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The Social Capital and Cash Holdings in an Emerging Economy

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Abstract: The present study aims to evaluate the relationship between social capital and cash holdings in firms. The population under study comprises all listed companies on the Tehran Stock Exchange. A total of 175 firms (1050 year-firm) were selected from 2014 to 2020 to evaluate the relationship between variables using the systematic elimination method. Moreover, the moderating role of financial reporting quality in the relationship between social capital and cash holdings was also studied. This paper used multivariable linear regression (panel data) and the EViews software to implement the study's objectives. The present study results show a negative relationship between the social capital of firms and cash holdings and a positive association between social capital and financial reporting quality. In other words, cash holdings drop with the increase in social capital. Further, financial reporting quality improves with the increase in social capital. The financial reporting quality moderates the relationship between the social capital of firms and cash holdings. This paper indicates that the region's social capital, where the firm is located, has a significant role in contributing to its cash value. The current study is the first to assess social capital structure in the cash holdings literature. The impacts of social capital contribute to financial outputs. Social capital has a positive economic result against strong cooperation norms and dense social networks. Few studies analyzed the effect of social capital on firms' decision making. In this area, the present study contributes to the literature development and the impact of social capital on firms' results.

Keywords: social capital; cash holdings; financial reporting quality; emerging markets; corporate governance

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1. Introduction

Social capital can be considered a set of values or norms that facilitate interaction among members (Guiso et al. 2004; Lotfi et al. 2022). Some studies are running on the effect of social capital on corruption, crime, and costs related to financial transactions (Buonanno et al. 2009; Lari Dashtbayaz et al. 2020; Shafeeq Nimr Al-Maliki et al. 2022). The unexplored effect of social capital on the tendency of managers to save cash is still unclear. The primary question is why firms hold cash despite agency costs and opportunities related to cash assets (Salehi et al. 2020). Most of the studies are concerned with the determining factors and the consequences of cash holdings of firms, including financial constraints, foreign financial supply risk (Harford et al. 2014), product market threats (Hoberg et al. 2014), debt liabilities (Yung and Nafar 2014), national culture (Chen et al. 2015), ownership structure and firm control (Kuan et al. 2012), and a number of other particular firm variables (Amess et al. 2015).

There are several reasons for explaining the cash holdings of the firm. First, cash holdings' tendency indicates that managers reserve cash without paying no property and do not demand foreign financial supply (Miller and Orr 1966; Salehi et al. 2021a). Miller and Orr (1966) noticed that the optimum demand for cash occurs when a firm bear the transaction costs by converting a noncash financial property to cash and using cash (Salehi and Sehat 2019). The preventive motivation for cash holdings explains the modifications in the capital market and suggests that firms hold cash to combat unfavorable shocks in

the presence of higher costs than foreign investors (Han and Qiu 2007; Almeida et al. 2004; Mohammadi et al. 2018). Agency motivation for cash holdings is based on the assumption that committed managers waste the cash, for example, through overinvestments despite few investment opportunities (Jensen 1986). Harford (1999) indicates that firms with larger cash holdings participate more in absorption to lower the value added. Foley et al. (2007) suggest that the tax consequences of foreign income reimbursement increase the motivation of U.S. companies for more cash holdings. Such assumptions make the cash holdings' motives distinctive but refute the effect of social capital, which largely shapes the reasons for cash holdings.

Social capital is shaped by a particular set of unofficial values, norms, and networks that cooperate, facilitate collective action (Fukuyama 1997; Woolcock 2010) and have mutual trust (Guiso et al. 2004). The strength of cooperative norms and social networks' density has led to the frank behavior and growth of distorted behavior punishments (Coleman 1994; Spagnolo 1999). Human beings, including managers, create ideas using social norms and consider the costs of deviation from the accepted norms (Cialdini et al. 1991; Milgram et al. 1969). Such a norm may contain efficient use of tax revenues, namely, cash and other cash resources. As mentioned previously, it is vital to tie between social capital and the motivation for a cash reserve.

Based on Hofstede's cultural dimensions, locally, Iranian cultural norms and aspects suggest that Iran possesses a mediated score of 58 on the power distance dimension, suggesting that Iran is a hierarchical society. Second, this country, with a score of 41, might be counted as a collectivistic society. In this sense, hierarchy means, for example, in an organization showing basic occupational inequalities, systemization is commonplace, juniors are expected to receive orders, and the desirable bosses are known as individuals looking for benevolent activities. Additionally, collectivism may manifest in a long-run and closed loyalty to the members of a group, similar to a family or extended interactions. Thus, these two dimensions of the Iranian culture reveal that accepting social norms and obeying social laws, besides committing to social groups, play an important role in the Iranian lifestyle, which might be translated as the high rate of social capitalization in Iran. Third, Iran scored 43 on the masculinity index, meaning there might be relatively moderated conflicts between two opposing genders through compromise and negotiation. Motivations, including flexibility and free time, are desirable, and the concentration is mostly on well-being. Fourth, the high rank of uncertainty avoidance of Iranian people, with a score of 59, demonstrates that Iranian people are against ambiguity. Generally, it is believed that countries showing a great rate of uncertainty avoidance usually maintain restricted codes of behavior and belief and are impatient with unconventional behavior and opinions. A strong emotional need might be expected for rules and regulations in such societies. Fifth, Iran has a 14 score for long-term orientation, which classifies this country as a normative nation. Its people have severe concern about establishing the complete truth, are normative in their thinking, and greatly respect traditions. In contrast, its people may show a relatively low tendency to save for rainy days and are looking to achieve snap results. Finally, the low rate of individualism, with a score of 40, shows that Iran has a restraint norm. The Iranian people feel that their activities are restricted by social and cultural norms and perceive that indulging themselves might be an antisocial action. Thus, again this feature emphasizes the socialization of the Iranian culture.

