

Article

MSE Response during Times of Crisis: The Roles of Budgeting Micro Functions and Guanxi

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Abstract: This study explores how micro and small enterprises (MSEs) rely on and adapt their budgetary practices to guide their activities during times of crisis, specifically during the COVID-19 global pandemic that began in early 2020. While the existing literature has mainly focused on large enterprises during economic crises, this paper will specifically consider MSEs in Southeast China during and since the pandemic. The primary data were collected via an online survey distributed in Wenzhou municipality, with 397 responses included in the analysis. The results indicate that within the budgeting process, the micro functions of planning and performance evaluation had less importance during the pandemic while the importance placed on the function of resource allocation was unchanged. The findings suggest that MSEs during crises placed less importance on the budgeting process and more on guanxi-related considerations for maintaining financial liquidity, including customer and government relationship building. Our findings add a resource-based view of the capability of guanxi during times of crisis. In addition, the limitations and future research are discussed.

Keywords: management accounting; COVID-19 pandemic; guanxi; resource-based view; micro; small and medium-sized enterprises



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1. Introduction

The importance of micro, small, and medium sized businesses for socioeconomic sustainability is well documented [1–3]. Micro and Small Enterprises (MSEs) and Small and Medium Enterprises (SMEs) drive economic growth—a precursor to social sustainability—through innovation [4] and constitute a significant part of most economies [5]. SMEs support social sustainability by reducing unemployment and play a critical role in poverty reduction [6].

MSEs worldwide were affected by COVID-19 and the economic crisis it caused. According to their nature, MSEs may have limited cash flow and cash assets with which to weather extended periods of diminished revenue [7].

The responses of MSEs during periods of crisis, including how they manage their resources and their business tactics in response to the pandemic, may be material to their economic survivability; therefore, they are a relevant area of interest and the topic of this paper.

The existing literature regarding the response of firms' accounting activity adaptation during times of crisis is scarce [8] and needs further attention [9], and while there have been contributions more recently [10], micro and small enterprises' (MSEs) responses to crises are relevant and merit further investigation.

The Coronavirus Disease of 2019 (hereafter COVID-19) pandemic and the immensity of the economic impact on the commercial activity of firms of all sizes provide an opportunity to examine MSEs' responses within their management accounting practices. The importance of budgeting and the relationship between sound budgeting practices

and firm success is well established [11]. Further, as a result of globalization, the supply chain's interconnectivity between national and regional economies, and the pandemic reaching even the most remote parts of the globe, firms' reactions through their accounting and budgetary processes are highly relevant [12]. Importantly, with the relevance of the topic notwithstanding, the findings in the existing research lack a consensus regarding the effect of budgeting during periods of crisis, with some research indicating that less structured budgeting, in favor of a more decentralized mode of management control, may be beneficial [13]. This variance in budgeting can be explained by the resource-based view, which puts forward that managerial accounting can help identify and allocate resources and capabilities [14].

This study will examine the relationship between budgeting practices and crises, prior to and since the COVID-19 pandemic, on MSEs in Wenzhou in South-East China, an area known for its high level of commercial activity and for a preponderance of MSEs and SMEs [15]. Therefore, this study provides a more refined understanding of the capabilities—including the Chinese concept of *guanxi*, a term similar to networking or relationships but more extensive and prevalent in China—of MSEs to mitigate the economic consequences of the COVID-19 outbreak.

While MSEs are the backbone of the Chinese economy, accounting for eighty percent of employment [16] with a significant impact on economic growth, MSEs have difficulties accessing financial resources, which makes them vulnerable to crises such as COVID-19 [17]. Managerial accounting as a means to control and steer an MSE's finances during periods of crisis is ambivalent [18]. On the one hand, controls and budgets gained importance during economic crises [19]. On the other hand, companies might be better off without budgets [13].

2. Background and Review of Literature

2.1. COVID-19 Pandemic Crisis

There are differing views on what constitutes an economic crisis. However, usually, it is considered to be a substantial threat to an organization [20] characterized by resources that are inadequate to cope with the threat [21] in situations that necessitate a rapid response in unpredictable circumstances and a situation that lacks structure and clarity [22]. A crisis's effect on the national or regional economy is not limited to an organization or industry's competitiveness, mismanagement, or accidents [23].

The focus of inquiry in this study will be further narrowed to those changes in the application of budgeting micro functions of the firms examined that can be unambiguously attributed to the overall economic conditions resulting from the COVID-19 pandemic defined by Loureiro [24]. This specificity will further differentiate this study from previous related research, which has investigated either internal crises or that are limited to one firm, country, or industry [23]. This distinction is important in the examination of the COVID-19 crisis, which in the case of this study is focused on firms that are integrated with the economy of China through global supply chains to the economic conditions worldwide, and the subsequent reduction in the availability of capital, which is of paramount importance to MSEs [25].

The COVID-19 pandemic is unique, and while there have been comparisons, it differs from the SARS outbreak in 2005. Firstly, COVID-19 has caused more infections and fatalities than the SARS virus and has impacted more cities and provinces all over China. At the same time, China's economic conditions differ from those of seventeen years ago. Its economic growth, the structure of its industries, and the conditions leading to political and economic interventions are less favorable to offset the negative impact of the crisis [26]. China's economy is transitioning from high-speed growth to high-quality development [27]. Its industrial structure is evolving from being resource and labor-intensive to capital and technology-intensive; most importantly, consumption has replaced investment as the primary form of economic growth momentum [28]. These structural changes impact how governments can remedy the impact of COVID-19 prevention measures. To combat

COVID-19, 26 of 31 Chinese regions announced an extended work stoppage for non-essential enterprises. This was implemented through the prolonged New Year holidays, the confinement of millions of residents, and travel restrictions within China to keep the nationwide population migration at a minimum level [29].

