



The Effect of Political Connections and Affiliation with Business Groups on Changes in the Cost of Goods Sold and the Risk of Financial Turmoil

Mohammadreza Khosheghbal

Master of Accounting, Department of Accounting, College of Humanities, West Tehran Branch, Islamic Azad University, Tehran, Iran
(Corresponding Author)
Khosheghbal1992@gmail.com

Samira Zarei

Assistant Professor, Department of Accounting, College of Humanities, West Tehran Branch, Islamic Azad University, Tehran, Iran
Zarei.s.90@gmail.com

Khadijeh Khodabakhshi Parijan

Assistant Professor, Department of Accounting, College of Humanities, West Tehran Branch, Islamic Azad University, Tehran, Iran
Parijan.kh@gmail.com

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Abstract

Objectives: Business groups are common in economies worldwide and play a significant role in both emerging and developed economies. While business groups have a legal personality in most countries, they also have an economic personality from an economic and accounting perspective. A business group typically consists of a collection of companies operating in one or multiple markets or industries under the supervision of a parent company or joint control. Essentially, a business group refers to a group of legal entities with individual legal personalities but a unified reporting structure, operating in diverse markets, and managed under the financial oversight of the parent unit.

Design/methodology/approach: The statistical method used in this research is multivariate regression using the panel data method. This study explores the impact of political connections and reliance on business groups on changes in the cost of goods sold and the risk of financial turmoil. A sample of 111 firms listed on the Tehran Stock Exchange was chosen using the systematic elimination method. The research analyzes the influence of political connections and affiliation with business groups on changes in the cost of goods sold and the risk of financial turmoil from 2017 to 2022, with a total of 666 observations.

Results: The research findings suggest that political connections and reliance on business groups have a negative impact on changes in the cost of goods sold and increase the risk of financial turmoil for companies.

Innovation: This research is the first to examine the impact of political connections and affiliation with business groups on changes in the cost of goods sold and the risk of financial turmoil. By presenting new evidence, this study can contribute to the literature on this subject.

Keywords: Political Relations, Dependence on Business Groups, Changes in the Cost of Goods Sold, Risk of Financial Turmoil.

1. Introduction

Trade groups have a unique organizational structure that consists of several legally independent companies that are formally and informally linked together. However, there has been little research done on financial reporting methods in such companies. Business groups play a significant role in many emerging and developed economies. A business group is a collection of companies operating in various markets under common financial or administrative control, with members connected through personal, ethnic, or commercial backgrounds. (Chang et al., 2020). Therefore, reliance on business groups can influence changes in the cost of goods sold and the financial turmoil risk for companies.

Due to the availability of international evidence regarding the impact of political connections on cash balances, Chang et al. (2020) decided to investigate this relationship. The index of political relations has three dimensions: economic, social, and personal. The economic dimension refers to the percentage of government ownership of companies' shares, where more than fifty percent of the shares belong to the government. The social dimension involves government-affiliated institutions investing in the company's ownership structure, indicating government support. This dimension includes shares held by state and public companies in the total capital stock, which encompasses insurance companies, financial institutions, banks, state companies, and other government components. The personal dimension of political relations includes companies whose ownership structure includes one of the major shareholders (a shareholder that owns more than 10 percent of the company's shares) being a former or current government figure. However, recent research literature suggests that the political connections of a company are often evident through the presence of major investors affiliated with the government in the company's ownership structure. Facio (2006) and Lin et al. (2022) define this as having "at least one major shareholder (someone who owns at least 10 percent of the shares and controls the vote) or one of its senior

executives (CEO and board members) who is a member of parliament, a minister, head of government, or closely related to a prominent politician. It is important to note that the presence of shareholders with political connections in companies can significantly affect all aspects of the company's activities and performance. This influence can be observed in the form of incoming or outgoing cash flows, which can affect profitability, changes in the cost of goods sold, and the risk of financial turmoil (Lin et al., 2022). Therefore, the focus of this research is to examine the effect of political connections and dependence on business groups on changes in the cost of goods sold and the risk of financial turmoil in firms of business groups listed on the Tehran Stock Exchange, as well as the factors influencing it.