People of the same social capital region, who benefit from a high level of friendship and a social-oriented approach, are expected to have a strong tendency toward commitment and mutual trust (Portes 1998; Moradi et al. 2022). Their dense network also specifies these regions, leading to information sharing. The perception of people involving managers of large corporations of the above social capital regions is trustful. It allows the firms to easily gain access to foreign costs and lower the expensive costs, so there is a less urgent need for cash. Therefore, such a view is in line with the preventive motive of cash holdings. In general, this paper tries to answer the following questions:

Is there a significant relationship between companies with social capital and cash holdings? Is there a significant relationship between social capital and financial reporting quality? Does the quality of financial reporting modify the relationship between social capital and cash holdings? Do the results conform to the previous studies in this field or not?

Studying the effects of the social capital of the firm on cash holdings is essential due to the following reasons:

The present study helps us better perceive the reasons for cash holdings by large corporations. The previous studies show the increasing trend of cash inventory among firms. Given the opportunity cost and agency problem related to cash holdings, it is necessary to delineate the slight differences in cash holdings. The study's literature mainly considers unique factors for describing the firm's cash holdings from the past to the present. It is worth mentioning that this project is the first study on the structure of social capital in the literature on cash holdings. Social capital has a positive economic output against strong cooperation norms and dense social networks. Few studies (Hasan et al. 2017a; Jha and Chen 2014; Jha and Cox 2015) have focused on the impact of social capital on a firm's decision making. This paper contributes to the literature development on the effect of social capital on firm results.

The rest of the paper is structured as follows: Section 2 consists of theoretical background and hypothesis development. Section 3 includes the research methodology and explains the employed sample. The results are presented and elaborated on in Section 4. Section 5 contains the discussions of the findings, and the necessary implications and opportunities for future researchers are located in Section 6.

2. Theoretical Principles, Literature, and Hypothesis Development

2.1. Social Capital

Social capital is mainly based on social and cultural factors. Different aspects of ties, cooperation, mutual trust, and connections among network members would lead to implementing a goal by the same members. In addition to such a social capital for successful developmental plans, the presence of social capital is a basis for human, economic, and physical capital efficiency, and lack of social capital annuls the effectiveness of other capitals in getting access to development (Salehi et al. 2018), so in case of absence of social capital, taking the path of development and cultural and economic evolution is not easy. Letting in such a concept as a type of capital at the macromanagement level can cause a new perception of socioeconomic systems and help the governor better direct society toward development (Zimon et al. 2022). Today, in line with human, financial, and economic capital, another capital, which is called social capital, is formulated, which points to ties and connections among members of a network as valuable resources that, by creating norms and mutual trust, would lead to the implementation of objectives (Moghadam et al. 2021). Recently, we have witnessed the term "social capital" in discourses and scientific documents of sociology, social sciences, economics, and political sciences. The reason for such a concentration on social capital is the role social capital plays in the production and the increase in human, economic, and environmental capital. Social capital is a success factor in social welfare plans for social health. For this reason, it holds a particular position in assessing and compiling social indexes by reputable organizations worldwide (Salehi et al. 2022; Koolivand et al. 2021). Habib and Hasan (2017) assessed the effect of social capital on large firms' cash holdings and analyzed how social capital can prevent cash holdings. Using U.S. data, this study suggests that firms with high social capital benefit from less cash than those with low social capital. Moreover, social capital could decrease cash value through financial constraints and financial reporting quality channels while increasing the cash through systematic and peculiar risk channels.

Further analyses illustrate that the impact of social capital on cash assets is more for less geographically dispersed firms (Salehi and Zimon 2021). Broadly, our findings show that social capital has a significant role in the region in determining cash value. Studies

demonstrate that norms, dense networks, and social-civil and sociopolitical organizations in social capital regions would lead to more information transparency, interaction, and unity, motivating managers to provide trustful financial status reports. Hence, firms located in high social capital regions provide high-quality financial reports (Jha 2017).

2.2. Cash Holdings

According to the agency theory, the differences that lead to identifying the agency costs can justify the cash holdings behavior of management (Farhangdoust et al. 2020). Based on the balance theory, companies determine an optimum cash level by establishing a balanced equilibrium between interests and cash holdings costs. According to the theory of financing hierarchy, a manager tries to hold cash in the first stage to finance from inside the firm and not ask for the issue from outside. According to the free cash flow theory, managers are motivated enough to accumulate cash to increase their under-control resources and differentiate and judge the firm's investment decisions. According to the information asymmetry theory, a decrease in information asymmetry would decrease the cash holdings level of firms. This theory is among the major theories on cash holdings. Cash is one of the main resources of each business unit. Cash flows have a pivotal role in most financial decisions. Besides, the historical information related to cash flow can be useful for controlling the precision rate of the previous analyses and shows the relationship between a business firm's activities and future receipts and payments. Firms reserve a certain percentage of their assets in cash. Bates et al. (2009) also reported that the average ratio of cash to U.S. firm assets increased by 129% from 1980 to 2004.