Additionally, transportation suffered significantly from lockdowns, e.g., the impact on Wuhan, the largest land, air, and water connection hub and a major nexus for rail freight and high-speed rail. The subsequent economic impact of COVID-19 has been predominantly imposed on investments, consumption, import, and export. The immediate effect of lockdowns and movement restrictions has had an economic impact reflected in lower levels of production due to canceled orders, which might have triggered a reduction in investment activity. For companies with an overcapacity, COVID-19 and its aftermath might not have changed anything in their investment policy. Consumption, on the other hand, especially Spring Festival-related sales, declined, which impacts asset utilization. During the Golden Week in 2019, the Spring Festival retail and catering industry made sales over RMB1 trillion; in 2020, this amount dropped significantly. Amongst the industries hit worst are transportation, catering, hospitality, entertainment, and tourism, while the following industries gained more popularity: online shopping, online ordering, online education, and online entertainment. Import and export industries have been hampered after the World Health Organization's 31 January 2020 release statement that the COVID-19 outbreak constituted a public health emergency of international concern.

Consequently, some countries have implemented short-term measures, such as the suspension of imports and exports, flight restrictions, the evacuation of repatriates, or entry restrictions that influence foreign direct investments. The Chinese Governmental agencies at various levels provided aid to companies. This became necessary because in March 2020, the China Ministry of Industry and Information Technology announced that 90 % of State-Owned Enterprises (SOEs) and large industrial enterprises had resumed work while only 60% of SMEs outside Hubei Province had done so. Consequently, research conducted in February 2020 found that 85% of the surveyed SMEs did not have sufficient cash holdings to survive the following three months [30].

A survey by UNDP suggests that 50% to 60% of SMEs face difficulties in paying salaries, 13% to 38% of SMEs are being pressured to make loan payments, and 13% to 16% of SMEs have commitments for rent payments. At the same time, SMEs face falling sales, delayed or canceled orders, and few indicators of new orders on the near-term horizon. This situation was confirmed by the China Association of Small and Medium Enterprises (CASME): as of February 14th, 2020, 38.9% of surveyed enterprises are temporarily in production stagnation; 29.43% believe the pandemic will cause operating losses, and 18.13% say that they can barely sustain their businesses [31]. This situation was worsened by an employee absenteeism rate far above the 10–40% during the influenza pandemic because of induced traffic controls, panic and anxiety about COVID-19 infections, and the 14-day quarantine requirement for all returning employees [28].

The most notable government support for the COVID-19-afflicted SMEs reviewed in this study is reflected in “The Decisions of the Zhejiang Provincial Leading Group on the COVID-19 Prevention and Control on Supporting the Small and Micro Enterprises to Overcome the Difficult Time”. This policy package supported SMEs affected by the outbreak through the following measures: a 10% reduction in the prices of water and natural gas for industrial uses, the reduction and exemption of rents and deferred payment of relevant fees and taxes, and the reduction and exemption of real estate taxes and urban land use taxes, among others [32]. On the municipal level, as of February 2020, the Wenzhou city government implemented restrictions on highway access and enforced social distancing; the local government provided support for SMEs' rent, and allowed for the deferral of social security payments, yet it did not lower the credit guarantee threshold or provide emergency loans [33].

MSEs in Wenzhou and companies in general faced economic challenges related to the COVID-19 pandemic; simultaneously, governments at all levels provided support

of various means and amounts to them, especially to the MSEs, due to their recognized importance in the local and regional economies.

2.2. MSEs in China

MSEs and SMEs are considered the driving force of economic growth both globally and within China [34]. MSEs and SMEs are often the result of entrepreneurial activity [35] and tend to contribute more than large firms to the innovation upon which economic development is dependent [36].

The definitions of MSEs and SMEs vary depending on the data source. There is no universally accepted definition for SMEs or MSEs [37]. It is difficult to find a common definition because the classification of enterprises into categories can be subjective or different criteria can be measured [38]. The definition of MSEs tends to vary amongst countries and researchers [38,39]. In China, SMEs are classified differently based on the industry and market sector and by using a combination of revenue and the number of employees [37]. According to the National Bureau of Statistics (NBS) of China, micro firms have as few as ten employees, but not more than one hundred, while Small firms range from ten up to several hundred depending on the type of business [37]. Due to the reluctance of MSEs to reliably divulge their accurate financial information, this study used the number of employees as the criteria for inclusion, with a maximum number of 100. Firms that reported more than one hundred employees were not included in the analysis as they would, depending on their revenue, most likely be considered medium-sized and their data were discarded.

The recent development of vast commercial activity in China can be directly attributed to micro and small businesses as a significant part of the economy [40,41]. While the contribution of MSEs and SMEs to the national and global economy is comparable to that of large enterprises, the problems they face are different and are mostly related to access to financing for growth and to support cash flow for normal operations [42]. During the COVID-19 pandemic, small businesses were likely to experience cash flow problems that threatened their liquidity and, ultimately, for many, their survivability [43].

Zhejiang province, specifically the greater Wenzhou region in SE China, is an area of over 12,083 km² and has a population of over ten million. Historically a center for economic development and trade [44], Wenzhou is well known for its high level of entrepreneurial and SME commercial activity and for being the location of experimental national economic development policies in the early 1990s. Wenzhou was the first city in China to establish private enterprises after the cultural revolution and is still considered to be one of the leading cities in China for entrepreneurial and small enterprise activity [45,46]. Cunningham [47] reports that based on the density and significant preponderance of MSEs, Wenzhou is one of China's four major areas of small enterprise development. Wen-Qian [48] reported that medium and small enterprise development in the Wenzhou area was comparable and similar in many aspects to that in the greater Xian region. Being one of the largest cities in China, Xian, which is heavily developed with respect to SMEs, is a global leader in light manufacturing [49]. Given the high density and number of MSEs, the impact of the COVID-19 pandemic in Wenzhou is likely to provide a representative sample of similar enterprises elsewhere in China.