This research examines the impact of political connections and affiliation with business groups on changes in the cost of goods sold and the risk of financial turmoil. The study begins with an outline of the theoretical foundations and background related to the subject, followed by an explanation of the research method and hypotheses derived from the problem and theoretical foundations. The results of the hypothesis test are then presented, and finally, conclusions and suggestions are provided.

2. Theoretical foundations and research background

This study examines the impact of political connections and affiliation with business groups on changes in the cost of goods sold and the risk of financial turmoil. Trade groups have become one of the most important types of organizations worldwide, especially in emerging economies, where they play a crucial role in economic development. They are defined as a set of companies with independent legal rights where the ultimate majority shareholders control the management of the group. As a legal entity, each member company of a business group prepares its financial statements, which are certified by an auditor. Therefore, this research examines the factors influencing the member companies of the group, the



conditions for changes in the cost of goods sold, and the risk of financial turmoil in business groups. Similar to studies related to multidimensional organizations, it is essential not only to examine the behaviors or profitability of member firms but also to examine the group effects of the management of different member firms under the umbrella of a business group (Chang et al., 2020).

Despite the importance of changes in the cost of goods sold and the risk of financial turmoil, little research has been done in the field of changes in the cost of goods sold and the risk of financial turmoil in business groups. Past research that has been conducted on business groups has focused on various aspects. Some studies have investigated the effects that business groups have on profitability, such as Chang (2003), Joh (2003), Khanna and Palpo (2000), and others have investigated the effects of business groups on dividend policy, such as Manos et al. (2012), the relationship between business groups and earnings management, Kim and Yee (2006), and the effect of business groups on the profit information system, as reviewed by Jung and Kwon (2002). Lin et al. (2022) researched the impact of political connections and business groups on changes in the cost of goods sold and the risk of financial turmoil in Chinese companies, adding new empirical evidence to the research on business groups. In this research, following Lin et al. (2022), we tried to investigate the effect of political connections and affiliation to business groups on changes in the cost of goods sold and the risk of Iranian financial turmoil. To complete the research process in the field of groups, we have commercial and political connections.

Today, business groups play a prominent role in financial markets. The member companies of business groups not only utilize the resources and capabilities of their own companies, but also have the unique ability to leverage the technology, capital, human resources, products, and services of other member companies within the group. With a common ownership structure in place within these groups, the management of

shares of companies under control is a key issue that is often raised.

The increasing growth and expansion of society's needs, along with the growth of social activities, led to the creation of large companies. Numerous small and large capital owners provided the capital of these companies. The growth and development of joint stock companies increased the number of capital owners. The management of the company's operations was entrusted to limited people as experienced managers, and the separation of ownership from management (agency theory) was proposed. Shareholders needed information to ensure the optimal and effective use of their funds, measure the performance of managers, etc. This caused the companies to submit financial statement reports (Haji Beigi, 2015). The possibility of bad intentions in the preparation and adjustment of these financial statements by the board of directors of the companies caused the asymmetry of information to cause a phenomenon called changes in the cost of goods sold and the risk of financial chaos.

This research examines the effect of political connections and dependence on business groups on changes in the cost of goods sold and the risk of financial turmoil. Business groups around the world are an important pillar of organizations, especially in emerging economies, and play an important role in economic development. They are defined as a set of legally independent companies in which the majority of ultimate shareholders control the management of the group. As with multiple organization studies, it is important to examine not only the behavior or profitability of member firms but also the effects of the management group of different firms within a business group. (Lin et al., 2022).