Given the study's literature and most related articles, we can realize the increasing significance of cash in firms. Finally, managers decide whether or not cash is being distributed, spent on local expenditures, or reserved. For this purpose, they should constantly assess decisions' interests and costs. Ozkan and Ozkan (2004) conducted a study in England on the impact of ownership structure on the level of cash holdings. Given the literature's irregularities and differences, there is evidence of a nonlinear relationship between managerial ownership and cash holdings. They argue that with a managerial ownership increase, the level of cash holdings decreases and increases. By looking at the advantages of cash, we can say that the firm requires cash to implement its future profitable investment opportunities and face unpredicted future events for running the activities. Further, cash holdings mean lowering the dependency on foreign financing costs. Given the difficulties and costs of foreign financing, firms create a hierarchy for financing and prefer local collected resources.

Kim et al. (1998) show that firm size has a negative effect; income fluctuations, growth opportunities, and potential future investment opportunities positively affect the level of cash holdings. Opler et al. (1999) reported the negative effect of the firm's credit quality on cash inventory, and other results of his study were like that of Kim et al. (1998). By evaluating the contributing factors to the level of cash holdings of European Union companies, Ferreira and Vilela (2004) declare that growth opportunities and cash flows have a positive effect, and liquidity of assets, financial leverage, firm size, and bank liabilities have a negative effect on the level of cash holdings.

Pinkowitz et al. (2006) found that the positive relationship between cash holdings and firm value in countries with lower investor immunity is weaker than in other countries. By assessing the effect of financial leverage on the level of cash holdings, Guney et al. (2007) discovered a nonlinear relationship (first inverse, then direct) highly dependent on the country's particular characteristics where the firm is working. Sola et al. (2010) shows an optimum point for the cash holding level in U.S. markets. Bao et al. (2012) studied the relationship between the effect of positive/negative cash flows on the firms' cash holdings level. They noticed that a firm with positive (negative) cash flows has a less (more) tendency toward cash holdings. Moreover, firms with financing limitations, compared with firms with no financing constraints, are less inclined to invest in new projects and finance the required funds for unprofitable projects. Harford et al. (2012) analyzed firms' motives for cash holdings and found that firms with long-term investment opportunities reserve more

cash. They also figured out that firms with more investment opportunities pay less profit to shareholders. Wang et al. (2013) studied the effect of inflation and the operating cycle on the level of cash holdings in a sample of listed companies on the Shanghai Stock Exchange. They realized that when inflation increases, the level of cash holdings lowers to a certain level, but then the relationship turns positive. They also found a relationship between the operating cycle and the level of cash holdings. Asem and Alam (2015) analyzed the effect of changes in the market outlook for investment using the payment and nonpayment of dividends and considered the theory of surplus cash. When the market is in recession, it negatively affects nonpayment compared with dividends and a concentration difference on the high amount of surplus cash. When the market flourishes, it positively affects nonpayment compared with payment of dividends and a concentration difference on the high amount of surplus cash.

Social capital embracing a specific set of cultural norms, values, and networks might be useful to enhance the cooperation between individuals and ease collective actions (Fukuyama 1997; Woolcock 2010) and may extend the degree of mutual trust among social members (Guiso et al. 2004). As a result of this extended collective behavior and enhanced social networks, honesty is expected to be implemented among individuals in a society (Coleman 1994; Spagnolo 1999). Conventionally, studies argue that regions with greater social capital are more likely to be engaged with altruistic norms and an extended social tie that motivates social members' honesty and responsibility. Fukuyama (1997) shows that intense mutual obligations between different social members may exist in an extended social network. Consequently, individual social members, comprising CEOs, are likely to form their social values and norms according to the preferences of social obligations, in which they may consider the potential costs of deviating from the preferred obligations (Cialdini et al. 1991; Milgram et al. 1969). Thus, it is expected that strong social obligations and extended social networks in a specific region may facilitate environmental values, restricting the opportunistic behaviors of companies' CEOs performing in that region. In addition, the opportunistic behaviors of CEOs or companies might be counted as a great deviation in regions characterized by high social capital, and CEOs might find themselves obeying the social norms to preclude remarkable social costs for these behaviors. For instance, institutions and shareholders, including financial mediatory, banks, and other insurance institutions, may count social capital as a limiting factor for opportunistic behaviors of firms in the optimization of resources, comprising cash resources (Hasan et al. 2017a). Therefore, it is expected that firms in high social capital regions will likely benefit from holding lower cash as a result of precluding opportunistic behavior or following the social codes of conduct. Cheung (2016) identified three channels and the corresponding mechanisms through which corporate social responsibility (CSR) may affect corporate cash holdings. They suggest that CSR firms are expected to have relatively low cash holdings because they tend to have low idiosyncratic risk due to their higher social capital with stakeholders. CSR firms also tend to have low systematic risk due to greater loyalty from CSR investors and/or customers. The lower systematic risk may increase or decrease cash holdings. Lei et al. (2018) illustrate that financial development may decrease cash assets' sensitivity to tangible assets and increase firm growth. The analysis shows a major channel of tangible assets through which financial development leads to firm growth. Considering the above discussions, we expect that firms with greater social capital are likely to hold lower cash due to being less risky.

