INVESTIGATING THE DETERMINANTS OF WORKING CAPITAL IN THE GULF COOPERATION COUNCIL

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Abstract

This study aims to identify the determinants affecting the working capital of non-financial companies listed on the Gulf Cooperation Council (GCC). All non-financial companies listed on Qatar, Oman, Saudi Arabia, United Arab Emirates, Bahrain, and Kuwait were collected and resulted in a total of 532 companies during the period of 2008–2021. The final sample included 135 companies (25.38 percent of the total number of non-financial companies in the GCC) that had at least 10 years of data out of the 14 years. This paper applied the panel regression (random and fixed effects techniques); the insignificant result of the Hausman test favored the random effect results. The results argued that there is a negative significant effect of leverage, profitability, and firm size on working capital. This suggests that high-leveraged companies tend to have less working capital and this is due to the commitment to servicing the debts. In addition, large companies tend to have less working capital since they have huge expenses to pay and this affects negatively their working capital level. Also, an interesting result is that highly profitable companies tend to have less working capital since they include themselves in more projects. While, there is a positive significant effect of growth and cash flow on working capital, which confirms that high-growth companies tend to have better working capital.

Keywords: Working Capital, Agency Theory, Pecking Order Theory, Panel Regression, GCC

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1. INTRODUCTION

The efficient management of working capital is a key element of the entire corporate strategy. To maximize shareholder value, this must limit short-term debt and cut back as much as possible on investments in liquid assets. Though, several researchers demonstrate that a company may miss numerous valuable investment opportunities or run into a liquidity problem if its working capital is improperly managed (Sardo & Serrasqueiro, 2022). Based on Dash (2020), because managing working capital affects the company's profitability and liquid assets, managing the financial requirements and

operations of every corporation is crucial to management. Working capital and fixed capital needs are the two main categories of financial needs. Working capital is that area of finance that enables a business to carry out its daily activities. The management of working capital assists managers in controlling the company's day-to-day operations by making funds available for paying short-term borrowings, the maturity of long-term debt, as well as expenses resulting from everyday operations. Therefore, it is necessary to maintain an ideal level of working capital to balance risk and return (Hussain et al., 2022).

It is necessary for companies to seek continuous improvement of working capital management, as the optimal working capital of the company contributes to bearing the negative effects of economic strikes. It is also effective in times of economic recovery, in those times improving working capital is a key factor in increasing the profitability of the company and improving its position in the competitiveness of the market. Finding the optimal capital structure for the company contributes to providing greater opportunities for wealth creation and maximizing the value of the company. It is of high importance that companies hold an appropriate cash cycle; efficient management of receivables and payables enhances profitability and liquidity (Abu Khalaf & Al-Tarawneh, 2019).

Based on the previous discussion, studying the factors and determinants that affect working capital is important and necessary, as working capital is closely related to financing decisions and corporate performance. Working capital management also affects the cash cycle, which is the period a company needs to pay and receive cash flows. Therefore, the main objective of this paper is to investigate the factors that might affect the working capital in the Gulf Cooperation Council (GCC); since it influences the businesses' profitability and liquidity, the determinants of working capital management are important (Smith, 1980; Tjandra et al., 2021). The primary objective of working capital management is to guarantee that businesses have enough cash flow to maintain regular operations while minimizing the risk of being unable to pay short-term creditors. Additionally, managers ought to try to refrain from making irrational investments in working capital because doing so costs businesses and reduces their profitability, in other words, managers usually need to invest long-term funds in positive net present value projects and not use short-term funds in long-term projects since this would reduce liquidity and increase the cost when trying to fulfill the short-term needs. However, striking a balance between a company's profitability and liquidity is not an easy undertaking, and it relies on how well-working capital management is done (Moussa, 2019; Jaworski & Czerwonka, 2022).

Therefore, the aim of this paper is to identify the variables that affect a company's decision related to the required amount of working capital needed.

The remainder of this paper is structured as follows. Section 2 reviews the relevant literature. Section 3 analyses the methodology that has been used to conduct empirical research on the determinants of working capital. Section 4 discusses the results and analyses the implications, while Section 5 concludes this empirical paper.