It was also documented in the existing literature that political connection provides valuable resources to the firm through easy access to external resources and relationship-based contracts and affects investment decisions (Clasens et al., 2008; Hosten et al., 2014; Piotrowski and Zhang, 2014). On the other hand, political connections can help reduce the problems caused by financial constraints and provide the



necessary capital for the company's investment activities. Despite this, access to a lot of foreign capital through political connections encourages the company to invest below the optimal level. On the other hand, political connections may be associated with severe government intervention and deviation from the ultimate goals of the company. Therefore, to achieve social or political goals that the government is interested in, senior managers of companies were forced to invest in unprofitable, politically desirable Projects that cause investment inefficiency and poor company performance (Pan and Tian, 2017). In this way, companies with poor political relations will have low performance due to ignoring the value of the company. Therefore, the effect of political communication on the company's investment process is different and needs more research. It should also be kept in mind that this type of investment under the influence of political relations has an impact on the profitability of companies and ultimately has an impact on the changes in the cost of goods sold and the risk of financial turmoil under their ownership.

Therefore, in this research, the main approach is the effect of political connections and affiliation to business groups on changes in the cost of goods sold and the risk of financial turmoil in companies listed on the Tehran Stock Exchange and the factors affecting it.

3. Research background

Goa et al. (2024) investigated the contagion effect of overconfidence in business groups. The results prove that if one group member shows overtrust, other group members are more likely to overtrust in the following year, proving the contagion effect of overtrust in the business group. Further analysis shows that sociological theory, psychological theory, and business group theory can explain the mechanism of the contagion effect of overconfidence. In addition, this paper also shows that there are many factors, from macro to micro, which may affect this effect. Our findings not only enrich research on business group contagion effects but also provide empirical evidence as to why overtrust has become a widespread

psychological phenomenon. Chong et al. (2023), in research titled Investigating the effect of being a member of a business group with commercial credit on the financing of Korean companies, the results showed that the companies that are members of business groups are less in need of external financing due to the high power of providing financial resources within the group. The business credit of this company is less for external financing.

Lin et al. (2022) investigated the effect of political connections and affiliation with business groups on changes in the cost of goods sold and the risk of financial turmoil. The results of their research showed that if the companies have political connections or belong to business groups, they would be less affected by changes in the cost of goods sold and the risk of financial turmoil.

Gupta (2023) Investigates geopolitical risk and investment-cash flow sensitivity: An empirical analysis for Indian conglomerate and non-conglomerate firms. The results show that the impact of geopolitical risk on investment risk-cash flow sensitivity is less (more) for companies affiliated with independent business groups. Furthermore, the results of this study are robust to alternative measures of geopolitical risk (the geopolitical risk law and geopolitical risk), the dependent variable, and the exclusion of the crisis period and COVID-19.

Keoru et al. (2023) investigated the non-financial goals of owners and the diversification and internationalization of business groups. Studies of business groups, a collection of legally separate firms operating in unrelated industries under common control, tend to compare the behavior of firms affiliated with business groups and firms that are independent firms. Unfortunately, this ignores the diversity between business groups based on their controlling owners. Therefore, in this conceptual article, they studied how the types of controlling owners affect the diversity and internationalization of business groups.

Hiran et al. (2023) investigated the influence of indigenous culture and business group affiliation on



the corporate governance of African companies. The results showed that manufacturing companies less relate business group ownership to the adoption of Anglo-American corporate governance. However, this relationship reversed in the institutional context of higher tribalism, while it was similarly exacerbated in the context of low tribalism.

Yeh and Lin (2022) investigated the sensitivity of cash flow in business groups and the structure of institutional shareholders. The results of their research show that transactions related to business groups are related to investment opportunities and the type of shareholding structure, which support both the financial advantages and agency hypotheses. Evidence shows that business groups transfer intergroup capital from low-growth to high-growth member firms, but the results show that the type of control reinforcement structure affects these transitions.

Guo et al. (2021), in a study titled Business Groups and Corporate Social Responsibility: Evidence from China, examine the effect of corporate business group affiliation on their corporate social responsibility performance in China. They found that companies with a dual status of being a business group member and a state-owned enterprise (SOE) at the same time have poor CSR performance. Their findings are consistent with the view that participation in corporate social responsibility is a strategy for companies seeking political legitimacy from the government and the public in general as legitimacy. Business group affiliation and SOE identity lend legitimacy to the company and reduce the need for corporate social responsibility activities.