H1: *There is a significant relationship between firms' social capital and the level of cash holdings.*

One of the principal functions of financial accounting information is to aid users of financial statements in the form of future earning predictions. On the other hand, improving the strategic system is an inevitable issue for increasing financial reporting quality. One of the key strategic elements of firms is the audit committee (Salehi et al. 2017). The knowledge and perception of experienced audit committee members will strengthen the value of financial reporting and firm auditing. The agency theory explains how the audit

committee affects the quality of financial reporting. Two main reasons for agency problems are the conflict of interests and the different perspectives of the owner and management on the risk. Such a conflict derives from the information asymmetry between owners and managers. There should be supervision for the objective, accountability, decision making, and managerial activities. Close supervision is possible when owners are actively able to control the processes. However, due to expensive costs and, in some cases, lack of expertise and knowledge, they cannot actively be entangled with the issue. The board of directors must design and settle the regulatory mechanisms due to its commitment to shareholders (Kardan et al. 2016). Companies in high social capital regions have less cash, which can also be related to agency motivation. As the deviation of social behavior in social capital regions, opportunistic managerial behavior concerning cash management concerns considerable social costs for managers (Moradi et al. 2015; Salehi et al. 2021b). The mutual trust in high social capital regions limits the managers for setting the cash aside. This allows firms in high social capital regions easy access to foreign financing and lowers cash dependency. However, this ignores the previous topic of possible channels through which social capital may cause a decrease in firms' cash deposits. Given the quality of financial reporting, previous studies showed that high-quality financial reporting would decrease the negative effects of information asymmetry and unfavorable selection costs. Hence, firms can lower their cash (García-Teruel et al. 2009). Since firms with high social capital regions benefit from better financial reporting quality (Jha 2017), we expect cash funds to be assigned less to high social capital regions.

H2: *There is a significant relationship between the social capital of firms and financial reporting quality.*

2.3. Social Capital, Cash Holdings, and Financial Reporting Quality

Human beings, including managers, create ideas based on common social norms and consider the costs of deviation from the accepted norms. Thus, a certain region's strong norms and dense social networks are expected to create a limited area for the operating firm (and its managers). Additionally, management's opportunistic behavior in high social capital regions would lead to social deviation, and managers should incur considerable costs for such behaviors. Hence, shareholders and institutions, including banks and other financial institutions, can perceive social capital as a barrier to opportunistic managerial behaviors in using resources involving cash and vendible resources (Hasan et al. 2017b). This allows firms to easily use high social capital regions to access foreign financial affairs and lower costs. From the cost–benefit view of cash holdings, firms from high (low) social capital regions require less (more) cash. As mentioned previously, cash assets can help the firm use investment opportunities and lower the probability of financial worries. However, it is believed that such few (more) advantages are for active firms in high (low) investment regions. This is because companies in vast social capital regions suffer less from foreign financing constraints. After all, high social capital could increase trust among participants, one of which is the trust of shareholders in managers concerning fund management. Due to insurance coverage, companies in high social capital regions establish better relationships with key shareholders and are less influenced by particular firm shocks and financial shocks. Hence, such firms need no cash reserve to hit unwanted shocks.

To put it in a nutshell, transaction and preventive motivations are not enough for cash holdings in firms with social capital. On the one hand, the level of cash holdings increases when the business firms benefit from more growth opportunities. On the other hand, the level of cash will decrease along with the increase in assets, liquidity, leverage, and profit distribution. Given the effects of financial reporting quality on firms' cash assets, we can guess that in firms with weak (good) financial reports, more (fewer) cash is reserved. This occurs because better financial reporting lowers the negative asymmetrical information effects and unfavorable optional costs and allows firms to decrease their cash level (García-Teruel et al. 2009). Sun et al. (2012) also discovered an inverse relationship between firms' income quality and cash assets. Studies show that norms, dense networks, and civil-social,

social, and political organizations in high social capital regions would lead to transparency, interaction, and more information sharing that cause managers to present the financial status report trustfully. Hence, firms in high social capital regions present high-quality financial reports (Jha 2017).

H3: *The quality of financial reporting modifies the relationship between the social capital of firms and cash holdings.*

3. Research Methodology

This paper is descriptive correlational in terms of nature and method. The study period is from 2014 to 2020. Data were gathered using the Rah Avard-e Novin Software, the Securities and Exchange Organization and the Comprehensive Database of All Listed Companies (Codal database), and the stock exchange's official website. Initially, the social capital of each province is achieved. We specify to which province the sample firms (175 firms) are located (via the Codal website), where the social capital, defined for each province, is assigned to the firm located in that province to compute the social capital of each of the 175 companies finally. Multivariable regression analysis is used for hypothesis testing. Finally, the F statistical test, *t*-test, coefficient of determination, correlation coefficient, and Durbin–Watson statistic are used for the significance of patterns.