Given the economic importance of small businesses in China and the world and the cruciality of accounting-related functions to their ongoing operations, their budgeting and planning functions are of great importance with respect to the overall economic landscape. Within the functions of budgeting, changes to the micro functions of planning, resource allocation, and performance evaluation resulting from the COVID-19 pandemic will be examined in this study to ascertain what changes, if any, were placed by MSEs on the importance of the three functions of planning, resource allocation, and performance evaluation.

2.3. Budgeting and Controls in China

In the Western context, budgeting and controls are well-established areas of focus for driving the financial performance of firms of all sizes [50]. The importance of budgeting in smaller firms is also well documented, with a high level of consensus that is generalizable on an international basis [51].

Budgeting during periods of crisis has been shown to play an important role in the adaptation of firms to externalities by both mitigating threats and exploiting opportunities. Research on the effect of economic crises on budgeting has yielded a lack of consensus in part because budgets, by definition, are not fluid, making them ineffective during periods of unpredictable economic conditions [52]. Others have suggested that budgeting during periods of economic crisis has no value with respect to firm performance [53], and that abandoning the budgeting process entirely may result in better firm performance due to increased flexibility [54].

One possible explanation for the lack of consensus among the existing research could be that the various functions within the budgeting process are not delineated but are clumped together within the larger concept of budgeting [55,56]. Therefore, one of the premises of this study is the disentanglement of three of the several sub-processes of the budget function and an examination of those three within the parameters defined above, which may highlight mechanisms that are only apparent when budgeting is viewed in the aggregate form [57].

China and Chinese companies add a unique context to budgeting and control. In 2014 the Chinese Ministry of Finance issued a directive regarding the development of managerial accounting practices, including budgeting control and performance assessments for SMEs. Two years later, in 2016, detailed guidelines for establishing managerial accounting in companies were issued. As noted by Scapens and Yan [58], the socioeconomic context of China differs from most Western economic environments, which makes the (theoretical) application of Western management accounting practices challenging. While various studies have considered the implementation and use of management accounting in SOEs and joint ventures, there remains a considerable gap in the existing literature regarding management accounting among SMEs and MSEs. According to Grafton et al. [59], RBV considers management accounting as a means to unleash organizational capabilities. However, MSEs are different from MNEs (Multinational Enterprises). The former lacks the human resources, managerial capacity, and other resources necessary to establish a formal and structured management accounting system. Alternatively, in China, MSEs may have private networks known as *guanxi*, which can gather informal information, obtain access to resources, and render management accounting redundant for decision making. Some research has shown that *guanxi* can drive growth and efficiency, especially in local government [60].

Zheng [61] surveyed 899 SMEs in the Tongzhou district of Nantong in Jiangsu province and found a very limited application of management-accounting techniques. That study found that few company leaders thought management accounting was valuable or did not suit the company's internal economic environment. As a result of the extensive overlap between SOAs and private firms in China, there is a considerable level of the adoption of government agency accounting requirements in privately held or controlled firms. Additionally, commercial enterprises in China have frequently adopted an adaptation of performance-based budgeting [34]. While there are exceptions to centralized budgeting and forecasting in some situations, typically, it is on a smaller scale and in the regional or local government [62].

Culture plays a role in business decisions and activities of all types, including budgeting [63]; for example, one culturally unusual aspect of budgeting in China that is often used for operational performance measurement but rarely to improve financial performance in China is headcount budgeting [64]. Activity-based costing (ABC) in Chinese manufacturing firms is related to organizational culture factors [65]; however, there is a lack of consensus on the value of budgeting by MSEs in general, and in particular, during times of crisis. The importance of budgeting in general, particularly during crises, within MSEs in China

remains under-researched. To fill this void, this study explores the micro-functions of the budget process and extends the existing research findings by including the concept of *guanxi* as a capability within RBV. By examining the importance of these processes for MSEs with greater granularity, this article will shed light on the application of managerial accounting tools before and since the COVID-19 pandemic among MSEs and will extend the findings of past research, which predominantly focused on larger enterprises.

2.4. Budgeting in Times of Crises

The existing literature on how the budgeting process is affected by crises is varied in nature and over time, partly due to how different types of crises impact businesses [65]. Much of the related research has been on larger firms [66]. There have been few previous studies on the impact of disasters on SMEs and their post-disaster policy needs, with most of these studies focused on recovery after environmental hazards such as earthquakes and floods [67] and even fewer studies on MSEs in similar contexts. The impacts of environmental hazards and epidemics are not the same; that is, while environmental hazards can inflict physical damage to infrastructure systems, epidemics can have more devastating and prolonged impacts on the general population and the economy [68].

As discussed above, the importance of the budgeting process as a determinant in the sustained economic viability of a firm has been well documented. The role of budgeting during crises and periods of perceived environmental uncertainty (PEUs) has likewise been examined with little dissension in the findings. The longer-term effects of a financial crisis have been determined to exceed those associated with short-run fluctuations in the typical business cycles, which further reinforces the importance of effective budgeting during uncertain times [69].