Cai et al. (2020), in research entitled "The Effect of Business Groups on the Cash Obtained from Operations," the main purpose of this research is to examine the effects that being affiliated with a business group can have on the cash obtained from the operations and investments of companies. Member of the group and have financial flexibility. This research was conducted in the period 2000–2019. The results of this research indicate that dependence on business groups causes an increase in cash obtained from

operations, investments, and flexibility. It has been financed.

Rezazadeh et al. (2023) investigated the relationship between dependence on business groups and discretionary profit mechanisms about the role of audit quality. The research findings indicate that affiliation with business groups has a significant and positive effect on profit management. In addition, the results showed that audit quality has a negative moderating role in the relationship between affiliation to business groups and profit management. That means audit quality reduces the positive relationship between the relationship between affiliation to business groups and earnings management.

Azizi et al. (2022) investigated the relationship between membership in a business group and business credit, emphasizing the financial limitation and competitiveness of the product market in companies admitted to the Tehran Stock Exchange. The results showed that there is a direct relationship between membership in a business group and business credit, and the competitiveness of the product market aggravates the above relationship, but financial restrictions weaken the above relationship.

Mousavi et al. (2022) investigated the role of the business group in the relationship between financial performance and risk in firms listed on the Tehran Stock Exchange. The results of the hypothesis test showed that commercial uncertainty has a significant direct effect on the company's risk. In addition, financial leverage has a significant direct impact on the company's risk.

Shakrian et al. (2021) investigated the relationship between dependence on business groups and the risk of falling stock prices, taking into account the role of the adjusting variable of the company's market value in companies admitted to the Tehran Stock Exchange. The results showed that there is a negative and significant relationship between business groups and the risk of falling stock prices.

Abri et al. (2019) investigated the effect of profitability on capital structure by considering the moderating role of membership in business groups



through the structural equation modeling approach. The results showed that profitability has a negative and significant effect on the capital structure. On the other hand, the examination of this relationship in both groups of companies that are members of commercial and independent groups shows that the managers of independent companies show less tendency to use debt in the capital structure as compared to the companies that are members of commercial groups.

Toloui et al. (2019) investigated the relationship between affiliated business groups and profit management. The results showed that business groups perform more profit management than other companies, and there is no significant difference between business groups and profit management in the use of large and small auditors.

Mohammadi et al. (2019) investigated the relationship between affiliation to the business group and the simultaneity of stock prices in companies listed on the Tehran Stock Exchange. The results obtained in this study show that there is no significant relationship between direct and indirect dependence on the business group and the coincidence of stock prices.

Rezaei et al. (2018) investigated the membership in business groups and sustainability reporting of the company. The results show that membership in business groups improves the level of sustainability reporting by companies. In addition, the results of additional analysis indicate that in larger companies, the relationship between membership in business groups and the level of sustainability reporting is stronger. Companies affiliated with business groups have more incentives for sustainability reporting because they are less concerned about short-term financial benefits.

Badvardnehandi et al. (2017) investigated the effect of political connections on overinvestment and company performance. The results show that political connections have a positive effect on investment and a negative effect on company performance. Political connections can help companies obtain more financing, but access to business loans originating from political connections creates additional credit and

increases financing costs. In addition, the intervention of politicians may cause distortions in the allocation of social resources and lead to overinvestment and a weakening of the company's performance.

4. Research hypotheses

- 1) Political connections have an effect on changes in the company's cost of goods sold.
- 2) Political connections have an effect on the risk of financial turmoil for companies.
- 3) Dependence on business groups has an effect on changes in the company's cost of goods sold.
- 4) Dependence on business groups has an effect on the risk of financial turmoil for companies.

5. Research method

According to the scientific classification in terms of the purpose of this research, it is of the type of applied research and since the subject of this research is the effect of political connections and dependence on business groups on changes in the cost of goods sold and the risk of financial turmoil, therefore this research can be classified as descriptive research. From a theoretical point of view, it is a part of proof research, and from the point of view of reasoning, it is also a deductive-inductive part. Also, the research methodology is post-event, which means that the research is based on past information. The information used in this research is from the financial statements and the notes attached to the financial statements, as well as from the basic information of the stock exchange board (compiled in Rahevard Novin software).

