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The Effect of Financial Leverage, Supply Chain Finance and Liquidity on Firm Performance in Pakistan: A Comparative Analysis of Cement, Textile, Pharmaceutical and Sugar Sectors

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Abstract

Financial leverage, supply chain finance, and liquidity are three substantial features of overall firm performance. This study examines how financial leverage, supply chain finance, and liquidity affect a firm's performance in Pakistan's cement, textile, sugar, and pharmaceutical sectors. The financial reports for all 50 companies in four industries, which were available on their official websites, were used to compile data for the past 10 years.

The data was collected from 2011 to 2020. Another source used to collect data is the World Bank. Analyzing data was done using the generalized method of moment (GMM) the data, and the results show that financial leverage has a negative impact on company performance in the cement industry, but a positive impact in the textile, sugar, and pharmaceutical industries. In the cement industry, supply chain finance (SCF) has a detrimental effect on firm performance whereas supply chain financing has a positive impact on the textile, sugar, and pharmaceutical sector. Liquidity (LIQ) has a favorable impact on firm performance in the cement, textile, sugar, and pharmaceutical sectors.

The results also reveal the critical role supply chain finance plays in boosting firm performance. This study's innovative conclusion is that increased debt levels and their inefficient use have a detrimental effect on firm performance. The findings indicate that financial leverage improves a company's performance as long as debt levels do not exceed equity. Due to the many market and industry conditions and scenarios that businesses in a given industry must deal with, several factors have varying effects on how well a firm performs. This research could help upper management at cement, textile, pharmaceutical, and sugar companies make better decisions by clearly defining how to perform effectively to boost company performance, which can entice investors to make investments in businesses with strong market positions. and also use that knowledge to enhance future performance

Keywords: Financial leverage, Supply chain finance, liquidity, Generalized method of movement, firm performance, Pakistan

Introduction

Background of the Study

Every business organization's activities are heavily influenced by issues with financial leverage, supply chain finance, and liquidity; as a result, for an entity to operate effectively and efficiently, its financial managers and owners must express great concern about the firm's performance results. "Liquidity" in relates to an organization's capacity to transform its assets into cash in the shortest amount of time without losing value. In other words, the ability of an organization to strategically manage and focus on keeping effective levels of current assets and current liabilities is made reference to as liquidity.

By doing this, the company ensures that it will have a steady stream of cash to cover its current liability and, as an outcome, be able to keep going in the coming years. Another important aspect of liquidity is that it is necessary for every company to run on a daily basis, and competent management is needed to guarantee consistent cash flows. Another important aspect of liquidity is that it is necessary for every company to run on a daily basis, and competent management is needed to guarantee consistent cash flows. The current ratio, quick ratio, cash ratio, and defensive interval ratio are only a few of the liquidity ratios that organizations use to manage their short-term obligations, according to [1]. Each of these ratios can have a big impact on a company's financial health. Receivables, inventories, trade investments, and cash are examples of current assets because they are constantly coming into and going out of businesses. On the other hand, current liabilities are short-term current liabilities that are included in long-term liabilities within the fiscal year or operating cycle, such as accounts of creditors.

The ability of a business to meet its short-term obligations is reflected by its liquidity ratios; however, the ratios' weak values may indicate that the corporation is having trouble paying its short-term debt. Furthermore, for decades, the most significant and fascinating topics among financial analysts and academics have been issues with financial debt and business performance decisions. According to management of companies in developing countries should weigh the advantages and disadvantages before outsourcing their activities because financial leverage is one of the crucial elements of financial structure explication [2]. Another source of funding for business operations is financial leverage, and decisions made by financial managers and management to grow their activities and buy assets are good for performance. may impact In addition, financial leverage decisions can generally increase a company's profits depending on the company's activities or can adversely affect performance due to borrowing defaults. An external source of money known as financial leverage is used by company can use to acquire more assets and fund a project without using too many shares to carry out its activities. In addition, Financial leverage combines the capital, profits, short-term liabilities, and long-term liabilities of an organization [3].

Since the start of the twenty-first century, supply chain finance (SCF) has been incorporated into empirical study [4]. Therefore, SCF is essential to provide short-term credit to both buyers and sellers. SCF works well when operating on a technology by recording the entire payment process and automating all transactions. SCF lessens bankruptcy and uncertainty in the supply chain, which aids in supply chain stabilization [5]. SCF also helps to optimize the financial flow of a company. In other words, the objectives of SCF are to lower the cost of capital, raise cash flow rates, and enhance the financial ties among supply chain members [6]. In particular, Following these financial limitations, management is attempting to enhance supply chain finance [7]. To maximize working capital, businesses anticipate receiving more trade credits from suppliers. This indicates that SCF can maximise financial liquidity and working capital [8]. As a result, SCF benefits the participants more. To measure Research studies frequently employ the cash conversion cycle (CCC) indicator while analysing SCF[9]. The key to managing working capital well is through the use of CCC.the entire supply chain while fully mapping the SCF [10]. Four Pakistan stock exchange sectors are focused on in this study . In the context of Pakistan , the Pakistani cement, textile, fertilizer, and food and personal care products sectors are confronting a lot of significant issues .In particular, the issue of financial availability is one that receives a lot of attention from cement, textile, fertilizer, and sugar firms. In particular, Pakistan Given that the economy has just come out of a recession brought on by the global financial crisis, businesses in the industries of cement, textile, fertilizer, and sugar have finding it harder to get financing. As a result of this source, these businesses are better able to compete with other global corporations entering Pakistan's market that have greater financial resources than they have. Together Cement, textile, fertilizer, food, and sugar firms are more cautious about short-term lending through supply chain finance when utilizing financial leverage through conventional channels, particularly credit organizations. The reason for this is because short-term financing enables businesses to efficiently use their working capital at a cheap cost, hence improving business success [6,11]. Although it is impossible to deny the contribution of financial leverage and supply chain financing to increasing firm performance, their concomitant In many research, the effect on corporate performance has not been empirically studied. A company's liquidity is defined as its ability to pay its short term creditors . It is crucial in smoothing out all of a company's activities. As a result of impact on organizations' everyday activity , both external and internal analysts can greatly benefit for analyzing liquidity [12,13]. The significance of liquidity to a firms performance may determine level of profitability to the company's [14]. A firm's liquidity is required because it demonstrates its ability to satisfy its immediate obligations The liquidity ratio are thought to be the most typical measurements of a company's liquidity position. Therefore the purpose of this research is to offer the first empirical proof of this influence . The data is gathered primarily from Pakistani firms in the cement, textile, fertilizer, and food and personal care products industries, which are expanding rapidly but face significant access to capital challenges. Consequently , it is anticipated that this publication will present additional novel finding.