2.5. Guanxi

While the concept of *guanxi* is well known in China and generally accepted as playing an important role in business activities [70,71], it does not have a well-accepted and direct literal translation in English [72]. Many argue that *guanxi* is “an emotionally sensitive, network-based form of resource allocation, uniquely fitted to China’s distinctive national culture” [72]. While the concept may seem familiar to non-Chinese, and similar to the concepts in other cultures, its complexity and nuance may contribute to problematic cultural differences in Sino–foreign business relationships [73,74]. *Guanxi* is a complex and loosely defined combination of aspects of personal relationships that can be used within several distinct contexts including the differing intensities of closeness and obligation between, kin, friends, and acquaintances [75]. Perhaps partly as a result of the imprecise nature of translating and explaining *guanxi* there is a limited consensus on a clear definition in the recent (English) research on *guanxi*; however, there is little dissension on the historical and current importance and relevance of *guanxi* in Chinese culture and daily life [76]. *Guanxi* has been found to be of particular importance to small Chinese firms [77].

MSEs may face greater difficulties in establishing effective *guanxi* relationships because they would need to spend already limited resources on activities such as donations, gift-giving, and banquets, which comprise an essential part of establishing personal networks (i.e., *guanxi*) [78].

For the purposes of this study, *guanxi* was measured by examining the level of emphasis and importance that the MSEs have placed on cooperative relationships with lenders, suppliers, customers, and government.

3. Formulation of Hypotheses

The functions of planning, resource allocation, and performance evaluation are examined within the context of the possible impact of economically significant events in the recent past. Hypotheses are formed regarding the impact of the COVID-19 pandemic on the importance of those functions as perceived by owners/operators of MSEs in China. Based on the review of the related literature, specifically, the work performed by Becker et al. [79],

the following hypotheses are put forth regarding changes in the relative importance of three budgeting macro-functions: (1) planning, (2) resource allocation, and (3) performance evaluation. While Becker et al. [79] developed a sound rationale for examining the three micro functions of planning, resource allocation, and performance management and offered compelling findings, a thorough review of the related literature on MSEs leads to a different hypothesis regarding the same constructs.

Firstly, as a result of the COVID-19 pandemic, an economic crisis occurred, resulting in an increase in the importance and need for planning and the planning function within the budgeting process. For MSEs, a reduction in the demand for goods and services weakens their prospects for success by reducing their options for increasing revenues while creating a pincer effect due to ongoing and uncontrollable fixed—however small—expenses and a time-sensitive situation. To reduce inefficiency in the operational timeline, one would expect, based on the findings of Becker [79], that MSEs would be highly motivated to address time-related activities, with the decision makers increasingly motivated to ensure that there is no deviance from the financial goals. Consequently, MSEs seek to reduce uncertainty and slack time through more planning [80]. Additionally, the increased instability in demand would encourage the closer monitoring of inventories and the supply chain performance. These, combined with other factors such as those related to the cash flow issues experienced by customers and suppliers, would likely result in an increased awareness of crisis-related performance issues and the need to more comprehensively understand and coordinate responses to changes on short notice. These factors, in turn, would result in an increased need for more informed decision making and a focus on planning [81]. Finally, the research has indicated that when there is a lack of historical data and knowledge resulting in a limited understanding of a situation such as that experienced during the COVID-19 pandemic, the budgeting process may be influenced by other factors, including some that may be less objective [82]; thus, firms are likely to increase the frequency with which they assess, update, and revise their plans, increasing their reliance on planning as a method to improve reaction times and to reduce uncertainty and the ensuing risk [83]. However, most of the existing literature is based on larger enterprises' more readily available data. Examining the limited literature on these three micro functions of the budgeting process used by MSEs during times of crisis presents a contrasting picture. While Reid and Smith [84] found an increased use of management-accounting systems for SMEs that face external contingencies, such as a shortage of available financing or cash flow crises, Laitinen (2011) observed a decreasing use of management accounting for SMEs under distress caused by economic conditions.

In contrast, market conditions such as the quantity and quality of demand may trigger a demand for more accounting information. Pavlatos and Kostakis [85] report similar findings and underscore that companies seek higher and more relevant informational content for planning and decision making during times of perceived environmental uncertainty. However, their study's context is somewhat different from China and Chinese companies, which, especially MSEs, lag in establishing basic management accounting functions [86]. Therefore, hypothesis one is as follows:

Hypothesis 1. *There is a negative relationship between the impact of the economic conditions resulting from the COVID-19 pandemic and the degree of importance placed on the planning function by MSEs in China.*

During periods of economic crisis, MSEs are likely to experience declining demand for their goods and services, resulting in cash flow-related operational problems. With declining revenues, MSEs are forced to find ways to meet their operating expenses. MSEs often have limited cash savings, and other options that larger firms may have, such as selling off assets or loans secured by assets, are not viable for MSEs [87]. While all firms are likely to experience cash flow-related issues during periods of economic crises, MSEs are very likely to experience severe liquidity issues [88].

Previous research showed that during periods of economic crises, decisions regarding the allocation of resources are more likely to be an area of focus with an emphasis placed on efficiency [89] and as a method of ensuring financial discipline [90]. Especially for MSEs, the emphasis on these factors is well established with the use of budgeting as a way to understand the dynamic nature of cash flow during crises and respond accordingly, including an increased emphasis on resource allocation, which seems probable. Therefore, hypothesis 2 is as follows:

Hypothesis 2. *There is a positive relationship between the impact of the economic conditions resulting from the COVID-19 pandemic and the degree of importance placed on the allocation of resources by MSEs in China.*

