity (Carletti et al., 2020). Distress is more frequent for small firms since they usually have worse pre-2020 finances and instable supply chains (Ding et al., 2021). In addition, firms belonging to some industries, like manufacturing and wholesale trading, have been severely affected by the lockdown and the social distancing requirements triggered by the pandemic. While others, such as those in high-tech industries, have even thrived in the midst of the lockdown (Carletti et al., 2020).

We use the logarithm of total assets to measure firm size and divide it based on its median. We define computer, communication and other electronic equipment manufacturing, information transmission, software and information technology services and scientific research and technology services as high-tech industries.

As Table 6 regressions (1) and (2) show, the independent variable *Fin* is significantly negative in regression 2 (-0.052 with a T-value of −2.52), while it is not significant in regression 1(-0.017 with a T-value of −0.68). The chow test shows that the empirical P-value is 0.000, indicating that the negative impact of corporate financialization merely exists in small firms. This is because large firms usually have better pre-2020 finances and can better cope with the COVID-19 pandemic. The results also show that the negative shock triggered by the COVID-19 pandemic only affects traditional industries (-0.060 with a T-value of −1.22 in regression 3 and −0.041 with a T-value of −2.55 in regression 4). The chow test shows that the empirical P value is 0.090, which is significant at 10% level. The COVID-19 pandemic boosts the emergence and development of new business models, such as digital finance. Thus, some high-tech industries have even thrived during the crisis.

4.2.4. The information environment

Due to the information asymmetry, investors face difficulties in gathering information about expected future payoffs of firms. Transparent information environment can

Table 6. The heterogeneous effect of the exposure to the COVID-19 pandemic.

Variables	(1) Big firms CAR	(2) Small firms CAR	(3) Traditional industry CAR	(4) High technology industry CAR
Fin	**−0.017**	**−0.052****	**−0.060**	**−0.041****
	(−0.68)	**(−2.52)**	**(−1.22)**	**(−2.55)**
Size	−0.003	0.013***	0.023***	0.000
	(−1.41)	(3.64)	(5.87)	(0.14)
Lev	0.008	−0.025*	−0.042	0.001
	(0.61)	(−1.81)	(−1.46)	(0.06)
Mb	0.003**	0.003**	0.005***	0.001
	(2.53)	(2.55)	(2.88)	(1.01)
Roa	0.162***	0.141***	0.201***	0.139***
	(6.00)	(5.15)	(3.75)	(6.98)
Ppe	−0.028**	−0.009	0.018	−0.028***
	(−2.20)	(−0.52)	(0.49)	(−2.77)
Cashholding	0.013	−0.013	−0.014	−0.001
	(0.67)	(−0.67)	(−0.39)	(−0.09)
Beta	0.023***	0.065***	0.049***	0.036***
	(2.97)	(7.71)	(2.77)	(5.85)
Listage	0.000	0.000	0.001	0.000
	(0.32)	(1.46)	(0.93)	(1.63)
Soe	−0.006	−0.003	−0.038***	0.001
	(−1.52)	(−0.54)	(−4.36)	(0.26)
Constant	0.036	−0.360***	−0.543***	−0.049*
	(0.77)	(−4.55)	(−6.46)	(−1.68)
Observations	1360	1371	388	2338
Adj R-squared	0.125	0.123	0.187	0.102
Industry FE	YES	YES	YES	YES
Province FE	YES	YES	YES	YES
Robust SE	YES	YES	YES	YES
Chow Test	P = 0.000***		P = 0. 090*	

This table represents the heterogeneous effect of the exposure to the COVID-19 pandemic. Regression 1 and 2 are regressed on Big/Small firm sample, respectively. Regression 3 and 4 are regressed on Traditional/High-tech industry sample, respectively. We perform Chow test to figure out whether there is statistically significant difference between two groups. The dependent variable car represents cumulative abnormal return, which reflects the investor's attitude and risk judgment towards the event. The independent variable fin represents the financial asset holdings and its coefficient is our main concern. All variables are defined in Section 3.3. All continuous variables are winsorized at the top and bottom 1%. All of the regressions are performed on cross-sectional data, so time fixed effect is not controlled.

Note: Standard error is modified by robust standard error. T-statistics are reported in brackets below the coefficients. ***, **, * denote significance at 1%, 5%, and 10% level, respectively.