Problem Statement

Many industries in Pakistan are having difficulty surviving in a tough industry because of financial challenges management faces in satisfying short- and long-term obligations in order to establish an ideal financial structure that lowers the firm's cost of debt and enhances performance. Many of these problems, that are decreasing the number of companies in the nation, include the high cost of buying new machinery, the supply of raw materials to the industry, raising money to pay wages and salaries to employees as well as meeting other financial obligations. On the other hand, For industrial enterprises, financial leverage and liquidity are useful funding options. Leverage and liquidity are frequently factors that influence a performance of the company [15,16]. Both of these components contribute to the evaluation of corporate

performance. Because most companies' attention is drawn to managing the seamless obligation and active, as well as the long-term commitment as a vital part of firms' capital source, leverage and liquidity are the main challenges and critical topics that companies frequently face. For example, if a company decides to establish working capital in a large quantity, the level of leverage and liquidity will remain stable, but the opportunity to produce a larger profit will be reduced, resulting in lower performance [17,18]. On the other hand, if the company decides to improve its performance, it may have an impact on its leverage and liquidity. The more leverage and liquidity a company has, the better it is in the eyes of creditors. Corporations face a trade-off between leverage and liquidity when determining their financial leverage and liquidity management policies, which could affect their performance leverage and liquidity level must be appropriate for the company's needs, as both a lack and an excess of them can have a detrimental impact [15,17,19]. Excessive leverage and liquidity can be harmful to a firm since it encourages the collection of a big amount of money for no good reason [20].

Furthermore, excess leverage and liquidity may result in waste in the company's operations, reducing profitability. In this line, the company's good management of both leverage and liquidity leads to increased profitability [18]. On the other hand, high leverage and liquidity are not always beneficial, as they increase the possibility of idle funds that may be invested in more productive ventures [17,21]. Furthermore, several writers have sought to highlight the impact of financial leverage on firm performance, yet the outcomes are inconsistent, indicating that more research is needed. According to a prior study, a number of Pakistani industries use debt or turn their assets into nearly cash to achieve rapid expansion., but the influence of financial leverage, supply chain finance, and liquidity on firm performance has yet to be unified.

Gap Analysis

This is the first study to compare Pakistan's four most well-known and significant sectors.

Cement is one of the developed industries that has maintained its heritage since before independence. Textile is another, as is pharmaceutical, and sugar is another, as is another developing industry with enormous potential. We use the sectors of the Pakistan stock exchange for this. As far as we are aware, this study is one of the few ones that takes a look at this same relationship among financial leverage, supply chain finance, and liquidity. According to research on the impact of financial leverage on firm performance, it was discovered that firm performance had a substantial negative relationship with financial leverage in the instance of listed oil refineries in Pakistan [22]. The Effect of Liquidity and Financial Leverage on Firm Performance: Evidence from Listed Manufacturing Firms on The Ghana Stock Exchange is the subject of this study [23]. The study's empirical results show that liquidity (LIQ) has a positive, significant impact on firms' performance. The study demonstrates that financial leverage has a sizable positive impact on firm conducted research in Vietnam, How do financial leverage and supply chain finance influence firm performance? Evidence from the construction sector The findings show how significantly supply chain finance and financial leverage influence the performance of construction industry [24]. Financial leverage (FL) in particular has a greater impact on firm performance (FP) than supply chain financing (SCF). The results also demonstrate the importance of supply chain financing in raising company performance.

This paper's goal is to provide the first logical proof of this influence. In particular, the data was collected from Pakistani firms in the cement, textile, sugar, and pharmaceutical industries, which are expanding impressively but still encounter significant challenges in gaining access to capital. The true need is to concentrate on the level of the industry to determine how each industry was impacted differently and to provide focal stimulus correspondingly.

Research Objective

The study's objective is to figure out how financial leverage, supply chain finance, and liquidity affect firm performance in Pakistan. This study focuses on the cement, textile, sugar, and pharmaceutical industries. With fifty companies, this study will focus on four different industries. The study's independent variables are: 1. financial leverage, 2. supply chain finance, and 3. liquidity. Firm performance was the dependent variable. Data from 50 organizations in Pakistan over a 10-year period was collected and analyzed.

Research Question

That Facts Shown Above Raises Various Questions

- Is there a connection involving the relationship between variables ?
- Does financial leverage has an influence on firm performance ?
- Does supply chain finance has an influence on firm performance ?
- Does liquidity has an influence on firm performance ?