2. LITERATURE REVIEW

2.1. The agency theory

According to the agency theory, companies are characterized by the separation of ownership between management and owners, which results in a conflict of interest between shareholders and managers. Managers seek to maximize their own interests at the expense of the shareholders due to the asymmetry of information between shareholders and managers (Jensen & Meckling, 1976). Because of the conflict of interest, the decisions that managers will make related to capital and liquidity management may not be in the interest of the owners due to weak oversight, and therefore, managers can invest in projects with a positive net present value for personal purposes such as self-gratification (Chung et al., 2005; Tjandra et al., 2021).

2.2. Pecking order theory

The pecking order hypothesis by Myers and Majluf (1984) examines how asymmetric knowledge affects how much debt and equity a company will issue. To minimize the risk of emitting negative signals, businesses should finance investments first with internal resources, then with safe debt, then with risky debt, and ultimately, with equity. In other words, companies try to reduce the negative signals of increasing debts and reduce the risk associated with such information since investors usually might interpret this as a bad cash position and are unable to service their obligations. Also, they take into consideration the retained earnings (internal resources) then secured debt, unsecured debt and, finally, issuing equity since it is the costliest option when funds are needed. The pecking order theory has the consequence that enterprises do not have a target debt-to-equity ratio since they determine their leverage ratio based on their financing requirements. Additionally, enterprises do not have target cash levels; rather, cash is used as a cushion. Moreover, corporations do not have goal cash balances but rather employ cash to operate as a shield between investments requirements and retained earnings (Ferreira & Vilela, 2004).

It implies that the company's leverage decreases when its internal funds rise. As long as a company keeps an excess of internal funds on hand to reduce the expenses associated with adverse selection, it will build up extra cash that it will use to settle its debt when it is due. For a company without a constrained investment policy, cash flow is simply used to raise capital (Opler et al., 1999). Internal financing source from working capital is an easily accessible source that can work as a substitute for external capital source. Due to flotation costs and the issue of asymmetric information, external financing can be quite expensive, especially for financially limited enterprises (Fazzari & Petersen, 1993).

2.3. Previous studies

Hussain et al. (2022) investigated the determinants of working capital during the period 2000–2020 for non-financial companies (manufacturing) listed on the South Asian Association of Regional Cooperation countries (SAARC). They applied the generalized method of moments (GMM) estimation technique and found that liquidity, size, operational risk, leverage, sales growth, and market risk are the main ratios that should be taken into consideration when formulating liquidity needs on a short-term basis. In addition, they argued that companies should develop a ranking system for their working capital needs which should take into consideration the market risk and operational risk and this trade-off should lead to a better value.

The aim of Sardo and Serrasqueiro's (2022) study was to analyze the determinants that affect the working capital of small and medium-sized companies. The study also aims to show the impact of the probability of financial distress on the working capital of small and medium-sized companies. The study sample consisted of 3,994 small and medium-sized companies for the period of 2011–2017 and found that Portuguese small and medium-sized companies follow a conservative approach in managing working capital, as they are keen to fulfill obligations to creditors and give it a priority. In this study, it was also found that financial distress has a positive and moral impact on working capital. Companies exposed to financial distress invest in working capital in an attempt to avoid the risk of bankruptcy. Hence, the results revealed that both company size and sales growth negatively affect working capital whereas the cash flow, long-term debt, and age of the company have a positive impact on working capital.

Jaworski and Czerwonka (2022) used the ordinary least square regression (OLS) and applied the panel regression (fixed and random effects techniques to investigate the determinants of working capital in the European Union (EU)). They managed to collect the data for 6122 companies and covered eight years (2011–2018). They concluded that several internal factors, such as the size of the firm, liquidity, tangibility, cash flow, and growth affect the working capital significantly. In addition, several external factors also included, such as unemployment, growth in the gross domestic product (GDP), and renewable energy, were found significant in the European context.

Tjandra et al. (2021) aimed to determine the determinants of working capital for industrial companies registered in the stock exchanges of Indonesia and the Philippines. The sample of this study consisted of 210 and 630 observations from the Philippine Stock Exchange and the Indonesia Stock Exchange, respectively. The study found a difference in the results of industrial companies in both stock exchanges. In the Indonesian Stock Exchange, the results show that the financial leverage, the tangible assets, and the age of the company have a negative impact on working capital while opportunities for growth and profitability have a positive impact on working capital. As for the Philippine Stock Exchange, the results proved that tangible assets and financial leverage have a significant effect on working capital while there is no significant effect of growth opportunities, age, and company size on working capital. Additionally, there is a positive impact of profitability on working capital.