3.1. The Specifications of the Study Model

Model of the hypothesis (1)

$$CASH_{i,t} = \beta_0 + \beta_1\ SC_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 CFO_{i,t}\ + \beta_5 ROA_{i,t}\ + \varepsilon_{i,t}$$

Model of the hypothesis (2)

$$ABSDA\ _{i,t} = \beta_0 + \beta_1\ SC_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 CFO_{i,t}\ + \beta_5 ROA_{i,t}\ + \varepsilon_{i,t}$$

Model of the hypothesis (3)

$$CASH_{i,t} = \beta_0 + \beta_1\ SC_{i,t} + \beta_2\ ABSDA\ _{i,t} + \beta_3\ SC_{i,t} *\ ABSDA\ _{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 CFO_{i,t}\ + \beta_7 ROA_{i,t}\ + \varepsilon_{i,t}$$

3.2. Variables Definition

The variables under study comprise a dependent variable, an independent variable, a moderator variable, and control variables that were measured as follows:

3.2.1. Dependent Variable

Cash holdings (CASH): cash is equal to cash and cash equivalent, which is extracted directly from the firm's balance sheet.

3.2.2. Independent Variables

Social capital (SC): given the basis of social capital measurement, 17 features are considered for calculating each section of the social capital structure. Per capita murder (nonsocial deviation and public trust), per capita assault and battery (nonsocial deviation and public trust), per capita destruction (nonsocial deviation and public trust), per capita acts of chastity (nonsocial deviation and public trust), per capita embezzlement and bribery (midlevel trust, trust in deals, directly effective in cost of deal), per capita theft (nonsocial deviation and public trust), per capita capture and harassment (nonsocial deviation and public trust), per capita bounce checks (indicating the amount of transaction cost in deals and trust in the trading party, trust in the banking system as a public institution), per capita landlord and tenant claims (trusting the close relatives and friends creates the midlevel effective trust in cost of deal), per capita marriage (trust in family, social participation, and honesty), per capita divorce (the range of trust depth in family), per capita religious places

(religious participation as one of the main resources of social capital in Iran), per capita library members (social participation and range of information access), measure of per capita referring (depth of social participation), and average tax income from total public revenues (government's trust and range of social participation). After collecting the desired statistics and data, each year's required data and province will be normalized based on the following formulae between 0 and 100 (Fukuyama 1999):

$$\frac{x_i - x_{min}}{x_{max} - x_{min}} \tag{1}$$

This formula is used for those variables that indicate the positive effects on social capital, and Formula (2) is for variables that have no social capital feature (such as per capita divorce and different types of crimes):

$$\frac{x_i - x_{max}}{x_{min} - x_{max}} \tag{2}$$

So far, by calculating the normalized value of each feature and cumulating them for provinces, we would compute the social capital value for the provinces under study for each year. Given the limitations of the statistic, we only use 17 features for measuring social capital. These features typically show a part of social capital, such as trust, participation, and nonsocial deviation. To gain access to these features, all variables should be normalized relatively between 0 and 100; then using the factor analysis, similar factors should be detected to determine the cumulative index of social capital and extract the social capital index.

3.2.3. Moderator Variable

This paper uses the following absolute value of discretionary accruals to calculate the financial reporting quality. Moreover, the adjusted Jone's model (1995) is employed to calculate the discretionary accruals. Initially, the coefficients are estimated using Equation (3):

$$\frac{TA_{i,t}}{Assets_{i,t-1}} = \alpha_1\left(\frac{1}{Assets_{i,t-1}}\right) + \alpha_2\left(\frac{\Delta Sales_{i,t}}{Assets_{i,t-1}}\right) + \alpha_3\left(\frac{PPE_{i,t}}{Assets_{i,t-1}}\right) + \varepsilon_{i,t} \tag{3}$$

After estimating the coefficients, the nonoptional discretionary accruals are calculated using Equation (4):

$$\frac{NDA_{i,t}}{Assets_{i,t-1}} = \alpha_1\left(\frac{1}{Assets_{i,t-1}}\right) + \alpha_2\left(\frac{\Delta Sales_{i,t} - \Delta AR_{i,t}}{Assets_{i,t-1}}\right) + \alpha_3\left(\frac{PPE_{i,t}}{Assets_{i,t-1}}\right) \tag{4}$$

Finally, we have the following formula for computing the discretionary accruals:

$$\frac{DA_{i,t}}{Assets_{i,t-1}} = \frac{TA_{i,t}}{Assets_{i,t-1}} - \frac{NDA_{i,t}}{Assets_{i,t-1}} \tag{5}$$

In these equations, TA is accruals; Assets are total assets; Sales are revenue; AR is accounts receivable; PPE is gross properties, machinery, and instrument; NDA is nonoptional discretionary accruals; and DA is discretionary accruals. In this paper, the following formula is used for accruals, which is known as profit and loss:

Accruals = operational cash flow − profit (before tax) before unpredicted items

All the required data are extracted from companies' annual financial statements. According to the institutional settings of Iran, companies are obliged to prepare their financial reports based on domestic accounting standards. These standards are relatively designed and enacted with the most compatibility of the international accounting standards (IAS). The authorized body to translate and localize the IAS is the Iranian National Audit

Organization, which is formed by national law and works under the supervision of the ministry of economic affairs and finance. This professional organization is also predicted to audit companies and evaluate the quality of their financial reports. However, this is not the only authorized body to audit firms' financial reports; audit firms working under the supervision of the Iranian Association of Public Accountants are also eligible to evaluate the fairness and accuracy of provided financial reports.