Literature Review

Financial Leverage and Firm Performance

The amount of money a company has borrowed from outside sources to fund its operations is known as financial leverage [25]. Financial leverage, according to [25], has minimal effect on firm performance. When opposed to a business that is exclusively reliant on equity, leveraged companies have greater resources at their disposal to finance operation and growth [25,26]. The debt-to-equity ratio needed to finance fixed and current assets is referred to as the capital structure of an organization. Pecking order theory, developed by likewise emphasizes this structure, which

bases organizations' profitability and general business needs on past trends [27]. The basis of Pecking Theory concerns information asymmetry in an imperfect market where information is correlated to cost. With the exception of extreme circumstances, where possible effects may result in overall corporate liquidation a 1% drop in equity to total capital can result in a ten percent increase in overall profitability for US firms. A company's capital structure and market value are positively related. Getting funding from debt enhances the overall capital base and hence the leverage multiplier, helping enterprises grow more competitive [28-30]. As well as have backed up this notion [31,32]. In France's trading sector enterprises, the negative and significant relationship among debt and firm performance has been discovered, dispute previous studies that found a favourable relationship for listed corporations. The analysis backs up agency theory, which states that the One of most essential component in determining a company's capital structure is the relative cost of debt and equity [27]. According to Financial leverage is a key outside funding mode. Financial leverage demonstrates the requirement for capital for a business to expand, increase productivity, or carry out activities successfully [33]. One of the most efficient methods for a business to accomplish its goals is through financial leverage. A corporation can fulfil its objectives and increase the value among its shareholders with the help of financial leverage. Finance is critical for any organization, whether it is new or established. Any financial or non-financial institution requires finances to carry out its daily operations. Financial leverage refers to how a company uses its debt. When used, businesses benefit from a tax shield that reduces the total amount of income tax payable on behalf of the state by of taxed income, hence boosting firm performance. In many other terms, Using financial leverage can improve the performance of your business. These are [34-38]. However, using financing methods can also pose more financial risks to the enterprise. In fact, more debt and its inefficient use put a company at risk of bankruptcy, which can have an unfavorable effect on firm performance. According to negative effect of financial leverage on firm performance [39-46].

Profitability Financial leverage is one of the factors that significantly influence the earnings of firms. A high rate of leverage reduces firm profitability, whereas a low rate of leverage increases firm profitability. As a result, It is essential for the owners of every firm to choose the right balance of debt and equity. Financial leverage has a significant inverse relationship with corporate profitability [47]. Companies that don't use borrowing money for business purposes rely exclusively on their own equity; as a result, they are not bound by any predetermined sum or high interest rate, indicating that their businesses don't have any financial leverage. Furthermore, financial reforms in most south Asian nations in general, and Pakistan in particular, have brought financial reforms to the country's financial market, and now these modifications have a significant impact on the operation of financial market [48]. As a result, studying the effect of leverage in various circumstances becomes more appealing. Empirical conclusions have diverse results based on existing literature. Some people claim that there is a negative association, while others claim that there is no such thing. According to several studies, the degree of agency problem that organizations have influence the relationship between leverage and performance for example, discover that leverage benefits publicly traded corporations but harms non-publicly traded companies. Leverage helps diversified organizations perform better, according to [49,50]. The amount of financial leverage employed varies by industry and by company within an industry. When the economy appears to be strong, firms use greater financial leverage, and when the economy appears to be weak, companies try to use less financial leverage. The optimum level of debt is difficult to assess, and each organization must manage their financial leverage to meet their own demands and circumstances [51].

Supply Chain Finance and Firm Performance

Supply chain finance (SCF) was first used by who also gave the term its definition as the "integration of finance with the supply chain mechanism [52]." SCF is characterized by as a vital solution for resolving present credit concerns by increasing the organization's overall financial performance and reducing the risk to the supply chain's finances and operations disruption [53]. The capital cost of company's supply chain may be greatly reduced because of supply chain finance [54]. The following are some of the ways that SCF can help businesses save money. For starters, SCF solutions can help businesses reduce inventory costs. For example, revealed that the targeted firm's inventory holding and management expenses are reduced by the vendor-managed inventory approach [54,55]. Improved accuracy can help reduce inventory holding costs even more [56,57]. Furthermore, argued a beneficial supply chain method, organizations avoid stock outs by securing their supply chains [58]. Second, by implementing SCF solutions, businesses can reduce their capital costs. Further scholars it was proposed that the framework for stocks, accounts receivables and current liabilities impacted the payment cycle [59]. According to the use of SCF solutions by supply chain firms to lessen perceived liquidity risk is correlated with their low working capital situation [6]. Additionally, a lot of businesses have limited access to financing choices and pay high financing interest rates, which could increase the price of the finished goods sold to clients. SCF solutions allow businesses to collaborate to improve cash flow, share financial risk, and lower financing interest costs across supply chain and its entire claims that through minimising transaction costs, supply chain disruption risk, and cash flow risk, SCF solutions can assist businesses in cutting operational costs [6,54,60]. Inventories and financial systems are also involved in SCF, according to [61]. In order to increase the SC efficiency and the profitability of the SC partners, investigating the SCF apparatus is thus not only necessary but also necessary [61]. According to SCF is an event-triggered financial management tool for an organization's activities [62]. SCF is a risk- and profit-shifting strategymethod used by financial companies such as banks to improve OP in various market circumstances [61]. SCF can help businesses perform better by encouraging longer payment terms and giving their suppliers stronger receivable facilities [63]. Supply chain finance may assist SMEs improve their performance by optimising working capital, decreasing supply chain risk. According to supply chain finance addressed cash management and financial structure throughout the supply chain [64].

Supply chain finance is the group of goods and services that financial institutions offer to firms to enhance their physical and monetary flow, according to. According to combining information reliability with cash flow reduces Market disturbance risk is reduced, and supply chain efficiency is increased [65,66]. A framework was developed by to enhance financial management flow using SCF [67].