Korent and Orsag (2022) investigated the determinants of working capital management in Croatia during the period 2008–2015 and collected data for 19355 companies. They applied the panel regression (fixed and random effects techniques) to examine the determinants and found that profitability, size, GDP growth, and firm growth significantly affect the decision of managing the working capital in nonfinancial companies in Croatia.

Dash (2020) aimed to show the impact of a group of firm-level determinants on the working capital of companies operating in the manufacturers of sugar in India. The sample consisted of the financial statements of 15 Indian firms listed in the capital market for the period 2008–2018. The determinants included the size of the company, financial leverage, percentage of fixed assets to total assets, and sales growth. Consequently, the indicators measuring working capital were the current ratio, asset turnover, fixed asset turnover, receivables turnover, inventory turnover, and cash transfer cycle. The most important results of the study showed that the size of the company has a significant positive impact on the working capital, while the financial leverage and the fixed assets ratio have a significant negative impact on the working capital of the sugar manufacturers in India.

Safia (2020) conducted a comparative study between the companies operating in the service and production sectors in the Karachi Stock Exchange (KSE). This study aimed to determine the determinants of working capital in each of the sectors using the quantitative approach in analyzing the data. The working capital was the dependent variable while return on equity, return on assets, total sales of the company and financial leverage were the independent variables in the study. The sample of the study encompassed 170 observations for 34 companies listed on KSE. The data was collected from the companies' statements of financial position for five years (2007–2011). The most important findings of this study were that all determinants are not significant to working capital in the service sector except for the short-term debt-to-total assets variable. As for the production sector, the results revealed that all determinants were not significant to working capital except for two variables namely sales growth and return on assets.

Abu Khalaf and Al-Tarawneh (2019) aimed to look into how corporate governance affects the ability to manage working capital. The sample consists of 49 manufacturing companies that were listed on the Amman Stock Exchange (ASE) between 2005 and 2016. Panel data (random and fixed effects approaches) is used in this study to analytically explore the effect of corporate governance on effectively controlling working capital. The length of the CEO's tenure and the size of the board are two corporate governance variables included in the model, which is also influenced by business size, growth, and performance. The findings imply that the governance of manufacturing companies in

Jordan would be better at effectively controlling their working capital the higher experience the manager has and the lower the board size.

Moussa (2019) aimed to determine the factors that affect the behavior of working capital for companies listed on the Egyptian Stock Exchange. The most prominent determinants of the study include growth opportunities, operating cash flow, performance, company value, financial leverage, company size, and economic conditions. The sample consisted of the financial statements of 68 industrial companies listed on the Egyptian Stock Exchange for the period 2000–2010. It was found that growth opportunities, financial leverage, and economic conditions are negatively related to working capital while the company's age, performance, and value are positively related.

Alehegne et al. (2019) aimed to verify the determinants affecting the working capital of food and beverage companies listed in the Addis Ababa stock market. The researchers relied on the quantitative approach to analyze the data that consisted of the financial statements of 35 manufacturing food and beverage companies for the period 2011–2015. The determinants of working capital defined by the study included return on assets, operating cash flow, financial leverage, company size, growth rate, cash transfer cycle, real GDP growth, and inflation rates. Consequently, the study used two indicators to measure working capital: the size or level of working capital requirements and the net working capital deflated by total assets. This research found a negative significant relationship for each financial leverage, company size, real GDP growth rate, and inflation rate and a positive significant relationship with the cash transfer cycle.

Nastiti et al. (2019) aimed to investigate the determinants of working capital management of 117 industrial companies in the Indonesian Stock Exchange. The firm's cash conversion cycle measured the working capital in the study and encompassed leverage, sales growth, the firm's capital expenditures, operating cash flow, GDP growth, Consumer Price Index (CPI), firm size, firm age, and the one-year lagged value of the cash conversion cycle. The research revealed that leverage, GDP growth, and the lagged value of the cash conversion cycle positively impact the firm's working capital. Similarly, sales growth negatively impacts the working capital of Indonesian firms.