3.2.4. Control Variables

Firm size (SIZE): the natural logarithm of total firm sales is used for calculating firm size; we include the size because prior studies find that larger firms may hold less cash (Habib and Hasan 2017). In this paper, total sales are computed as follows:

SIZE = Ln (Sale): sale is the total firm sales.

Financial leverage (LEV): the debts-to-assets ratio is the firm's financial leverage, which indicates the range of long-term financing outside the firm. This variable is added to the model because firms are expected to optimize cash holdings to reduce debt constraints. This paper calculates this ratio by dividing the debts into total assets.

Operational cash flow (CFO): it equals net profit + noncash costs + working capital. Opler et al. (1999) found that companies with higher OCF may hold greater cash.

Profitability (ROA): return on assets derived from dividing net profit into total assets. The ROA is also added since the findings suggest that the profitability is incorporated with cash holding (Abushammala and Sulaiman 2014). The equation for computing return on assets is as follows:

$$ROA = \frac{net\ profit}{total\ assets}$$

3.3. Statistical Population and Sampling

The statistical population of the present study includes all listed companies on the Tehran Stock Exchange. The statistical sample comprises a limited number of the statistical population showing the main characteristics of society. This study uses the systematic elimination method to have a suitable statistical sample agent in the statistical population. For this purpose, the following five criteria are considered. In case a firm has all of these criteria, it will be selected for the study sample, and the remaining will be eliminated.

After considering all the above criteria in Table 1, 175 companies remained in the screened population, all selected as the study's sample. Hence, our observations from 2014 to 2020 would be 1050 year-company (6 years * 175 firms).

Table 1. The sample selection procedure.

Total No. of Listed Companies on the Stock Exchange	**494**
Criteria	
No. of companies that were not active in the stock exchange	171
No. of companies that were listed on the stock exchange after 2014	40
No. of companies that were affiliated with withholdings, investment, financial intermediaries, banks, and leasing companies	50
No. of companies that have changed their fiscal year or their fiscal year is not March during the period of the study	54
No. of companies that had no transaction during the period of the study	3
No. of companies whose information was not available during the period of the study	1
No. of sample companies	175

3.4. Required Data, Research Variables, and the Calculation Method

Research data were collected using the Rah Avard-e Novin Software, the Securities and Exchange Organization (Codal) databank, and the stock exchange's official website.

4. Findings

4.1. Calculating Social Capital

Given the existing limitations in statistics, 17 indexes were used for measuring social capital. These indices indicate a part of social capital, such as trust, participation, and nonsocial deviation. To have these indices, all variables should be normalized relatively between 0 and 100; using the factor analysis, similar factors should be detected to determine the cumulative index of social capital and extract the social capital index. Table 2 illustrates the KMO metric and the results of Bartlett's test for different years. As shown in the table, the KMO metric is more than 0.5, which shows the fairness of the factor analysis pattern for this project. Bartlett's test results, which analyze the hypothesis of the recognition of the correlation matrix, also indicate the usefulness of factor analysis for the present study's data.

Table 2. The KMO test and Bartlett.

Test		
Bartlett's test	Statistic value	297.011
	Degree of freedom	136
	Significance	0.000
KMO test	Statistic value	0.594

However, one of the main reasons that cause the KMO metric in Table 2 to be less compared with other social studies is that social capital has a vector nature. Its indexes are not correlated in all aspects of Iran, so the inverse movement of vectors would cause them to neutralize each other, lower the correlation, and decrease the KMO value.

4.2. Evaluating the Descriptive Statistics of Variables during the Study Period

Mean is the leading central index, which shows the distribution's balance point and center of gravity. It is a suitable index for indicating the centrality of data. Standard deviation is one of the significant dispersion parameters and is a criterion for the amount of observation dispersion from the mean. According to Table 3, on average, firms are 289,370.2 cash, the max of 297,209,350. The mean social capital index is 19.670, and the higher index for this variable is 59.030. Furthermore, on average, the reported financial statements possess high quality since the standard deviation of this index (0.090) is near the max (1.040), whereas the poorest quality is 9.27. The larger firm possesses a 19.72 score, and the smallest one has a 7.61. On average, firms use 0.6 debt as their financial leverage and hold 0.12 operational cash flow. Finally, the max profitability index is 0.620, whereas the minimum of this index is −1.150.

Table 3. Descriptive statistics of the study variables.

Variable	Cash Holdings	Social Capital	Financial Reporting Quality	Firm Size	Financial Leverage	Operational Cash Flow	Profitability
Mean	289,370.200	19.670	0.090	13.810	0.610	0.120	0.100
Median	26,097.000	13.680	0.060	13.700	0.610	0.110	0.080
Max.	297,209,350	59.030	1.040	19.720	2.650	0.820	0.620
Min.	65.000	2.470	9.270	7.610	0.090	−0.570	−1.150
Std. dv.	1,416,996.000	16.340	0.090	1.610	0.230	0.140	0.140
Skewness	13.170	0.630	3.040	0.450	1.620	0.480	−0.570
Kurtosis	228.690	1.920	19.760	4.280	13.090	4.950	11.060
No. of observations	1050	1050	1050	1050	1050	1050	1050

4.3. Evaluating the Descriptive Statistics of Variables during the Study Period

Least squares (GLS) regression is used to deal with the variance inconsistency. Economists introduce different tests for analyzing this problem. In this paper, as depicted in Table 4,

the consistency assumption of the variance of the residuals is assessed using the White test, which shows that the null hypothesis concerning the presence of variance consistency is rejected in the study models.