Source: The Authors.

overcome investor limited attention issues, and leads to trading and pricing being more efficient (Bonsall et al., 2020; Carpenter et al., 2020). We choose stock synchronicity and institutional ownership as the indicators of information environment. Stock synchronicity reflects stock price informativeness (Kim et al., 2021). Stock price reaction mirrors the future economic impact of the COVID-19 pandemic. Low stock synchronicity means firm responds quickly to the negative effect caused by the COVID-19 pandemic. Institutional investors have long-run strategic interests in and commitments to a firm, and they have professional knowledge. Firms that have large, strategic institutional investors usually have good corporate governance and internal control. Market prices these characteristics positively when evaluating the impact of COVID-19 cases on the firm (Ding et al., 2021). In addition, institutional investors are less likely to be affected by the herd effect and investor fear (Ajinkya et al., 2005), which amplifies the noise trading and market turmoil (Sun et al., 2021). We calculate

Table 7. The heterogeneous effect of the information environment.

Variables	(1) High synchronicity CAR	(2) Low synchronicity CAR	(3) High institutional ownership CAR	(4) Low institutional ownership CAR
Fin	**−0.005**	**−0.053****	**−0.015**	**−0.058****
	(−0.24)	**(−2.57)**	**(−0.68)**	**(−2.51)**
Size	−0.002	0.010***	0.004**	0.006**
	(−1.12)	(4.30)	(2.57)	(2.28)
Lev	−0.008	−0.004	−0.006	−0.015
	(−0.60)	(−0.25)	(−0.48)	(−1.00)
Mb	0.001	0.003***	0.003***	0.002
	(0.93)	(2.77)	(3.21)	(1.32)
Roa	0.131***	0.155***	0.132***	0.171***
	(4.27)	(6.18)	(4.92)	(6.06)
Ppe	−0.030**	−0.016	−0.023*	−0.018
	(−2.23)	(−1.07)	(−1.75)	(−1.14)
Cashholding	−0.005	0.030	0.003	0.009
	(−0.32)	(1.40)	(0.16)	(0.42)
Beta	0.035***	0.039***	0.034***	0.056***
	(3.92)	(4.92)	(4.25)	(6.65)
Listage	0.000*	−0.000	0.000	0.001*
	(1.70)	(−0.55)	(0.21)	(1.92)
Soe	0.002	−0.012***	0.002	−0.003
	(0.36)	(−2.65)	(0.40)	(−0.58)
Constant	0.006	−0.262***	−0.145***	−0.196***
	(0.16)	(−5.22)	(−3.64)	(−3.47)
Observations	1343	1357	1358	1370
Adj R-squared	0.108	0.129	0.099	0.119
Industry FE	YES	YES	YES	YES
Province FE	YES	YES	YES	YES
Robust SE	YES	YES	YES	YES
Chow Test	P = 0.029**		P = 0.003***	

This table represents the heterogeneous effect of the information environment. Regression 1 and 2 are regressed on High/Low stock synchronicity sample, respectively. Regression 3 and 4 are regressed on High/Low institutional ownership sample, respectively. We perform Chow test to figure out whether there is statistically significant difference between two groups. The dependent variable car represents cumulative abnormal return, which reflects the investor's attitude and risk judgment towards the event. The independent variable fin represents the financial asset holdings and its coefficient is our main concern. All variables are defined in Section 3.3. All continuous variables are winsorized at the top and bottom 1%. All of the regressions are performed on cross-sectional data, so time fixed effect is not controlled.

Note: Standard error is modified by robust standard error. T-statistics are reported in brackets below the coefficients. ***, **, * denote significance at 1%, 5%, and 10% level, respectively.

Source: The Authors.

stock synchronicity and institutional ownership and divide them based on their median.

The results of Table 7 regressions (1) and (2) show that, firms with low stock synchronicity suffer more from the COVID-19 pandemic (-0.005 with a T-value of −0.24 in regression 1 and −0.053 with a T-value of −2.57 in regression 2). The chow test shows that the empirical P-value is 0.029, which is significant at 5% level. This means that firms with low stock synchronicity respond to the COVID-19 pandemic more quickly and have a more severe stock price drop. The results of Table 7 regressions (3) and (4) show that the firms with high institutional ownership have a milder pandemic-induced stock drop (-0.015 with a T-value of −0.68 in regression 3 and −0.058 with a T-value of −2.51 in regression 4). The chow test shows that the empirical P-value is 0.003, which is significant at 1% level. This means that firms with large, strategic institutional investors usually have good internal control, alleviating the negative shock induced by the COVID-19 pandemic.

4.3. Robustness test

4.3.1. Alternative measurement

A common way to test whether the results of a study is robust is to replace the measurement of variables. We use alternative measurement to replace the independent and dependent variables in the main regression to see whether the results are robust.