While the evidence from previous related research supports the notion of an increased reliance of the previous two functions of budgeting, planning, and resource allocation, the third function considered in this study differs. The value of the measurement of performance is well established in the existing literature [91], as is the integration of performance management into the broader accounting function [92]. Similarly, the use of Goal Theory for evaluating employee performance is a well-accepted motivational tool in management and HR theory [93]. However, the effective use of Goal Theory as a managerial tool to improve performance is predicated on several conditions, one of which is the perception among participants that goals, while challenging, are achievable [94]. During economic crises, the prospects of achieving budgetary targets are likely to decrease [85]. The very nature of the conditions of economic crises renders the achievability of performance targets tenuous at best, likely to be more difficult, and quite likely to be impossibly difficult and, regardless of the difficulty, likely to be outside the influence of the individual participants, thereby calling into question the validity and effectiveness of the process and a call for alternative means [95]. Likewise, an attempt to adjust or revise goals would invalidate the use of Goal Theory by violating the tenants of the process, namely, that the targets must be difficult but achievable because movable targets cannot accurately be used to measure performance [96]. It has been found that since firm performance during periods of economic uncertainty is outside the influence of managerial effort, the application of Goal Theory during crises is inappropriate simply because it is not possible to consistently set targets that are both difficult and achievable, as well as within the possible influence of the participants [97]. Firms that wish to measure performance during periods of economic crises are more likely to choose a tool other than budgets and perhaps evaluate performance subjectively [98], or at any time, by any non-financial metric [99]. Therefore, hypothesis 3 is as follows:

Hypothesis 3. *There is a negative relationship between the impact of the economic conditions resulting from the COVID-19 pandemic and the degree of importance of evaluating performance as part of the budgeting function.*

Studies on how epidemics can affect SMEs have been rare but are beginning to appear since the COVID-19 pandemic of 2020. There are recent articles related to budgeting and the allocation of public sector resources at a national or regional level during the pandemic (Argento et al., 2020). However, there exists a distinct gap in the research on the influence of the pandemic on the micro functions of budgeting considered by this study, explicitly concerning MSEs in China.

4. Methodology

4.1. Data

This study used data collected via online surveys. The surveys were distributed using the popular online social media platform WeChat and hosted on the survey platform of the same name. Respondents were screened through the initial survey questions. Only those personally involved in the ownership or operation of MSEs and who were familiar

with or involved in the budgeting process, including planning, resource allocation, and performance evaluation functions, completed the entire survey instrument. Respondents were assured of anonymity, and their completed responses were included in the analysis. The survey instrument was adapted from [79], focusing on larger firms. Translation of the survey instrument from English into Mandarin Chinese was completed separately by two native Mandarin speakers, both with PhDs in English from US and UK Universities, and then cross-checked to ensure clarity and accuracy.

The online survey was completed by 451 respondents, 54 of whom were subsequently omitted from the analysis after being determined to contribute invalid data due to incomplete responses. The remaining 397 surveys were analyzed.

4.2. Measure of Economic Crises

The construct of economic crises was adapted from Becker [79], whose research utilized a Likert scale to measure responses to a seven-item construct to capture the concept of economic crises, shock elements, and the uncertainty of factors, including market demand, availability, and access to capital and currency fluctuations. The Likert scale was used in this study to measure responses, where 1 = Strongly Disagree, 3-Neutral, and 5 = Strongly Agree.

More recently, the literature confirms the presence of a global economic crisis during 2020 resulting from the COVID-19 Pandemic [100]. The impact of the COVID-19 pandemic on the sample of MSEs was most severely characterized by declining orders resulting in declining revenues exacerbated by slower payments from customers and related problems both up and down the supply chain. The analysis below is calculated based on the survey questions previously used to measure the economic impact of the crisis.

4.3. Measure for Budgeting Functions

The comparison of the macro functions of budgeting has been considered and compared to the more generalized view that budgeting comprises an aggregate of micro functions [55]. Often, the assumption is that certain micro-functions are part of macro-functions without actually testing the premise [57]. For purposes of this study, an adaptation of the more detailed level of micro-functions as developed by Becker [79] was chosen as the basis for analysis and includes eight items covering the three premises of the micro functions outlined above. Respondents were asked to report their perception of the importance of each of the three budgeting functions of interest separately as before and since the COVID-19 pandemic.

4.4. Normal Economic Conditions

To establish a baseline for comparison with post-COVID-19 pandemic economic conditions, this study used the four measures of Perceived Environmental Uncertainty (PEU) from previous research on the topic by Gordon and Narayanan [21], which in turn was adapted from the original work of [101]. PEU is considered the most relevant factor for management control system (MCS) design and use [102].

The competitive strategy employed by a firm will play an essential part in determining the MCS characteristics best suited for application [103]. This study follows the concept of strategy as put forth by Michal Porter [104], a well-accepted construct that simplifies and explains the various complex components of strategy into simple language. Regarding performance evaluation, the effectiveness of an MCS is heavily dependent on the firm's strategy so that the design and application of the MCS can evolve and change over the lifecycle of firms [105]. The survey instrument included a question about the firm's age to control for this variable. The instrument also included a question on the firm's size based on the number of full-time employees (FTEs) to ensure that the data represented the targeted sample (MSEs).

4.5. Empirical Testing of Hypotheses

This study analyzed the data through a series of tests as indicated below to test the three hypotheses described previously with respect to planning, resource allocation, and performance allocation.

4.6. Sample Description

The sample for this research consists of 397 SMEs. Table 1 shows the characteristics of the SME sample. About 75% of the companies have less than 50 full-time employees. Regarding the company age, most companies (92%) are relatively young, i.e., under 20 years old. Moreover, the sample includes major industries such as manufacturing and service.

Table 1. Characteristics of Micro and Small Enterprises Sample.