A financial perspective and a supply chain perspective were offered as two perspectives on SCF by [68]. The supply chain viewpoint looks at money and behavioral activities, both of which are essential for a company's value, while the financial aspect focuses on tasks linked to money. Determine which supply chain finance, individuals, tools, and procedures are suitable for reducing associated risk [69]. Both SCF providers and adopters must understand the connections between SCF, performance, and risk. Extended payment terms have long been associated with a suppliers are at a larger risk because they typically can't acquire short-term finance and incur hefty loan expenses [70]. By supplying cheap borrowed funds via lending, processing and deposits, SCF can lower a supplier's credit risk. In general, adopting SCF successfully necessitates coordination among suppliers, customers, and provider of financial services. At first, operations like financial flow were considered to be a part of supply chain finance. A supply chain's financial performance can be evaluated. Enhancing the players in the supply chain's financial structures, and facilitating cash transfer between business frontiers [4,64,71]. We fill a knowledge gap and respond to the demands of supply chain finance, including its difficulties and effects on business performance, as indicated in prior literature. According to, supply chain finance is being employed as a method for improving financial management within a company's supply chain [64]. Financing in the supply chain is often measured using cash conversion cycles [9]. It is described as the amount of time between a capital outlay and a cash return [9,24]. According to a quicker cycle for converting money causes enterprises to accelerate cash conversion due to a reduced cost of capital. Therefore, the time frame between when money is released and when it is collected is known as the "money cash conversion" [24]. By shortening the cash conversion cycle, the financial ties between participants are strengthened this indicates that the supply chain has more funding [6]. Additionally, by giving customers access to low-cost short-term loans, the business will boost performance [24]. As a result, supply chain finance contributes considerably to the optimization of a company's financial flow the improvement of the entire supply chain and most importantly, enhancing organizational effectiveness [4,5,11]. In other term, the cash conversion cycle has negative effect on performance while supply chain finance has favorable correlation with performance. That adverse effect was shown in a study by Supply chain finance represents the most efficient technique to manage supplier financial risk and enhance a company's working capital, as per which enhances the performance of the company [72]. This is consistent with study findings by that show that the relationship between supply chain financing and business performance is mostly mediated by SC risk [73]. Theoretical analysis of SCF options was done, and it was found that SCF can enhance working capital management and company performance while reducing default risk.

Liquidity and Firm Performance

In the literature on finance, the significance of liquidity is nothing new. The two most essential and significant part of corporate company life are liquidity and firm performance . without liquidity , no business can survive. A company that is not profitable may be labeled unhealthy, but one with no liquidity may be soon meet its demise and ultimately disappear. Financial economics has paid a considerable consideration has been given to the connection between liquidity and performance from a variety of perspectives. Both the impact of liquidity on performance and the reliance of liquidity on performance have been studied. The financial status of firm is referred to as "liquidity" . Liquidity, according to another scholar, is defined as "the capacity to fulfill obligations efficiently." For organization in both the financial and non financial sectors, managing liquidity is crucial, according to [74]. Liquidity is a method used by businesses and the industrial sector to convert assets into cash and make payments in cash [75]. Liquidity and its effects on a firm's profitability have been the subject of numerous studies by academics. Using conventional methods for assessing a company's liquidity, Number examined the effects of liquidity on profitability. In terms of their findings, some studies agreed with one another, while others were proven false. Various sample sizes have been used in studies by. The connection between profitability and liquidity should be determined. For measuring liquidity and other metrics for evaluating performance, all of these used the liquidity metric. Operating profit to sales ratio is used by return on equity and return on total asset are used by and profit per share and return on assets are used by [12,13,76,80]. Nevertheless, applied three techniques return on asset, return on equity, return on investment uses the return on investment A positive association between liquidity and profitability has been established by all investigation [77,79].

Meanwhile uses the traditional index to measure liquidity and various profitability indicators and conduct study of the Indian steel, cement and software industries. All the three studies result shows liquidity and performance have a negative correlation [80,84,85]. In the United States, Nigeria and Saudi Arabia Liquidity measurements and firms revenues based on the traditional index. Attempts to recognize the factors that contribute to the relationship between profitability and liquidity, as well as their effects [86].

His research demonstrated that the independent and dependent variables employed in the study had a mixed (positive and negative) relationship. Net income and return on equity are inversely correlated with the current ratio, while return on equity is inversely correlated with the current ratio. Although it has a positive association with net income and return on equity and a negative correlation with return on investment, the quick ratio is a current ratio. It has a negative relationship with every profitability index. How firm performance and liquidity are related is being empirically explored by academics in Saudi Arabia, Pakistan, Poland, India, Iran, Sri Lanka, and Nigeria using a combination of traditional and

contemporary measures. We tried it and had a variety of outcomes. Surveyed people in Sri Lanka and Poland [14,87]. Ten businesses made up the sample size. Both regression analysis and correlation analysis were used. Their research discovered a favourable relationship between business profitability and liquidity as determined by both contemporary and traditional indexes. On the other hand, performed a survey with a sample size of 29,108.30 in Iran and Saudi Arabia, respectively [88-90]. Their investigation led them to the conclusion that profitability has a significant negative relationship with liquidity as measured by both conventional and modern metrics. The results of research utilising the current liquidity index and those using the conventional liquidity index differ just little. [89,90]. Profitability, but on the other hand, the modern liquidity index has a small impact on profitability. Even more surprising is that explains the connection between corporate profitability and liquidity, as well as the effect that all liquidity parameters have on the profitability of the Karachi exchange in terms of cash gaps and current ratios [91]. To find a means to evaluate liquidity, it was determined to research utilising. Their research revealed that whereas modern liquidity indices have a strong negative association with the rice field, older measurements have a significant positive link with and profitability measures.

Data and Methodology

Data Collection

Data was gathered from the annual reports of 50 firms registered on the Pakistan Stock Exchange were used to gather the data. The statistics were collected between 2011 and 2020. The world bank is another source used to compile data on economic growth.