Elbadry (2018) aimed to clarify the main determinants affecting the working capital of Egyptian small and medium-sized businesses. The study also aimed to show the relationship between working capital and the profitability and capital structure of these companies. The sample of the study consisted of the financial statements of 130 companies funded by the National Bank of Egypt for the period 2010–2013. The findings of the study showed that corporate profitability, financial leverage, and fixed and tangible assets have a significant negative impact on the working capital of small and medium-sized companies in Egypt. Consequently, it also found out that small and medium-sized firms have low working capital which leads to high returns and risk exposure.

Based on the selected previous research, the problem highlighted in the literature is mainly related to the mixed results achieved by the published studies and limited evidence from developing markets, specifically the GCC region. Determinants of working capital management have received less attention because financial managers focus most of their attention and effort on managing long-term financing decisions and how to service such debts. Hence, this study comes to fill in the gap in the literature by examining the determinants of working capital in GCC and covering a 14 years period (2008–2021) that will help in understanding the Gulf region's needs better.

3. METHODOLOGY

3.1. Sample used

This empirical paper managed to collect the data for all non-financial companies in the GCC region, a total of 532 companies divided into 6 countries, namely Qatar, Bahrain, Oman, the United Arab Emirates, Kuwait, and Saudi Arabia. The data has been extracted from the Refinitiv Eikon platform and any missing data was found either in the companies' annual reports or the stock exchange related to that company. All financial companies were excluded since they have different structures for their financial statements. The final sample included 135 companies for the period of 2008–2021. The exclusion of non-financial companies in the different markets was because we needed to have complete data through the previous 14 years. Several estimation techniques were introduced in the literature to investigate the determinants of working capital such as OLS, panel regression, and GMM. This paper applies panel regression (fixed and random effects technique) since it takes into consideration the firm characteristics and time factors, while OLS fails to incorporate the time effect and firm effect, however, the GMM is also excluded since we have no lagged variables included in the model.

3.2. Model development

3.2.1. Dependent variable

The cash conversion cycle (CCC) is the duration required for a firm to turn its raw material purchases into completed goods that can be sold for money. The higher the net investment in current assets, the higher the requirement for current asset financing, and the longer the CCC (Abu Khalaf & Al-Tarawneh, 2019). The CCC is calculated by adding the average collection period to the inventory turnover in days and then deducting the average payment period. Jose et al. (1996) led to the realization that poor working capital management causes people to look for outside sources of funding to pay their short-term debts and repay the related loans. Many studies, like Izadi Zadeh Darjezi et al. (2017), Panigrahi and Sharma (2013), and Nastiti et al. (2019), employed the CCC as a stand-in for working capital management. As a result, the lower the CCC, the better the working capital management is.

3.2.2. Independent variables

Leverage

As the company's debt grows, there will be a greater information gap between its creditors and shareholders, raising the cost of external funding, specifically the asymmetry of information between creditors and shareholders usually leads to an increase in the total cost of funds needed (Jensen & Meckling, 1976). Since the cost of funds spent on working capital would be greater for organizations with greater leverage, more leveraged enterprises would need to maintain reduced levels of working capital (Korent & Orsag, 2022; Caballero et al., 2019). Leverage is represented by the ratio of total debt to total assets. However, we expect that *there is a negative relationship between leverage and the cash conversion cycle (H1).*

Firm growth

The impact of expansion opportunities on working capital can be achieved by granting trade credits or the purchase of inventories. The demand for increasing inventory levels may expand as a result of the expectation of future sales growth (Sardo & Serrasqueiro, 2022). We utilize the ratio of sales growth, as used by Gill (2011), Zariyawati et al. (2017), and Caballero et al. (2019), as a proxy for firm growth. However, we expect that *there is a negative relationship between firm growth and the cash conversion cycle (H2).*

Cash flow

Pecking order theory shows that corporations prioritize internal sources over the equity of funding since internal sources are more affordable than external ones (Myers & Majluf, 1984). Working capital management would be affected by cash flow from operations as a result, and businesses with higher cash flows would be able to invest more in their working capital needs, in other words, the positive increase in revenues usually affects the cash flow from operations to increase and consequently increase the retained earnings and this, in turn, reduces the need for external financing (Hussain et al., 2022). According to Fazzari and Petersen (1993), businesses with higher cash flows have more working capital because they have more internal resources for financing working capital, which allows them to have more current assets. As a stand-in for cash flow, we employ the operating cash flow-to-sales ratio. However, we expect that *there is a negative relationship between cash flow and the cash conversion cycle (H3).*