	N	%	Cumulative %
Panel A: Company size			
The number of full-time employees			
1–10	80	20.15	20.15
11–24	99	24.94	45.09
25–49	116	29.22	74.31
50–100	102	25.69	100.00
Panel B: Company age			
1–5 years	170	42.82	42.82
6–10 years	129	32.49	75.31
11–15 years	37	9.32	84.63
16–20 years	29	7.30	91.93
More than 20 years	32	8.06	100.00
Panel C: Industry			
Manufacturing	128	32.24	32.24
Services	124	31.23	63.48
Trade	121	30.48	93.95
Others	24	6.05	100.00
Total	397	100.00	

4.7. Measurement of Crisis

To measure the characteristics of the COVID-19 crisis, this study used a five-item construct developed and tested by Becker (2016). Since the major aspect of the crisis concerns economic contraction, the items focus on capturing the economic impacts of COVID-19 on firms' budgetary behavior. In this research, the crisis is the independent variable. Table 2, panel A, shows the summary statistics of the items. For the empirical analyses, the mean score of the five items was used to represent the crisis, COVID-19. The interim correlations for all pairs of variables were calculated using Cronbach's alpha. The statistic for the scale is 0.90, showing good reliability [106].

4.8. Measurement of Budgeting's Micro-Functions

To measure budgeting's micro-functions, this study used the same items used in Becker et al. [79]. Eight items were used to measure the three micro-budgeting functions of planning, resource allocation, and performance evaluation. According to Becker et al. [79], the first four items (Operational planning, Forecasting, Coordination, and Variance analysis) represent the micro-function of planning. This study used five items, including the same four items along with a new item, "Plans" (e.g., capacity requirements based on sales projections), to more clearly capture the function "Planning". Becker et al. [79] used two items (resource allocation and authorization of spending) to capture the micro function, "Resource allocation". The same items were used in this study to measure that function.

Becker et al. [79] used the last two items (performance evaluation and rewarding) to measure the micro function, “Performance evaluation”. The same approach was followed in this study. To operationalize the measurement of these three micro-functions, this study compared the change in the budgeting micro-functions by taking the difference in the mean score of each item before and since COVID-19, calculating the mean scores of the three micro-functions, namely, planning, resource allocation, and performance evaluation. If the scores in Table 3 were positive, the indication is that companies value the micro-function more than before the pandemic; negative scores imply the opposite.

4.9. Control Variables

To explore the relationship between COVID-19 and each budgeting function, the following two control variables were included: PEU and company size. PEU represents perceived environmental uncertainty [21]. To measure it, two items were used: the perceived intensity of competition and market growth. Together with this, firm size was another control variable based on the number of full-time employees. Prior literature often includes firm size to examine firm behavior [107]. Table 2 shows the descriptive statistics.

Table 2. Descriptive statistics of the survey items.

	Mean	SD
Panel A: Crisis		
To what extent is your company impacted by the current COVID-19-related crisis? Please indicate to what extent your company faces the following types of impact of the current COVID-19-related crisis from Rank 1 to Rank 5		
1. Have orders declined?	3.31	1.37
2. Have sales declined?	3.28	1.40
3. Change in amount of on-time payments?	3.14	1.39
4. Has there been a reduction in capital availability?	3.15	1.41
5. Has availability of goods and services declined?	3.10	1.38
Panel B: Budgeting micro-functions		
Please indicate the importance of budgeting for the following management control tasks in your company (before and since COVID-19) from Rank 1 to Rank 5		
1. Operational planning: definition of operational goals and action plans based on corporate targets	3.45/3.39	1.32/1.34
2. Forecasting: prediction of near-future developments based on plans and evaluation of their impact on company performance	3.42/3.41	1.29/1.29
3. Coordination: alignment of business-unit activities based on plans	3.33/3.27	1.39/1.32
4. Plans (e.g., capacity requirements based on sales projections)	3.42/3.35	1.37/1.27
5. Variance analysis: comparison of planned to actual performance and analysis of variances	3.33/3.36	1.30/1.30
6. Resource allocation: allocation of scarce resources in case of competing demands	3.39/3.34	1.37/1.31
7. Authorization of spending: allocation of decision-making and spending authority	3.39/3.35	1.37/1.33
8. Performance evaluation: measurement of managerial and/or business-unit performance based on the degree of budget attainment	3.37/3.44	1.35/1.25
9. Rewarding: linking of compensation to a manager’s or business unit’s degree of attainment of a budget target	3.45/3.38	1.31/1.33
Panel C: PEU		
Please indicate the level of the following indicators ranked from 1—very weak to 5—Extremely strong		
1. How would you characterize the intensity of competition in your industry?	3.39/3.39	1.37/1.37
2. How would you describe market growth in your industry?	3.23/3.34	1.40/1.34

Notes: Minimum = 1 and Maximum = 5.

Table 3 shows the summary statistics of the main variables used in this research. The first three items represent the budgeting functions. Since these three values are calculated by taking differences between the period since the COVID-19 pandemic and before the

pandemic, positive values mean that companies value the function more highly during the COVID-19 period. The first two macro-functions, planning and resource allocation, are positive, but performance evaluation is almost zero, meaning there was no significant change in their perceived importance of the macro-function before and after the pandemic. To carefully examine the impacts of COVID-19 on these macro-functions, a series of regression analyses were employed. Considering that the mean value of crisis is 3.20, companies seem to be highly affected by COVID-19. This is consistent with the findings of previous research discussed above, wherein the COVID-19 pandemic created an economic crisis that affected MSEs, and is supportive of the premise of this study, i.e., that the empirical study of the effect on MSEs is a relevant topic.

Table 3. Descriptive statistics of budgeting, changes from ‘Prior’ to ‘Since COVID-19’.