First, we expand the event window to [-4, +4] and [-5, +5] to see if the results will be affected by the specific window selection. We recalculate the CAR based on the event window [-4, +4] and [-5, +5], and get *CAR_win4* and *CAR_win5* for replacing the independent variable *CAR*.

Second, since the Spring Festival is the most important holiday in China, and the 2020 Spring Festival was on January 25, which is only 5 natural days away from the event day of January 20, the holiday effect will affect investor sentiment and optimistic expectations. In order to limit the impact of the holiday effect to the greatest extent, we calculated the placebo CAR value from 2002 to 2019 on January 20 of each year, and obtained 18 CAR values from 18 years. Then we run the regression to get the residual named *CAR_res*, and it is free from the interference of the factors that occurs year after year, including Spring Festival effect.

Third, we change the measurement of the financial asset holdings. Fin1 is defined as the ratio of financial assets to total assets, and the financial assets are total value of cash, held-to-maturity investments, trading securities, derivative financial assets, available-for-sale financial assets, long-term equity investments, interest receivables, dividend receivables. Fin2 is also defined as the ratio of financial assets to total assets, while the financial assets are total value of cash, held-to-maturity investments, derivative financial assets, short-term investments, trading securities, interest receivables, purchase of resale financial assets, long-term receivables.

The results of Table 8 regressions (1) and (2) show that, after expanding the event window, the coefficients of *Fin* are still significantly negative (-0.057 with T value of −2.83 in regression 1 and −0.093 with T value of −3.63 in regression 2), which indicates that the negative effect of financial asset holdings on investor expectations is not be affected by the specific window selection. Our results are robust.

The result of Table 8 regression (3) shows that, after eliminating the disturbing factors over the years, the coefficients of *Fin* is still significantly negative (-0.046 with T value of −1.97), which indicates that the negative effect of financial asset holdings and investor expectations is not influenced by the confounding factors, such as the holiday effect. It further indicates that COVID-19 pandemic changes the investors' risk judgement towards financial asset holdings. Our results are robust.

The results of Table 8 regressions (4) and (5) show that, after replacing the independent variable *Fin*, the coefficients of *Fin1* and *Fin2* are still significantly negative (-0.059 with T value of −4.53 in regression 4 and −0.051 with T value of −3.12 in regression 5), which indicates that alternative measurements of *Fin* will not change the main results of the bassline regression, and our results are robust.

Table 8. Robustness test: Alternative measurement.

Variables	(1) CAR_win4	(2) CAR_win5	(3) CAR_res	(4) CAR	(5) CAR
Fin	**−0.057*** **	**−0.093*** **	**−0.046** **		
	(−2.83)	**(−3.63)**	**(−1.97)**		
Fin1				**−0.059*** **	
				(−4.53)	
Fin2					**−0.051*** **
					(−3.12)
Size	0.003	0.015***	0.004**	0.004***	0.004***
	(1.62)	(6.71)	(2.33)	(3.19)	(2.88)
Lev	−0.000	−0.031**	−0.011	−0.014	−0.009
	(−0.01)	(−1.97)	(−0.86)	(−1.48)	(−0.95)
Mb	0.002**	0.004***	0.002*	0.002***	0.002***
	(2.54)	(3.88)	(1.80)	(2.96)	(2.81)
Roa	0.144***	0.271***	0.137***	0.153***	0.154***
	(5.59)	(8.25)	(5.14)	(7.79)	(7.86)
Ppe	−0.031**	−0.041**	−0.028**	−0.028***	−0.024**
	(−2.42)	(−2.52)	(−2.07)	(−2.70)	(−2.37)
Cashholding	−0.010	−0.025	−0.018	0.051***	0.048**
	(−0.52)	(−1.01)	(−0.85)	(3.04)	(2.45)
Beta	0.119***	0.086***	0.037***	0.048***	0.047***
	(16.17)	(9.00)	(4.37)	(8.31)	(8.14)
Listage	0.001***	0.001	0.002***	0.000*	0.000
	(2.73)	(1.51)	(7.58)	(1.77)	(1.47)
Soe	−0.008*	−0.014**	−0.003	−0.004	−0.004
	(−1.83)	(−2.50)	(−0.77)	(−1.13)	(−1.11)
Constant	−0.192***	−0.439***	−0.165***	−0.143***	−0.137***
	(−5.06)	(−8.82)	(−3.95)	(−4.85)	(−4.64)
Observations	2,731	2,731	2575	2731	2731
Adj R-squared	0.181	0.164	0.078	0.116	0.113
Industry FE	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES
Robust SE	YES	YES	YES	YES	YES