Methodology

This study analyses how the Pakistani cement, textile, fertilizer, and pharmaceutical industries' company performance is influenced by financial leverage, supply chain finance, and liquidity. for the purpose of The model is estimated using a mixture of the pooled regression model (POLS), the random effects model (REM), and the fixed effects model (FEM). The estimate process is then conducted using the Generalized Method of Moments (GMM), which allows for the control of potential endogeneity and the detection of null hypothesis violations, to ensure the accuracy of the results. 2012. The return on assets ratio (ROA) is the way the author assesses firm performance (FP), according to previous academicsThe return on assets ratio (ROA), according to earlier academics, is used by the author to assess firm performance (FP) [92].

Supply chain financing (SCF) is evaluated using the cash conversion cycle (CCC), while financial leverage (FL) is determined by dividing total debt to total equity. Variable liquidity can be calculated by dividing the ratio of current assets by current liabilities.

Many researchers have utilized this ratio [93]. The model additionally incorporates control variables for firm size (logarithm of total assets) and economic growth all used the former to represent firm characteristics, while the latter was also discovered in research as a macroeconomic indicator[37,40,41,43-45].

GMM Methodology

This generalized method of moments (GMM) is a regression-based empirical technique for estimating the independent variable of an economic structure by integrating information from population moment circumstances with observable economic data with.

For the purpose of determining an objective function, GMM estimators make assumptions about variable moments, which give us population moment conditions. The comparable sample moment conditions are computed using the data. Compare to parameters , we have more sample moment circumstances in the generalized method of moments (GMM) [94]. Consequently, the following equation estimates the research model.

$$FP_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 SCF_{it} + \beta_3 LIQUIDITY_{it} + \beta_4 SIZE_{it} + \beta_5 EG_t + \varepsilon_{it}$$

VARIABLES	MEASUREMENT	SYMBOLS
Independent Variables		
Financial Leverage	Total debt / Total equity	FL
Supply Chain Finance	Logarithm of cash conversion cycle (CCC)= days receivable + days inventories – days payable	SCF
Liquidity	Current asset / Current Liabilities	LIQ
Dependent Variable		
Firm Performance	Net income / Total asset	FP
Control Variables		
Firm Size	Logarithm of total asset	SIZE
Economic Growth	Annual Growth of GDP	EG

Table 1

Dependent Variable

The independent variables used to evaluate the firm performance of the cement, textile, fertilizer, and pharmaceutical companies listed firmson the Pakistan Stock Exchange. A tool called "return on assets" is used to assess how well a business generates income from its assets. High ROA levels, therefore, show that businesses are using their assets effectively to produce higher returns. Net income is divided by total assets to arrive at this calculation.

Independent Variables

Financial Leverage

Financial leverage, as defined by is a measure of a the ratio of a company's total debt to its total equity, which includes liabilities that mature during a fiscal year [95]. Therefore, companies with high gearing use greater debt than from other sources to fund their operations along with projects. Moreover, businesses that used less financial leverage disclosed that equity or retained earnings were their primary sources of funding. Divide the entire debt by the total equity to calculate financial leverage.

Supply Chain Finance

Supply chain finance is represented by a cash conversion cycle (CCC). High supply chain finance performance is correlated with a shorter cash conversion cycle (CCC), and vice versa. Days receivable minus Days of inventory minus Days of payable equals Cash conversion cycle (CCC). Thus, $(\text{Days Receivable} / \text{Sales}) \times 365 + (\text{Days Total Inventories} / \text{Cost of Goods Sold}) \times 365 - (\text{Days Trades Payable} / \text{Cost of Goods Sold}) \times 365$ is the outcome.

Liquidity

According to the pecking order idea, highly liquid companies must use their own resources rather than seek outside funding [96]. However, Liquidity is the capacity of a firm to meet short-term obligations and sustain recurring free cash flows. So, the current asset to current liabilities ratio can be used to calculate the variable liquidity.

Control Variables

The two control variables are used in this research are economic growth and firm size. Due to resource diversity and the benefits of mass manufacturing, which lowers production costs, company size has a significant beneficial impact on business performance. Contends that because they have a much lower likelihood of defaulting on their debts than smaller businesses, large enterprises can readily receive loans from financial institutions [97]. According to a trade-off analysis, a firm's size is linked to risk and insolvency, [98]. Economic growth is measured by the rise in the gross domestic product on an annual basis.

Empirical Results

Descriptive Statistic

VARIABLE	INDUSTRY	MEAN	MAX	MIN	ST DEV	ST ERR
FP	CEMENT	10.01	37.68	-28.99	10.71	0.98
	TEXTILE	2.60	26.74	-33.44	9.71	0.85
	PHARMACUTICAL	9.36	42.9	0.00	10.11	0.92
	SUGAR	3.00	24.9	-2.99	10.37	0.91
FL	CEMENT	12.24	78.22	0.06	18.43	1.68
	TEXTILE	9.82	240.38	0.00	26.47	2.32
	PHARMACUTICAL	0.88	4	0.00	0.77	0.70
	SUGAR	4.88	42.59	.06	8.97	0.91
SCF	CEMENT	3.04	5.09	0.41	0.92	0.08
	TEXTILE	4.09	5.08	0.40	0.76	0.06
	PHARMACUTICAL	4.10	5.83	0.23	0.91	0.08
	SUGAR	3.55	5.52	0.00	1.32	0.07
LIQ	CEMENT	1.54	5.40	0.19	1.10	0.10
	TEXTILE	1.55	5.52	0.00	1.17	0.10
	PHARMACUTICAL	2.50	5.93	0.23	1.22	0.11
	SUGAR	1.73	5.52	0.00	4.16	0.11
SIZE	CEMENT	14.97	18.72	8.66	3.26	0.30
	TEXTILE	15.88	22.2	9.22	3.40	0.29
	PHARMACUTICAL	16.71	23.11	1.13	2.98	0.27
	SUGAR	14.97	22.28	8.65	4.16	0.36
EG	ALL	3.85	5.84	0.53	1.88	0.60