The statistical population of this research is the companies accepted in the Tehran Stock Exchange.

Sampling was done using the systematic sampling method in such a way that the companies that had the conditions to be in the sample were selected as samples, and if they did not have the conditions, they would be excluded from the sample.

A statistical sample should have the following conditions:



- 1) Be admitted to the Tehran Stock Exchange before 2016.
- 2) It should not be part of investments, banks, or insurance companies.
- 3) Their financial year should be related to the end of March.
- 4) The information needed for this research is also available.

According to the limitations considered, the number of statistical samples was 111 participants.

5.1. Research model and variables:

To investigate the relationship between political connections on changes in the cost of goods sold in companies listed on the Tehran Stock Exchange, a regression model will be used as follows:

$$\text{Log } COGS_{it} = \beta_0 + \beta_1 PC_{it} + \beta_2 Cash_{it} + \beta_3 Size_{it} + \beta_4 Leverage_{it} + \beta_5 M/B_{it} + \beta_6 CF_{it} + \beta_7 Capex_{it} + \beta_8 Divd_{it} + \beta_9 CFVol_{it} + \varepsilon_{it}$$

LogCOGS = logarithm of changes in the cost of goods sold

PC = political connections (a dummy variable equal to 1 if the company is politically connected and 0 otherwise) (Facio 2006 and Lin et al. 2020 defined a company as a politically connected company if "At least one of its major shareholders (one who controls at least 10% of the voting shares) or one of its senior executives (CEO, Chairman of the Board of Directors, Deputy Chairman of the Board of Directors) is a Member of Parliament, a Minister or is the head of state, or is closely related to a prominent politician.)

$$Cash_{it} = \log \frac{(Cash + Cash equivalents)}{net Assets}$$

Cash = the company's cash balance at the end of the financial year

Cash equivalents = cash assets that can be quickly converted into cash (cash equivalents that are

classified in the company's cash balance, such as bonds...)

net Assets = net assets of the company, calculated as follows:

Net assets = total assets – (cash + cash equivalents)

Size = company size (equal to the natural logarithm of total company assets)

Leverage = financial leverage of the company (total liabilities divided by total assets)

M/B = market value of the company divided by the book value of the company

CF = operating cash of the company (operating cash of the company divided by the total assets of the company)

Capex = capital expenditure (capital expenditure of the company divided by the total assets of the company)

DIVD = 1 if the company has distributed cash dividends and 0 otherwise

CFVol = standard deviation of cash flows of the last three years

To investigate the relationship between political connections on the risk of financial turmoil in companies listed on the Tehran Stock Exchange, a regression model will be used as follows:

$$DR_{it} = \beta_0 + \beta_1 PC_{it} + \beta_2 Cash_{it} + \beta_3 Size_{it} + \beta_4 Leverage_{it} + \beta_5 M/B_{it} + \beta_6 CF_{it} + \beta_7 Capex_{it} + \beta_8 Divd_{it} + \beta_9 CFVol_{it} + \varepsilon_{it}$$

DR = is equal to the risk of financial turmoil in companies

In this research, to measure the risk of financial turmoil, Richard Toffler's (2007) model is used, which is as follows:

$$DR = 1 - \frac{e^{-z-score}}{1 + e^{-z-score}}$$

Z-score = Altman bankruptcy prediction model which is calculated as follows:



Z

$$\begin{aligned}
&= 1.2 * \frac{\text{turnover in capital}}{\text{total assets}} + 1.4 \\
&* \frac{\text{Retained earnings}}{\text{total assets}} + 3.3 \\
&* \frac{\text{taxes and interest from previous income}}{\text{total assets}} + 0.6 \\
&* \frac{\text{market value of equity}}{\text{book value of debt}} + 0.999 * \frac{\text{total sales}}{\text{total assets}}
\end{aligned}$$

According to Richard Toffler's research in 2007, the risk of financial turmoil will be calculated using Z obtained from Altman's model, which is placed in the above equation.