This table represents the robustness test of alternative measurement. We expand the event window to [-4, +4] and [-5, +5] to generate alternative dependent variables car_win4 and car_win5 to run the regression 1 and 2, respectively. The dependent variable car in regression 3 is replaced by car_res, which is the residual after eliminating the disturbing factors over the years. The independent variables fin in regression 3 and 4 are replaced by fin1 and fin2, respectively. Fin1 is defined as the ratio of financial assets to total assets, and the financial assets are total value of cash, held-to-maturity investments, trading securities, derivative financial assets, available-for-sale financial assets, long-term equity investments, interest receivables, dividend receivables. Fin2 is also defined as the ratio of financial assets to total assets, while the financial assets are total value of cash, held-to-maturity investments, derivative financial assets, short-term investments, trading securities, interest receivables, purchase of resale financial assets, long-term receivables.

Note: Standard error is modified by robust standard error. T-statistics are reported in brackets below the coefficients. ***, **, * denote significance at 1%, 5%, and 10% level, respectively.

Source: The Authors.

4.3.2. Quantile regression

Since OLS is the regression method based on the mean value, quantile regression will offer more information on different quantiles than OLS. As we previously mentioned, COVID-19 pandemic may not be bad news to all firms, and there are still a certain number of firms having positive CARs within the event window. Thus, a natural question is that do investors have same risk expectations and attitudes towards firms with different value of CAR? We run quantile regression on 10%, 30%, 50%, 70%, 90% quantiles to figure it out.

As shown in Table 9, all of the coefficients of *Fin* are all significantly negative, and the T value has experienced a drop first and then rise, which indicates that investors

Table 9. Robustness Test: Quantile regression.

Variables	(1) 10% CAR	(2) 30% CAR	(3) 50% CAR	(4) 70% CAR	(5) 90% CAR
Fin	**−0.037*** **	**−0.022** **	**−0.021***	**−0.025*** **	**−0.108*** **
	(−3.03)	**(−2.38)**	**(−1.90)**	**(−2.76)**	**(−5.06)**
Size	0.002**	0.001	0.001*	0.001	0.001
	(2.40)	(1.22)	(1.77)	(0.86)	(0.76)
Lev	−0.008	−0.007	0.001	−0.004	−0.010
	(−1.37)	(−1.15)	(0.26)	(−0.64)	(−0.72)
Mb	−0.001*	−0.001	0.001	0.002***	0.005***
	(−1.86)	(−0.88)	(1.51)	(3.60)	(7.93)
Roa	0.173***	0.136***	0.134***	0.134***	0.142***
	(10.65)	(8.30)	(8.64)	(7.48)	(5.50)
Ppe	−0.024***	−0.023***	−0.012**	−0.007	−0.052***
	(−3.81)	(−3.56)	(−1.99)	(−1.07)	(−3.18)
Cashholding	−0.000	−0.006	−0.005	−0.003	−0.017
	(−0.02)	(−0.77)	(−0.58)	(−0.33)	(−0.74)
Beta	0.047***	0.035***	0.036***	0.032***	0.061***
	(10.20)	(9.00)	(10.29)	(8.52)	(6.47)
Listage	0.001***	0.000	0.000	0.000	0.001**
	(4.77)	(1.29)	(1.06)	(1.19)	(2.10)
Soe	0.003*	0.005**	−0.002	−0.008***	−0.019***
	(1.68)	(2.27)	(−1.34)	(−3.38)	(−3.92)
Constant	−0.256***	−0.134***	−0.106***	−0.075***	−0.059
	(−9.92)	(−3.01)	(−5.57)	(−3.17)	(−1.25)
Observations	2731	2731	2731	2731	2731
Adj R-squared	0.123	0.076	0.060	0.074	0.131
Industry FE	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES
Robust SE	YES	YES	YES	YES	YES

This table represents the results of quantile regressions. We run quantile regressions on 10%, 30%, 50%, 70%, 90% quantile. The dependent variable car represents cumulative abnormal return, which reflects the investor's attitude and risk judgment towards the event. The independent variable fin represents the financial asset holdings and its coefficient is our main concern. All variables are defined in Section 3.3. All continuous variables are winsorized at the top and bottom 1%. All of the regressions are performed on cross-sectional data, so time fixed effect is not controlled.

Note: Standard error is modified by robust standard error. T-statistics are reported in brackets below the coefficients. ***, **, * denote significance at 1%, 5%, and 10% level, respectively.

Source: The Authors.

are aware of the negative impact of excessive financial asset holdings, regardless of the value of CAR.