Table: 2

The results from Table 2 indicate that FP had standard deviation of 10.22 and standard error of 0.91 and mean of 6.24 during the study period. The 50 sampled firms in Pakistan recorded a maximum FP of 42.9 and a minimum FP of 0.00. The result from Table 2 also indicate that FL had a standard deviation of 11.635 and standard error of 1.40 and mean of 6.59 during the study period. The firms sampled recorded a maximum FL of 91.29 and a minimum FL of 0.00. On the average, SCF recorded a standard deviation of 0.97 and standard error of 0.07 with mean of 3.65. The highest SCF at 5.38 and minimum SCF of 0.26. The result from Table 2 also indicate that LIQ had a standard deviation of 1.91 and standard error of 0.10 and mean of 1.83 during the study period.

The maximum LIQ at 5.59 and minimum LIQ of 0.1025. According to table 2, SIZE had a standard deviation of 3.45 and standard error of 0.30 and 62.53 mean. The lowest SIZE of the period was 6.91 while in the period under review the highest of SIZE 21.57 was recorded. EG had a mean of 3.85 respectively with a standard deviation of 1.88 and standard error of 0.60 in the period under review. The minimum EG in the study period at 0.53 recorded in 2012 while the highest recorded 5.84 was in 2018.

Correlation

Finding the relationship between two variables is done through correlation analysis. The correlation is in the range of -1 to 1. If the value is close to zero, then there is no correlation among the variables. However, if the result is nearly one or positive, there is.

When one variable rises, the other rises as well, forming a direct link. If the value between the variables is close to -1 or negative, it suggests one variable is missing. The inverse link between the two variables is demonstrated by increasing one variable while decreasing the other. To test the link between the variables, a 5% (0.05) significant level was used. It is a significant or unimportant variable.

	FP	FL	SCF	LIQ	SIZE	EG
FP	1.0000					
FL	-0.1103	1.0000				
SCF	-0.0562	-0.1704	1.0000			
LIQ	0.4347	-0.1672	-0.0301	1.0000		
SIZE	0.1826	-0.0702	-0.0447	0.2095	1.0000	
EG	0.2193	-0.1548	0.0731	0.4001	-0.0246	1.0000

Table 3

Cement Sector

The correlations between the variables is shown in the table. Independent variable financial leverage(FL), supply chain finance(SCF) have negative correlation with dependent variable firm performance(FP).liquidity(LIQ) have positive correlation with dependent variable firm performance(FP). Whereas control variables (SIZE) and (EG) have positive correlation with dependent variable firm performance(FP).Furthermore, the Fixed effects model (FEM), the Random effects model (REM), and the Pooled Regression model (Pooled OLS) are used to evaluate the model.

	FP	FL	SCF	LIQ	SIZE	EG
FP	1.0000					
FL	0.0406	1.0000				
SCF	0.1275	0.0540	1.0000			
LIQ	0.3295	-0.0932	-0.1431	1.0000		
SIZE	0.0608	0.0264	-0.1538	-0.1639	1.0000	
EG	0.0264	-0.0552	0.0252	0.1074	-0.0265	1.0000

Table 4

Textile Sector

The correlations between the variables is shown in the table. Independent variable financial leverage(FL), supply chain finance(SCF) and liquidity(LIQ) have positive correlation with dependent variable firm performance(FP). whereas control variables (SIZE) and (EG) have positive correlation with dependent variable firm performance(FP).Furthermore, the Fixed effects model (FEM), the Random effects model (REM), and the Pooled Regression model (Pooled OLS) are used to evaluate the model.

	FP	FL	SCF	LIQ	SIZE	EG
FP	1.0000					
FL	-0.0162	1.0000				
SCF	0.0738	0.0242	1.0000			
LIQ	-0.0999	0.0586	0.1340	1.0000		
SIZE	0.1739	0.0949	0.0827	-0.0856	1.0000	
EG	0.1195	0.0327	-0.0192	-0.0192	-0.0219	1.0000

Table 5

Sugarsector

The correlations between the variables is shown in the table. Independent variable financial leverage(FL) and liquidity(LIQ) have negative correlation with dependent variable firm performance(FP).Supply chain finance (SCF) have positive correlation with dependent variable firm performance(FP). Whereas control variables (SIZE) and (EG) have positive correlation with dependent variable firm performance(FP).Furthermore, the Fixed effects model (FEM), the Random effects model (REM), and the Pooled Regression model (Pooled OLS) are used to evaluate the model.

	FP	FL	SCF	LIQ	SIZE	EG
FP	1.0000					
FL	0.1778	1.0000				
SCF	-0.2820	-0.1520	1.0000			
LIQ	0.3417	-0.0183	0.3166	1.0000		
SIZE	0.3602	-0.2453	-0.4869	-0.2688	1.0000	
EG	0.0671	-0.1187	0.0137	0.1852	-0.0141	1.0000

Table 6

Pharmaceutical Sector

The correlations between the variables is shown in the table. Independent variable financial leverage(FL) and liquidity(LIQ) have positive correlation with dependent variable firm performance(FP). Supply chain finance have negative relationship with dependent variable. whereas control variables (SIZE) and (EG) have positive correlation with dependent variable firm performance(FP).Furthermore, the Fixed effects model (FEM), the Random effects model (REM), and the Pooled Regression model (Pooled OLS) are used to evaluate the model.