	Mean	SD	Minimum	Maximum
Planning	0.03	0.61	−3	4
Resource Allocation	0.04	0.87	−3	4
Performance Evaluation	−0.00	0.87	−3.5	4
Crisis	3.20	1.19	1	5
PEU	−0.05	0.81	−3.5	4

Table 4 shows the correlation matrix between the main variables. The three macro functions have a significantly positive correlation. In contrast, a crisis usually has a negative relationship with the three budgeting macro-functions. Interestingly, PEU (perceived environmental uncertainty) has a significantly positive relationship with those three budgeting macro-functions.

Table 4. Correlation Matrix.

	1.	2.	3.	4.	5.	6.
1. Planning	1.00					
2. Resource Allocation	0.33	1.00				
3. Performance Evaluation	0.26	0.16	1.00			
4. Crisis	−0.18	−0.06	−0.14	1.00		
5. PEU	0.014	0.12	0.15	−0.17	1.00	
6. Size	−0.02	0.01	0.00	−0.02	−0.00	1.00

4.10. Model Specifications

For this study, the following three model specifications based on linear regression were used to explore the relationship between COVID-19 and the three micro-functions. The first specification is used to capture the impact of COVID-19 on planning. The second is used to capture the impact of COVID-19 on resource allocation. The last equation is used to examine the relationship between COVID-19 and performance evaluation. These three equations are based on Becker et al. [79]. The empirical results are provided in Table 5.

$$Planning = \alpha_0 + \alpha_1 * Crisis + \alpha_2 * PEU + \alpha_3 * Size + \sum \delta_l * Industry Dummy + \sum \pi_m * Age Dummy + \varepsilon_{Planning} \quad (1)$$

$$Resource Allocation = \beta_0 + \beta_1 * Crisis + \beta_2 * PEU + \beta_3 * Size + \sum \theta_l * Industry Dummy + \sum \rho_m * Age Dummy + \varepsilon_{Resource Allocation} \quad (2)$$

$$Performance Evaluation = \gamma_0 + \gamma_1 * Crisis + \gamma_2 * PEU + \gamma_3 * Size + \sum \mu_l * Industry Dummy + \sum \sigma_m * Age Dummy + \varepsilon_{Performance Evaluation} \quad (3)$$

Table 5. Empirical Results.

	Model 1			Model 2		
	Planning (1)	Resource Allocation (2)	Performance Evaluation (3)	Planning (4)	Resource Allocation (5)	Performance Evaluation (6)
Crisis	-	-	-	−0.09 *** (0.02)	−0.03 (0.03)	−0.09 *** (0.04)
PEU	0.11 (0.06)	0.14 * (0.08)	0.16 ** (0.07)	0.08 (0.06)	0.13 (0.07)	0.14 ** (0.07)
Size	−0.00 (0.02)	0.01 (0.04)	0.00 (0.04)	−0.01 (0.02)	0.01 (0.04)	0.00 (0.04)
Industry-FE	Included	Included	Included	Included	Included	Included
Age-FE	Included	Included	Included	Included	Included	Included
Constant	−0.02 (0.14)	−0.12 (0.15)	−0.00 (0.17)	0.20 (0.14)	−0.03 (0.17)	0.22 (0.18)
R-squared	0.02	0.02	0.03	0.05	0.02	0.05
# of obs.	397	397	397	397	397	397

Notes: # of obs. = The number of observations, Significance (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

As indicated in Table 5, the model (1) specifications do not include the independent variable, *Crisis*, to investigate the relationship between the micro-functions and other variables. As evident from the table, PEU has a significantly positive relationship with resource allocation and performance evaluation ($\beta_{PEU} = 0.14$, p -value < 0.10 , $\beta_{PEU} = 0.16$, p -value < 0.05).

In model (2), the independent variable, *Crisis*, is included. In column (4), it is clear that crisis has a significantly negative relationship with planning ($\beta_{Crisis} = -0.09$, p -value < 0.01). Therefore, H1—*There is a negative relationship between the impact of the economic conditions resulting from the COVID-19 pandemic and the level of importance placed on the planning function by MSE's in China*—is supported.

Crisis does not have a significant negative relationship ($\beta_{Crisis} = -0.03$, p -value > 0.01). Therefore, H2—*There is a positive relationship between the impact of the economic conditions resulting from the COVID-19 pandemic, and the level of increased importance placed on the allocation of resources by MSE's in China*—is not supported; instead, it is found to be inconclusive.

In column (6), we also find that *Crisis* has a significantly negative relationship with performance evaluation ($\beta_{Crisis} = -0.09$, p -value < 0.01). Therefore, H3—*There is a negative relationship between the impact of the economic conditions resulting from the COVID-19 pandemic and the level of importance placed on the evaluation of performance as part of the budgeting function*—is supported.

From these empirical results, the conclusion that COVID-19 has lowered the importance of the budgeting micro-functions of planning and performance evaluation during the pandemic for MSEs in China is apparent.

Incidentally, neither firm size (within the scope of those firms identified as MSEs and included in this study) nor the firm's age were found to have any significant relationship with the three micro-functions.

5. Discussion

This study aims to understand how the importance of budgeting's micro-functions, namely, planning (1), resource allocation (2), and performance evaluation (3), have changed with respect to Chinese MSEs since the COVID-19 pandemic.

The regression results show that the perceived environmental uncertainty (PEU) intensified competition and market growth and, before the COVID-19 pandemic crisis, had only impacted the use of *resource allocation* and *performance evaluation*. At the same

time, MSEs since the pandemic only consider PEU an important driver for *performance evaluation*. This argument is underpinned by the fact that 60% of MSEs link incentives and rewards to performance, and that performance evaluation should be based on employees' accountability and responsibility. The pandemic has added an external shock with respect to reduced market growth, which impacts MSEs' sales and overall performance but could not be attributed to the individual staff's performance. Thus, the economic effect of the perceived environmental uncertainty resulting from COVID-19 needs to be excluded from performance evaluations so that the continuous engagement of employees for improved performance is supported.