Table 4. The results of the constant variance of the error term.

Model	Used Test	F Statistic	Probability	Result
1	White	1.622	0.022	Heterogeneity of error variance
2	White	1.518	0.024	Heterogeneity of error variance
3	White	1.646	0.029	Heterogeneity of error variance

4.4. Lack of Linearity among Descriptive Terms

There is nonlinearity when the variance inflation index is less than 10. As depicted in Table 5, these test results reveal that the range of inflation of the variance of the independent and control variables of the study is at the defined limit, and there is no problem with this issue.

Table 5. The result of the VIF test.

Variable	Coefficient Variance	Variance Inflation Factor
Social capital	0.314	1.415
Financial reporting quality	0.041	1.424
Firm size	0.064	1.817
Financial leverage	0.054	1.535
Operational cash flow	0.038	1.717
Profitability	0.025	2.422

4.5. Error Term Normality

Given the obtained results in Table 6, the Jarque–Bera test's probability is less than 5% for the study models. Hence, the null hypothesis concerning the normality of the error term is rejected. However, when the sample size is large enough, deviation from the normality hypothesis is usually insignificant, and the consequence is trivial. Given these facts, we can ignore the error term normality assumption.

Table 6. The results of error term normality.

Model	Used Test	F Statistic	Probability	Result
1	Jarque–Bera	501.021	0.000	No term normality
2	Jarque–Bera	487.398	0.000	No term normality
3	Jarque–Bera	492.145	0.000	No term normality

4.6. Durbin–Watson and Regression Tests

This test is one of the leading tests for detecting autocorrelation. When the Durbin–Watson statistic is between 1.5 and 2.5, there is no autocorrelation, but values higher or lower than 1.5–2.5 show that the error term is not stochastic. If at a 95% significance level, the calculated F statistic of the regression equation is larger than the F value, the null hypothesis is rejected; otherwise, the null hypothesis is accepted.

4.7. The Results of Hypothesis Testing

4.7.1. First Hypothesis Testing

The first hypothesis: there is a significant relationship between the social capital of firms and cash holdings.

The model estimation results, depicted in Table 7, are used to test the hypothesis. The F probability level (or level of significance) is 0.000. Since this value is less than 0.05, the null hypothesis is rejected at a 95% significance level, so the model is significant. The

Durbin–Watson statistic value is 1.847380, indicating no autocorrelation of errors (first order). The results related to the adjusted coefficient of determination (0.281308) show that about 28% of the dependent variable's changes are explained by the independent and control variables of the model. In general, the obtained results indicate that the coefficient of the social capital variable is −1.936704, which refers to a negative relationship between firms' social capital and cash holdings that is significant given the level of significance (0.0451), which is less than 5%. Given the above-said facts, the study's first hypothesis is supported by the findings, which means that cash holdings will decrease by increasing the social capital of firms. According to our expectations, those companies with higher social capital are likely to hold less cash because the market practitioners and other capital providers have perceived that these companies follow the social norms and, thus, are less risky.

Table 7. The results of the first hypothesis testing.

Variable	Sign	No. of Obs	Estimated Coefficient	Standard Error	T Statistic	Probability
Fixed value (intercept)	C	1050	−2,917,261.1	1,056,529.1	−2.761	0.005
Social capital	SC	1050	−1.936704	3.199	−0.605	0.045
Firm size	SIZE	1050	217,726.9	84,884.05	2.564	0.010
Financial leverage	LEVE	1050	145,855.6	176,597.4	0.825	0.409
Operational cash flow	CFO	1050	573,893.7	401,991.8	1.427	0.153
Profitability	ROA	1050	298,350.5	366,502.8	0.814	0.415
Coefficient of determination				0.346		
The adjusted coefficient of determination				0.281		
Durbin–Watson				1.847		
F statistic				8.533		
Probability (F statistic)				0.000		

4.7.2. Second Hypothesis Testing

The second hypothesis: there is a significant relationship between the social capital of firms and financial reporting quality.

The model estimation results, depicted in Table 8, are used to test the hypothesis. The F probability level (or level of significance) is 0.000. Since this value is less than 0.05, the null hypothesis is rejected at a 95% significance level, so the model is significant. The Durbin–Watson statistic value is 1.616, indicating no autocorrelation of errors (first order). The adjusted coefficient of determination (0.264) results shows that about 26% of the dependent variable's changes are explained by independent and control variables of the model. In general, the obtained results indicate that the coefficient of the social capital variable is 7.436, which refers to a positive relationship between firms' social capital and financial reporting quality that is significant given the level of significance (0.029), which is less than 5%. Given the above-said facts, the study's second hypothesis is supported, which means that financial reporting quality will increase by increasing the social capital of firms. As expected, those companies with greater social capital may defend and improve such capital by increasing their credibility in the market by providing high-quality financial reports.