A regression model will be used as follows to investigate the relationship between dependence on business groups and changes in the cost of goods sold in companies listed on the Tehran Stock Exchange:

$$\begin{aligned}
\text{Log } COGS_{it} = & \beta_0 + \beta_1 BG_{it} + \beta_2 Cash_{it} + \beta_3 Size_{it} \\
& + \beta_4 Leverage_{it} + \beta_5 \frac{M}{B}_{it} \\
& + \beta_6 CF_{it} + \beta_7 Capex_{it} \\
& + \beta_8 Divd_{it} + \beta_9 CFVol_{it} + \varepsilon_{it}
\end{aligned}$$

BG = dependence on business groups (if the company is affiliated with a business group, it is equal to 1, and otherwise, it is equal to 0) (business groups mean companies that invest in each other, and ultimately the main company or the parent company should prepare consolidated financial statements)

To investigate the relationship between dependence on business groups and the risk of financial turmoil in companies listed on the Tehran Stock Exchange, a regression model will be used as follows:

$$\begin{aligned}
DR_{it} = & \beta_0 + \beta_1 BG_{it} + \beta_2 Cash_{it-1} + \beta_3 Size_{it} \\
& + \beta_4 Leverage_{it} + \beta_5 \frac{M}{B}_{it} \\
& + \beta_6 CF_{it} + \beta_7 Capex_{it} \\
& + \beta_8 Divd_{it} + \beta_9 CFVol_{it} + \varepsilon_{it}
\end{aligned}$$

6. Research findings:

Conducting the hypothesis test requires establishing the assumptions of the significance of the research variables, homogeneity of variance, and lack of autocorrelation. If it is not established, the obtained results are not reliable and this causes wrong conclusions. After making sure that the regression assumptions have been established, the research hypotheses have been tested.

As shown in the above table, all research variables in the unit root test are smaller than 0.05, which indicates that the variables are significant. This means that the mean and variance of the variables over time and the covariance of the variables were constant between different years. As a result, using these variables in the model does not cause false results.

As the results are presented in the above table, for all the variables, the obtained values are below 5, so there is no collinearity between the variables, and the obtained regression estimate is valid.

Further, to avoid ignoring the violation of the assumption of homogeneity of variance and the occurrence of possible false results in the estimation process, it is necessary to use the appropriate method to detect the presence or absence of heterogeneity of variance with a valid test. For this purpose, the Brush-Pagan test was used with the null hypothesis that there is no heterogeneity of the variance of the remaining sentences.

The results obtained from this test, which are reflected in the table below, indicate the confirmation of the null hypothesis that the variances are the same for the model, so there is no variance heterogeneity problem in the model ($p > 0.05$).



Table 1. The results of the mean test of the variables

Possibility	statistics	Symbol
0.000	54.7018	LOGCOGS
0.000	64.7564	DR
0.000	50.9512	BG
0.000	132.649	PC
0.000	103.856	CAPEX
0.000	98.2398	CASH
0.000	105.095	CF
0.000	105.001	CFVOL
0.000	112.707	DIVD
0.000	126.804	LEVERAGE
0.000	98.686	MB
0.000	129.645	SIZE

Table 2. Variance increase factor test results

VIF value	variable symbol	VIF value	variable symbol
1.129401	BG	1.143484	PC
1.123659	CASH	1.121605	CASH
3.854972	SIZE	3.935098	SIZE
1.613989	LEVERAGE	1.622665	LEVERAGE
1.658023	MB	1.690047	MB
1.526560	CF	1.518044	CF
1.064935	CAPEX	1.061616	CAPEX
1.206992	DIVD	1.207362	DIVD
3.787094	CFVOL	3.763459	CFVOL

Table 3. The results of the heterogeneity of variances test

Result	p-value	The value of the statistic	sample
Absence of variance heterogeneity	0.3426	1.368	Model 1
Absence of variance heterogeneity	0.7864	0.4851	Model 2
Absence of variance heterogeneity	0.5334	0.8904	Model 3
Absence of variance heterogeneity	0.5126	0.9138	Model 4