Profitability

Several papers argued that there is a negative correlation between profitability and working capital (Safia, 2020; Sardo & Serrasqueiro, 2022). On the one hand, increased profitability strengthens a company's negotiating position with suppliers and consumers, and companies can benefit of these competitive advantages to increase their liquidity (Shin & Soenen, 1998; Petersen & Rajan, 1997). On the other hand, the more working capital investment means more sources are used and this shall increase the opportunity cost of businesses (Deloof, 2003). This study aims to measure profitability by the return on assets. However, we expect that *there is a negative relationship between profitability and the cash conversion cycle (H4).*

Firm size

According to Jordan et al. (1998), Berger et al. (2001), and Alehegne et al. (2019), larger organizations will incur smaller costs of external financing when investing in working capital compared to smaller ones due to their less knowledge asymmetry. Additionally, larger businesses can extend more trade credits and have better access to financial markets than smaller businesses which allows them to invest more in working capital (Niskanen and Niskanen, 2000; Petersen & Rajan, 1997). As a proxy for business size, this paper used the natural logarithm of total assets. Though, we expect that *there is a relationship between the cash conversion cycle and firm size (H5).*

3.3. Model specification

Based on the previous studies, we managed to develop the following model to investigate the determinants of the CCC:

$$CCC = \beta_0 + \beta_1 Lev + \beta_2 Growth + \beta_3 CFL + \beta_4 Prof + \beta_5 Size + \varepsilon \quad (1)$$

where,
CCC: The cash conversion cycle;
Lev: Leverage is measured by the ratio of total debt-to-total assets;
Growth: Firm growth is measured by the ratio of sales growth;
CFL: Cash flow is measured by the operating cash flow-to-sales ratio;
Prof: Profitability is measured by dividing the net income by total assets;
Size: Business size is measured by the natural logarithm of total assets.

4. RESULTS AND DISCUSSION

This section starts by providing the descriptive statistics for the collected variables as shown in the following Table 1. Three main points that can be highlighted here is the high standard deviation of working capital (30.47) and the high standard deviation of firm size (2.76) which suggests that there is huge deviation in firm size in the GCC and different policies followed for working capital management. In addition, the mean value for growth (0.09) suggests that listed companies in the GCC on average increase their sales by 9 percent, this information might be efficiently used by investors and creditors in their forecasting if companies might face healthier financial positions (Sardo & Serrasqueiro, 2022).

Table 1. Descriptive statistics

Variable	*Min*	*Max*	*Mean*	*St. Dev.*
Working capital	-95.26	320.62	100.94	30.47
Leverage	0.000	0.764	0.24	0.34
Growth	-0.03	0.64	0.09	0.26
Cash flow	-0.45	4.79	0.94	0.56
Profitability	-1.16	1.67	0.12	0.34
Firm size	15.37	32.49	19.64	2.76

In addition, based on the following Table 2, the correlation between the variables is provided and several points can be raised. There is a statistically significant positive correlation between the CCC and cash flow suggesting that the higher the cash flow, the higher the company expected CCC. In addition, there is a significant negative relationship between the CCC and leverage, growth, profitability, and firm size. This suggests that highly leveraged companies tend to deal with suppliers that provide more days for the payables. Furthermore, low-profitable companies tend to collect more current assets in order to meet short-term obligations (Moussa, 2019). Such a significant correlation between the variables suggests that when estimating the panel regression, results might be in the same direction and the significance might hold for the developed model.

Table 2. Correlation matrix

	CCC	*Leverage*	*Growth*	*Cash flow*	*Profitability*	*Firm size*
CCC	1					
Leverage	-0.156*	1				
Growth	-0.386**	-0.247**	1			
Cash flow	0.198*	0.027	-0.038	1		
Profitability	-0.587**	-0.657**	0.244**	-0.058	1	
Firm size	-0.279**	-0.285**	0.145**	-0.145*	0.145*	1

*Note: ** and * show statistical significance at 5% and 1%, respectively.*

Table 3. Random effect regression results

Variable	*Coefficient*	*Sig.*	*VIF*
(Constant)	6.254	0.069	1.10
Leverage	-0.364	0.004	1.04
Growth	0.272	0.025	1.37
Cash flow	0.134	0.000	1.23
Profitability	-0.261	0.000	1.12
Firm size	-0.760	0.028	1.03
Adjusted R^2	0.29		
Hausman test	0.068		

Note: Dependent variable — CCC.