Table 8. The results of the second hypothesis testing.

Variable	Sign	No. of Obs	Estimated Coefficient	Standard Error	T Statistic	Probability
Fixed value (intercept)	C	1050	0.103	0.030	3.344	0.000
Social capital	SC	1050	7.436	1.547	0.482	0.029
Firm size	SIZE	1050	−0.005	0.002	−2.344	0.019
Financial leverage	LEVE	1050	0.0806	0.019	4.171	0.000
Operational cash flow	CFO	1050	−0.086	0.024	−3.504	0.000
Profitability	ROA	1050	0.197	0.035	5.520	0.000
Coefficient of determination				0.339		
The adjusted coefficient of determination				0.264		
Durbin–Watson				1.616		
F statistic				7.214		
Probability (F statistic)				0.000		

4.7.3. Third Hypothesis Testing

The third hypothesis: financial reporting quality modifies the relationship between the social capital of firms and cash holdings.

The model estimation results, depicted in Table 9, are used to test the hypothesis. The F probability level (or level of significance) is 0.000. Since this value is less than 0.05, the null hypothesis is rejected at a 95% significance level, so the model is significant. The Durbin–Watson statistic value is 1.796, which indicates no autocorrelation of errors (first order). The adjusted coefficient of determination (0.286) results shows that about 28.6% of the dependent variable's changes are explained by the independent and control variables of the model. In general, the results indicate that the coefficient of the variable of the social capital of firms (financial reporting quality * social capital of firms) is −18.052, which refers to the negative effect of financial reporting quality on the relationship between the social capital of firms and cash holdings that is significant given the level of significance (0.020), which is less than 5%. Therefore, the financial reporting quality modifies the relationship between firms' social capital and cash holdings, so the author provides empirical evidence supporting the hypothesis. Finally, the findings suggest that firms with a great social capital rate might benefit more from their social capital case of providing high-quality financial reports. Such a benefit may manifest in market credibility, resulting in holding less cash.

Table 9. The results of the third hypothesis testing.

Variable	Sign	No. of Obs	Estimated Coefficient	Standard Error	T Statistic	Probability
Fixed value (intercept)	C	1050	−20,818.580	63,815.50	−0.326	0.744
Social capital	SC	1050	0.503	2.635	0.191	0.048
Financial reporting quality	ABSDA	1050	126,501.900	26,837.78	4.713	0.000
Social capital * financial reporting quality	SC * ABSDA	1050	−18.052	71.573	−0.252	0.020
Firm size	SIZE	1050	19,043.020	4355.853	4.371	0.000
Financial leverage	LEVE	1050	9066.692	13,209.16	0.686	0.492
Operational cash flow	CFO	1050	177,049.200	21,225.42	8.341	0.000
Profitability	ROA	1050	69,309.860	26,169.40	2.648	0.008
Coefficient of determination				0.341		
The adjusted coefficient of determination				0.286		
Durbin–Watson				1.796		
F statistic				13.618		
Probability (F statistic)				0.000		

5. Discussion

The present study aims to assess the relationship between firms' social capital and cash holdings and evaluate the effect of financial reporting quality on the relationship between

firms' social capital and cash holdings. In this paper, the obtained results from firms under study were tested using the EViews software at a 95% level. After data collection, the hypotheses were tested using panel data regression analysis. The first hypothesis concerning a significant negative effect between firms' social capital and cash holdings is supported. The result of this test is in line with that of Habib and Hasan (2017). It means that firms possessing greater social capital are likely to hold a lower amount of cash due to the greater credibility in the market; they need less to hold cash. Furthermore, the results also support the second hypothesis assessing the presence of a positive effect between firms' social capital and financial reporting quality. The result of this test is in line with that of Habib and Hasan (2017). It also denotes that companies are willing to protect their social capital by providing high-quality financial reports. Finally, the findings also support the third hypothesis dealing with the significant negative effect of financial reporting quality on the relationship between social capital and cash holdings. In this regard, the result is in line with Habib and Hasan (2017). The findings demonstrate that companies may improve their financial reporting quality, particularly accruals, to improve their social capital, which in turn assists them in holding a lower amount of cash. In other words, listed companies are aware that social capital might be counted as a tool for increasing credibility in the market, which is likely to be enhanced with high-quality reporting.

6. Conclusions

This study's findings propose several implications for managers and investors. Managers know they can improve their firm's performance by enhancing their social capital. Companies can invest their cash sources in profitable projects if holding a lower amount of cash or its equivalents. In addition, managers know that market stockholders and other stakeholders are likely to estimate the social capital under their management through the quality of reported earnings. Therefore, the quality of financial reports is among the critical factors determining the social capital of companies. For investors, the findings suggest that evaluating the social capital of companies might be considered a beneficial element for investing their sources because those companies that have improved social capital are more likely to report reliable earnings and possess greater credibility in the market, which assists them in holding a lower amount of cash.

According to the findings of this paper, we suggest that future researchers evaluate the critical roles of intangible capital, including intellectual capital, spiritual capital, religious capital, and so on, in the necessity of cash holdings within companies. In addition, assessing the moderating effect of ownership structure on the amount of social capital might also be beneficial for investors and market practitioners.

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