Testing hypotheses

The significance level of the f statistic for the first hypothesis of the research is less than five percent, so the first hypothesis of the research is confirmed considering that the value of the t statistic related to political relations is equal to -13.551 and its significance level is less than 0.5 is 0. In addition, according to the t statistic, it can be said that political

connections have a significant inverse relationship with the changes in the cost price of the company's sold goods, and this relationship means that political connections reduce the changes in the cost price. The goods sold by the companies have become

The significance level of the f statistic for the second hypothesis of the research is less than five percent, so the second hypothesis of the research is confirmed considering that the value of the t statistic



related to political relations is equal to -15.165 and its significance level is less than 0.5 is 0. Also, according to the t statistic, it can be said that political connections have a significant inverse relationship with the company's financial turmoil risk, and this relationship means that political connections have reduced the companies' financial turmoil risk.

The significance level of the f statistic for the third hypothesis of the research is less than five percent, so the third hypothesis of the research is confirmed considering that the value of the t statistic related to the dependence on business groups is equal to -13.445 and its significance level is less than It is 0.05. Also, according to the t statistic, it can be said that dependence on business groups has a significant inverse relationship with changes in the cost of goods

sold by the company, and this relationship means that dependence on business groups causes a decrease in changes in the cost of goods sold by companies.

The significance level of the f statistic for the fourth hypothesis of the research is less than five percent, so the fourth hypothesis of the research is confirmed considering that the value of the t statistic related to dependence on business groups is equal to -16.543 and its significance level is less than It is 0.05. In addition, according to the t statistic, it can be said that dependence on business groups has a significant inverse relationship with the risk of financial turmoil of the company, and this relationship means that dependence on business groups reduces the risk of financial turmoil of companies. has been

Table 4. The results of the first research hypothesis test:

Variables	Estimated coefficient	standard error	Test statistics t	Test probability t
PC	-0.395655	0.02919	-13.5514	0.000
CASH	0.051501	0.01327	3.8791	0.0001
SIZE	0.029322	0.008533	3.4365	0.0006
LEVERAGE	0.117675	0.044494	2.6447	0.0086
MB	0.063674	0.012061	5.2795	0.000
CF	0.192375	0.056391	3.4114	0.0007
CAPEX	0.076135	0.114967	0.6622	0.5081
DIVD	0.044836	0.019211	2.3338	0.0199
CFVOL	0.036886	0.01687	2.1864	0.0291
C	0.208886	0.095113	2.1961	0.0284
The coefficient of determination	0.746821	Watson distance criterion		2.214587
Adjusted coefficient of determination	۰.۷۱۱۰۶۳			
Fisher's F statistic	۱۹۸.۰۷۰۳			
Fisher's F statistic	۰.۰۰۰۰			

Table 5. The results of the second research hypothesis test:

Variables	Estimated coefficient	standard error	Test statistics t	Test probability t
PC	-0.5125	0.033796	-15.1654	0.000
CASH	0.5694	0.034419	16.5435	0.000
SIZE	0.07996	0.024914	3.20963	0.0014
LEVERAGE	0.1668	0.06296	2.64938	0.0083
MB	0.00981	0.004509	2.17695	0.0299
CF	0.00035	0.00837	0.04269	0.966
CAPEX	0.01532	0.11001	1.39261	0.1643
DIVD	0.01489	0.00621	2.39781	0.0168



Variables	Estimated coefficient	standard error	Test statistics t	Test probability t
CFVOL	0.00726	0.02913	0.24926	0.8032
C	0.06104	0.00309	19.7183	0.000
The coefficient of determination	0.76412	Watson distance criterion		1.94801
Adjusted coefficient of determination	0.72514			
Fisher's F statistic	21.4152			
Fisher's F statistic	0.000			

Table 6. The results of the third research hypothesis test:

Variables	Estimated coefficient	standard error	Test statistics t	Test probability t
BG	۰٫۳۹۵۶۵۵	۰٫۰۲۹۱۹۶	۱۳٫۴۴۵۴۸	0.000
CASH	۰٫۰۵۱۵۷۹	۰٫۰۱۳۲۸۹	۳٫۸۸۱۴۰۹	0.000
SIZE	0.02917	0.00844	3.45437	0.0006
LEVERAGE	0.11786	0.04437	2.65601	0.0081
MB	0.06348	0.01194	5.31461	0.000
CF	0.19258	0.05654	3.40566	0.0007
CAPEX	0.07605	0.11514	0.66047	0.5092
DIVD	0.04481	0.01920	2.33317	0.0199
CFVOL	0.03693	0.01692	2.18265	0.0294
C	0.20714	0.09535	2.17225	0.030
The coefficient of determination	0.69524	Watson distance criterion		2.325416
Adjusted coefficient of determination	0.65413			
Fisher's F statistic	187.470			
Fisher's F statistic	0.000			

Table 7. The results of the fourth research hypothesis test:

Variables	Estimated coefficient	standard error	Test statistics t	Test probability t
BG	-0.5694	0.034419	-16.5435	0.000
CASH	0.061048	0.003096	19.7183	0.000
SIZE	0.512532	0.033769	15.16545	0.000
LEVERAGE	0.211087	0.023465	8.99602	0.000
MB	0.0042	0.000189	22.27685	0.000
CF	0.569406	0.034419	16.54353	0.000
CAPEX	0.053469	0.012367	4.320944	0.000
DIVD	0.329886	0.07473	4.414362	0.000
CFVOL	0.813153	0.034404	23.63566	0.000
C	0.186429	0.034703	5.372129	0.000
The coefficient of determination	0.720014	Watson distance criterion		1.824516
Adjusted coefficient of determination	0.703492			
Fisher's F statistic	301.8516			
Fisher's F statistic	0.000			



7. Discussion and conclusion:

It is well documented in the existing literature that political communication provides valuable resources for companies through easy access to external resources and relationship-based contracts, affecting key decisions that affect company performance.

On the other hand, dependence on business groups is linked to the long-term orientation of companies. Ownership of a business group is associated with longer investment horizons, which can reduce manager's incentives to make risky investment decisions. Generally, the research literature indicates that companies with financing needs requiring commercial affiliation have greater access to financial resources. This research aims to investigate the role of commercial dependence on factors related to operational decisions that can affect the risk of financial turmoil and fluctuations in the cost of goods sold.

The results obtained from testing research hypotheses showed that political connections and affiliation with business groups have a negative effect on changes in the cost of goods sold and the risk of financial turmoil for companies. These results are consistent with the findings of Lin et al. (2022), Mousavi (2022), Shakrian et al. (2021) and Nahandi et al. (2018).

According to the results obtained from the test of the research hypotheses, it is suggested that investors and other actors in the capital market consider political connections as an effective factor in the changes in the cost of goods sold by companies. The results show that by increasing the number of political connections, the amount of changes in the company's cost of goods sold will decrease. Therefore, companies with higher political connections have lower fluctuations in their cost prices, leading to higher profitability. This can be attributed to companies with political connections having access to necessary resources to sustain their operations, as well as access to cheaper financial resources, higher information, and relationships with influential individuals. This ultimately results in increased profitability, which in turn boosts working

capital and reduces changes in the cost of goods sold. Shares of companies with stronger political relations may be more favorable for investors to hold or purchase.

It is recommended to consider purchasing and holding shares of companies with strong political connections. Research shows that companies with more political connections have lower financial risks, as they are better equipped to handle debts and make profitable investments. Shareholders and investors should also consider the impact of business group affiliations on changes in the cost of goods sold. Companies affiliated with larger business groups receive support and resources, leading to increased profitability and cash flows. These companies are more stable in terms of the cost of goods sold, making their shares a good investment option. Companies affiliated with business groups and with lower financial risk are recommended for investment. Affiliation with business groups can increase cash flow and reduce financial risks, providing companies with the necessary resources for current operations and future projects. These companies are likely to generate higher profits for shareholders, making them a suitable investment choice.

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