Regression Results

FP	POOLED OLS	FEM	REM
constant	-0.019449	31.31946	5.475085
FL	-0.022301	-0.056781	-0.033300
SCF	-0.680042	-0.119481	-0.025938
LIQ	3.680042	1.129594	1.490164
SIZE	0.328186	-1.691888	-0.046012
EG	40.68419	87.04658	88.90459
R2	20.49%	68.25%	15.41%
Significance level	F(5,114)=5.88 Prob > F =0.0001	F(5,103)=4.24 Prob > F =0.0019	Waldchi2(5)=20.78 Prob > F =0.0000
F test		F(11,103)=14.09 Prob > F =0.0000	
Hausman test		chi2(5)= 4.65 Prob>chi2=0.4603	

Table 7

Cement Sector

The table demonstrates the statistical significance of the F-test at the 1% level (Prob > F = 0.0000). The random effects model (REM) is preferable, because Hausman test result shows no statistical significance (prob>chi2=0.4603). As a result, the random effects model (REM), which is preferable to the other, is chosen to test the model.

FP	POOLED OLS	FEM	REM
constant	-20.05827	94.03464	4.961405
FL	.0224707	-.0061343	-.0262423
SCF	2.605972	1.52119	1.486509
LIQ	3.234962	1.341388	1.452744
SIZE	.4400627	-6.205844	-.6512583
EG	-7.170998	-28.43179	-2.896621
R2	16.65%	18.62%	7.24%
Significance level	F(5, 124) = 4.95 Prob> F =0.00004	F(5,112)=6.24 Prob > F =0.0000	Waldchi2(5)=9.68 Prob > F =0.0848
F test		F(12,112)=13.18 Prob > F =0.0000	
Hausman test		chi2(5)= 19.17 Prob>chi2= 0.0018	

Table 8

Textile Sector

The table demonstrates the statistical significance of the F-test at the 1% level (Prob > F = 0.0000). The fixed effects model (FEM) is preferable since it takes into account the Hausman test result Chi2 (5) = 1.17, which has statistical significance at the 1% level.) . As a result, the fixed effects model (FEM), which is preferable to the other, is chosen to test the model.

FP	POOLED OLS	FEM	REM
constant	-15.81022	50.39257	-13.02731
FL	.4197482	-.0490368	.2484447
SCF	.7919538	1.163799	1.181662
LIQ	4.84228	1.998557	3.707957
SIZE	.2569326	-3.749343	.1540674
EG	43.57165	35.69234	48.25917
R2	50.47%	69.24%	27.29%
Significance level	F(5,124)= 25.28 Prob > F =0.0000	F(5,112)=5.52 Prob > F =0.0000	Waldchi2(5)=46.55 Prob > F =0.0000
F test		F(12,112)5.70= Prob > F =0.0000	
Hausman test		chi2(5)=60.49 Prob>chi2=0.0000	

Table 9

Sugar Sector

The table demonstrates the statistical significance of the F-test at the 1% level (Prob > F = 0.0000). The fixed effects model (FEM) is preferable since it takes into account the Hausman test result Chi2 (5) = 60.49, which has statistical significance at the 1% level.)

As a result, the fixed effects model (FEM), which is preferable to the other, is chosen to test the model.

FP	POOLED OLS	FEM	REM
constant	-25.04303	-69.107	-33.74739
FL	3.720507	.3862734	1.998656
SCF	-1.853883	-1.196343	-.9440127
LIQ	4.372061	1.927012	2.5782
SIZE	1.662884	4.613968	2.2778
EG	6.668212	29.73522	21.9601
R2	45.64%	77.20%	26.00%
Significance level	F(5,114)=19.15 Prob > F =0.0000	F(5,103)=8.12 Prob > F =0.0000	Waldchi2(5)=40.07 Prob > F =0.0000
F test		F(11,103)=12.97 Prob > F =0.0000	
Hausman test		chi2(5)=14.92 Prob>chi2=0.0107	

Table 10

Pharmaceutical Sector

The table demonstrates the statistical significance of the F-test at the 1% level (Prob > F = 0.0000). The fixed effects model (FEM) is preferable since it takes into account the Hausman test result Chi2 (5) = 14.92, which has statistical significance at the 1% level.) As a result, the fixed effects model (FEM), which is preferable to the other, is chosen to test the model.

FP	POOLED OLS	FEM	REM
constant	-4.593795	22.23678	-2.960672
FL	.0510003	-.0322463	-.0195738
SCF	-1.66489	.3418052	.0258193
LIQ	3.898151	1.953983	2.269803
SIZE	.5492152	-1.397596	.2358533
EG	20.9993	28.60876	33.15409
R2	24.96%	10.46%	
Significance level	F(5, 494)=32.87 Prob > F =0.0000	F(5,445)=11.41 Prob > F =0.0000	Waldchi2(5)=63.79 Prob > F =0.0000
F test		F(445,49)=13.38 Prob > F =0.0000	
Hausman test		chi2(5)= 31.14 Prob>chi2=0.0000	

Table 11

Regression (Overall Industry)

The table demonstrates the statistical significance of the F-test at the 1% level (Prob > F = 0.0000). The fixed effects model (FEM) is preferable since it takes into account the Hausman test result Chi2 (5) = 31.14, which has statistical significance at the 1% level.) As a result, the fixed effects model (FEM), which is preferable to the other, is chosen to test the model.

VARIABLES	CEMENT SECTOR	TEXTILE SECTOR	SUGAR SECTOR	PHARMACUTICAL SECTOR
FL	1.28	1.08	1.45	1.55
SCF	1.23	1.06	1.26	1.53
LIQ	1.07	1.06	1.14	1.21
SIZE	1.07	1.02	1.07	1.18
EG	1.04	1.01	1.01	1.06
MEAN VIF	1.14	1.05	1.19	1.30

Table 12

Multicollinearity Testing Results

There are no severe difficulties with multicollinearity (Mean VIF 10), as seen in the table.