In this vein, Hassan et al. [108], among others, found that business owners or managers who evaluated their performance consistently achieved better organizational performance. During COVID-19, owners and managers could benefit from assessing their employees' performance to navigate the decline in sales and challenges to accessing financial resources. The change in the results prior to and since COVID-19 underpins the fact that MSEs were still considering the added value of this function as an internal capability to overcome PEU while the crisis had no impact on the use of *resource allocation*. This finding can be explained by the fact that the *availability of goods and services* declined (on average) the least due to the COVID-19 pandemic, making PEU a non-essential driver for resource allocation during the crisis. This is in line with RBV, which considers the response to crisis a dynamic capability shaped by companies' resources such as *guanxi* [109].

In contrast to the PEU's impact on the use of *performance evaluation* before and since the COVID-19 pandemic, the overall impact of *crisis* on *performance evaluation* and *Planning* is significant and negative. This finding contradicts Pavlatos and Kostakis [85], who found that companies seek higher and more relevant informational content for planning and decision making during times of crisis. However, the findings are consistent with those of Govindarajan [110], who observed formal accounting in performance evaluation; thus, the usefulness of the budgetary system overall declined during times of crisis. This can be explained by proposing that MSEs have limited resources, managerial capabilities, and resources in general, which during crises are best applied to building *guanxi* to enhance relationships both with the private sector and government customers. Additionally, the overall purpose of Chinese companies collecting financial information was mainly for strategic planning (37%), budget targets (30%), both (12%), and neither (22%), supporting the fact that budgeting functions were not in widespread use. These results provide a refined view revealing that the nature of a crisis and its perceived extent might impact companies' use of budgeting functions.

Companies during crises focused more on government and customer relations (*guanxi*), and perhaps on short-term survival. This would explain why companies spent less time on performance evaluation and planning but likely more on their attempt to overcome the crisis by dedicating their energy and resources to short-term financial solvency.

Furthermore, the studies of SMEs in other developing countries have reported that management accounting practices are more traditional, placing more focus on the financial measures with little consideration of non-financial indicators [111]. This is consistent with the sample used in this study; however, the data reported here further indicate that 41% of companies are between 1–5 years old and about 43% have 24 or fewer employees. These factors have been found to contribute to the delay in implementing management control systems such as budgeting [105], making the reliance on the internal capability of *guanxi* more pronounced. Another factor that might contribute to the limited use of budgeting functions before the COVID-19 pandemic, and even less afterward, is the high stake of ownership by the founding family; only 38.8% of companies did not have founding family ownership.

In conclusion, the young age of companies, their small employee base, their high share of family ownership, and the focus on strategic planning meant that MSEs utilized budgeting's micro functions of planning, resource allocation, and performance evaluation to a limited extent prior to the COVID-19 pandemic, and even less since the pandemic.

While perceived environmental uncertainty has been a reinforcing factor for using some of budgeting's micro-functions, MSEs paid more attention to guanxi development with customers and government in the wake of COVID-19 than on enhancing their budgeting functions. This indicates that guanxi as an internal capability has been more pronounced since the COVID-19 crisis, adding a dimension to the RBV.

6. Contribution

COVID-19 has presented companies with economic and cash flow challenges due to declining sales, supply chain disruptions, and local and regional lockdowns. This article contributes to the existing literature on budgeting during a crisis, within the context of China's greater Wenzhou commercial area, through four distinct aspects. Firstly, this study examined the reactions of firms' assessment of the relative importance of the three activities within the budgeting processes during both the economic downturn and highly unstable circumstances. This can be compared to the bulk of the existing research, which largely focuses on company or country-specific cases, or cases related to less general crises, for example, competition or technological change, which does not affect activity at the macro level. Secondly, this study focuses on MSEs in China, and Chinese companies add a unique context to budgeting and control because the Chinese Ministry of Finance issued a directive to promote managerial accounting, including budgeting, control, and performance assessment, for MSEs. Thirdly, this study sheds light on applying managerial accounting tools prior to and since the COVID-19 pandemic among Chinese MSEs, building upon past research that predominantly focused on large corporations or specific firms/governments.

Finally, this study adds to the knowledge within the realm of RBV, highlighting the internal capability of guanxi as an alternative to the aspects of the budgeting process for MSEs to mitigate economic uncertainty. By applying the concept of guanxi, relationships with customers and government can be channels for informal information and access to financial and other resources and benefits.

This study also has some limitations. Firstly, the study cannot answer whether the relatively low implementation of budgeting functions in the MSE sample plays a role in the failure of companies; however, there is evidence in the existing literature to support this presupposition [112]. Secondly, the importance of a less accurate cost calculation could not be assessed, although there exists evidence of its importance as a factor in a firm's success [112]. Finally, another factor that remains beyond the scope of this paper is whether company owners had access to insider, government information on the support scheme for MSEs and SMEs before the official issuance of the information by the central-, provincial-, and municipal-level governments.

This study did not control for other variables that may be of interest, including the organizational structure and management structure. Future research into these variables would be useful and relevant and contribute to the knowledge of MSEs' responses during times of crisis.

The findings of this study provide novel insights into the budgetary reactions of MSEs to the COVID-19 pandemic, which might be of interest to other countries. This study can inform the Chinese accounting profession, policymakers such as China's Ministry of Finance, and MSEs themselves to adapt western management accounting to the socioeconomic context of China and in the aftermath of COVID-19.

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