5. Conclusion and discussion

5.1. Conclusion

This study examines how investors react to corporate financial asset holdings when facing the unprecedented shock of COVID-19 pandemic. We find that firms with more financial asset holdings experience significant shaper drop in stock returns and the pandemic-induced drop is milder among firms holding more low-liquidity or safe financial assets, having higher solvency, being less exposed to COVID-19 pandemic and with better information environment. Our findings indicate that rational investors are able to identify the underlying risk of corporate financialization and then price it negatively. Therefore, managers face trade-offs when making asset investment decision. They need to balance the relationship between the proceeds from investing

in financial assets and the losses that may occur when confronting the economic downturn. Our findings shed light on the economic consequences of corporate financialization and put forward pitfalls that managers need to pay attention to when making asset investment decision.

5.2. Contributions to theory

Our study deepens the extant research on the risks arising from corporate financialization. There is abundant related literature referred to the causes and consequences of corporate financialization (Allen et al., 2019; Duchin et al., 2017; Du et al., 2017; Kliman & Williams, 2015; Qi et al., 2021; Stockhammer, 2004; Tori & Onaran, 2018), yet most of the conclusions of these studies are based on the going concern and stable economy condition. However, investors may hold completely different attitudes towards corporate financial asset holdings when facing the economic downturn. Given the fact that investors can respond quickly and timely to corporates financialization in economic downturn, our research indicates that excessive holding of financial assets may not be beneficial to the firm, and the hidden risks deserve more attention. Our study provides more evidence on corporate financialization from a new perspective and supplement the relevant research literature on the consequences of corporate financialization.

Our study also contributes to the extant research on COVID-19's economic impact, especially in the field of accounting and finance. Most extant studies have discussed the pandemic's negative effects on the stock markets, such as the stock liquidity, volatility and returns (Baker et al., 2020; Baig et al., 2021). Some researches reveal that the political interventions carried out by government, including epidemic prevention measures and economic stimulate packages, are found to be effective for alleviating the market turbulence (Feyen et al., 2021; Haddad et al., 2021; Kargar et al., 2021; O'Hara & Zhou, 2021; Wang et al., 2022). Some studies find that the corporates with high financial flexibility (Fahlenbrach et al., 2021), strong investor relationship (Neukirchen et al., 2022), comprehensive supply management plans (Paul et al., 2021; Raj et al., 2022) and proper customer selection (Ke et al., 2022) are less affected by liquidity crises. Our research finds that the Black Swan event like COVID-19 will influence investors' risk assessment and amplifies firm's liquidity risks, thus, firms need to take macro-economy condition into consideration when designing their asset structure.

What is more, we find influencing factors that moderate the relationship between corporate financialization and its impact on stock return. Firms that are with more low liquidity or safe financial assets, having more solvency, being less exposed to the pandemic and having better information environment tend to be less impacted by the COVID-19 shock while holding excessive financial assets. Strong financial flexibility and good corporate governance might release the tension between corporate financialization and investors' negative response during economic downturn. This finding enriches research on financial flexibility against risks (Khan, 2022).

5.3. Implications and limitations

There are serval possible implications of this study. First, the hidden risks of corporate financialization can be identified by investors and they respond by "voting with their feet". Investors are alert to risks, especially when major unexpected risks outbreak. So, while holding financial assets is considered to symbolize higher risks, investors respond with a quick negative market reaction under the Black Swan event. Second, the hidden risks of corporate financialization need to be wisely evaluated by managers. Investors' attitudes and expectations are the reflection of their judgment on risks. Managers are supposed to make a proper trade-off between gains and potential losses and prevent their over confidence on the returns of financialization. Third, entities and policy makers on the emerging markets should be vigilant on corporate financialization, which might lead to severer financial risks to a broader extent, thus it is necessary to control the scale of financial assets held by corporates.

We acknowledge some limitations of this research. First, our work mainly focuses on the short-term economic impact of COVID-19. In essence, it reflects the short-term attitude of investors towards the asset structure of firms when facing unexpected external shocks. However, the long-term effect has not been discussed that much. Further research could broaden the temporal and geographic scope of this study by breaking through the short-term perspective and conducting cross-country research, and give us more general enlightenments. Second, the risks corresponding to different types of financial assets have not been studied in detail. Financial assets, such as trading financial assets and available for sales are with different risk levels, whether investors can distinguish these differences and how they will respond to the risks need to be examined.

Authors' contributions

All authors equally contribute to the work and review the drafted manuscript for critical content. All authors approve the final version of the manuscript.

Disclosure statement

No potential conflict of interest was reported by the author.

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Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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