According to the previous Table 3, the insignificance of the Hausman test favored the random effects technique results. As suggested in the results, leverage does affect the CCC significantly in a negative way, the lower the leverage, the higher the CCC. Specifically, low-leveraged companies tend to have more cash in order to finance its day-to-day operation. This comes in line with Alehegne et al. (2019) and Abbadi and Abbadi (2013). In other words, this implies that GCC companies with high leverage tend to have less working capital as in using the cash to service their loans (Hussain et al., 2022).

In addition, our results suggest that there is a significant negative relation between firm size and CCC and this comes in line with Tjandra et al. (2021). As explained by Mousavi and Jari (2012) and Tjandra et al. (2021), the smaller the firm, the higher the need for more working capital, and this, in turn, puts high pressure to collect efficiently the accounts receivables and sell more by having higher inventory turnovers. This result suggests that Gulf companies do not have a reduction in their credit terms with suppliers and this might be the reason for the negative relation (Jaworski & Czerwonka, 2022). The opposite is the results of Hussain et al. (2022), who argued that there is a positive significant impact of size on the CCC across the SAARC.

Furthermore, there is a negative significant impact of the profitability on the CCC. This suggests that low-profitable firms tend to provide more facilities to their customers and allow their customers more days to repay their purchases, this result comes in line with Jaworski and Czerwonka (2022). However, this contradicts the results achieved by Akgün and Memiş Karataş (2021) and Cuong and Nhung (2017). This result implies that low profitability urges GCC companies to provide more offers and be less conservative in their credit terms in order to affect their customer base to increase and this, in turn, affects the future operations to grow and compete (Safia, 2020; Tjandra et al., 2021).

An interesting result shown in Table 3 above is that growth and cash flows are positively and significantly affecting working capital proxied by the CCC. This result suggests that high-growth companies in the GCC tend to have a high CCC because they invest more in fixed assets in earlier stages and the working capital level is not a priority and a major concern. This comes in line with the findings of Wasiuzzaman (2018) and Moussa (2019). Furthermore, companies that possess high cash flow tend to have high working capital; this implies that companies with positive net present value projects get higher cash flows and this affects their management of working capital positively. This comes in line with the results of Jaworski and Czerwonka (2022) and Hussain et al. (2022).

5. CONCLUSION

Working capital management effectiveness would strike a balance between the trade-off between profitability and liquidity, thereby increasing the firm's worth. Managers would be better equipped to manage working capital effectively and efficiently

if they could identify the key variables that affect it. Managers should therefore be aware of key elements that have an impact on working capital management. Working capital is of great importance to companies, and therefore, our aim in this study was to indicate the most important determinants that affect working capital for non-financial companies listed on the GCC stock markets.

This paper applied the panel regression (fixed and random effects techniques) to investigate the determinants of working capital in the GCC region for the period 2008–2021 and collected the data for 135 out of 532 non-financial companies listed on the selected markets. The data was collected from the Refinitiv Eikon platform and any missing data were found in the annual reports for the companies or the stock market that the company is listed on.

This paper found that leverage, profitability, and firm size have a significant negative effect on working capital, while growth and cash flow have a positive significant impact on working capital. This implies that highly profitable, highly leveraged, and large companies tend to affect their working capital negatively whether because such companies need to serve their debts or include themselves in more projects. In addition, it might be related to higher costs related to larger companies in particular. Moreover, the positive impact between growth, cash, and working capital can be interpreted that higher cash flows can be a result of high growth and a higher customer base that affect the company's cash position positively.

It is highly recommended that future research would include more variables in the model or look for comparative studies that can compare developing to developed markets. This might help in checking if the differences are due to legal issues or microeconomic factors (firm-specific) or macroeconomic (market factors). The limitations of this study that should be taken into consideration are two main points: Firstly, the paper is applied to the GCC, and the Gulf markets are unique and different and this might limit the comparability with other markets. Second, the results of such topics might be affected by COVID-19 and this would add to the future research to look if before and after COVID–19 the determinants changed or not.

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