Table 6

Result of Testing Heteroscedasticity and Autocorrelation

SECTORS	HETEROSCEDASTICITY TEST	AUTOCORRELATION TEST
CEMENT	chi2(1) = 0.94 Prob > chi2 = 0.3320	F(1, 106) = 452.46 Prob > F = 0.0000
TEXTILE	chi2(1) = 1.89 Prob > chi2 = 0.1689	F(1, 115) = 274.64 Prob > F = 0.0000
SUGAR	chi2(1) = 4.50 Prob > chi2 = 0.0339	F(1, 115) = 137.22 Prob > F = 0.0000
PHARMACUTICAL	chi2(1) = 0.04 Prob > chi2 = 0.08380	F(1, 106) = 324.51 Prob > F = 0.0000

Table 13

The table demonstrates that heteroscedasticity and autocorrelation are actual phenomena. To prevent heteroscedasticity and autocorrelation concerns, the model's estimation using the generalized method of moment (GMM). GMM also takes care of Endogeneity is a possibility.

GMM Estimation Results

	CEMENT		TEXTILE		SUGAR		PHARMACUTICAL	
FP	Coef.	P> z	Coef.	P> z	Coef.	P> z	Coef.	P> z
constant	-0.59	0.82	-20.78	0.00	-10.97	0.00	-20.37	0.00
FL	-0.01	0.00	0.01	0.029	0.29	0.00	2.88	0.00
SCF	-0.39	0.04	2.45	0.00	0.57	0.037	-1.71	0.00
LIQ	3.73	0.00	3.21	0.00	3.55	0.00	3.57	0.00
SIZE	0.35	0.01	0.46	0.00	0.10	0.043	1.37	0.00
EG	37.82	0.01	9.50	0.63	40.38	0.12	-5.91	0.78
Significance level	Waldchi2(6)=869.82 Prob > chi2 = 0.000		Waldchi2(6)=173.92 Prob > chi2 = 0.000		Waldchi2(6)=249.32 Prob > chi2 = 0.000		Wald chi2(6) = 949.52 Prob > chi2 = 0.000	
No of instruments			9		9		9	
NO of groups			13		13		12	
Arellano-Bond test for AR(2) in first differences	z = -0.69 Pr>z = 0.493		z = -1.83 Pr>z = 0.068		z = -2.97 Pr>z = 0.003		z = -3.35 Pr>z = 0.001	
Sargan test	chi2(7) = 42.87 Prob > chi2 = 0.000		chi2(3) = 51.18 Prob > chi2 = 0.000		chi2(3) = 37.23 Prob > chi2 = 0.000		chi2(3) = 16.53 Prob > chi2 = 0.001	

Table 14

Cement

At the level of significance (prob > chi2=0.000), the GMM estimator's results are adequate and valid as shown in the table. The Sargan test also confirms that the instruments used are appropriate. As a result, financial leverage (FL) has a negative (-0.01) influence on firm performance (FP) with a 1% threshold of significance, and supply chain financing (SCF) has a negative (-0.39) influence on firm performance (FP) with a 5% threshold of significance. Meanwhile, at a 1% significance level, liquidity (LIQ), Economic growth (EG) and size (SIZE) all have a favourable impact on firm performance (FP).

The Following Equation Represents the Model's Output as a Result

$$FP_{it} = -0.01FL_{it} - 0.39SCF_{it} + 3.73LIQ_{it} + 0.35SIZE_{it} + 37.82EG_{it} + \epsilon_{it}$$

Textile

At the level of significance (prob > chi2=0.000), the GMM estimator's results are adequate and valid, as shown in the table. The Sargan test also confirms that the instruments used are appropriate. As seen in the table, Financial leverage (FL) has a positive impact on firm performance (FP) with a 5% level of significance. At a 1% significance level, size (SIZE), liquidity (LIQ), and supply chain finance (SCF) all have a positive effect on firm performance (FP). The data gathered did not reveal any statistically significant effects of economic growth (EG) on firm performance.

$$FP_{it} = 0.01FL_{it} + 2.45SCF_{it} + 3.21LIQ_{it} + 0.46SIZE_{it} + \epsilon_{it}$$

Sugar

At the level of significance (prob > chi2=0.000), the GMM estimator's results are adequate and valid as shown in the table. The Sargan test also confirms that the instruments used are appropriate. With a 1% significance threshold, the table reveals that financial leverage (FL) and Liquidity (LIQ) has a favourable effect on firm performance (FP). Meanwhile, at a 5% significance threshold, supply chain finance (SCF) and size (SIZE) are favourable for firm performance (FP). The data collected has not been discovered to have a statistically significant impact of economic growth (EG) on firm performance.

$$FP_{it} = 0.29FL_{it} + 0.57SCF_{it} + 3.55LIQ_{it} + 0.10SIZE_{it} + \epsilon_{it}$$

Pharmaceutical

At the level of significance (prob > chi2=0.000), the GMM estimator's results are adequate and valid as shown in the table. The Sargan test also confirms that the instruments used are appropriate. As a result, supply chain financing (SCF) has a negative (-1.71) influence on firm performance (FP) with a 1% threshold of significance.

Meanwhile, at a 1% significance level, financial leverage (FL), liquidity (LIQ), and size (SIZE) all have a favourable impact on firm performance (FP). The data collected has not been discovered to have a statistically significant impact of economic growth (EG) on firm performance.

$$FP_{it} = 2.88FL_{it} - 1.71SCF_{it} + 3.57LIQ_{it} + 1.37SIZE_{it} + \epsilon_{it}$$

FP	Coef.	P> z
Constant	-3.698315	0.004
FL	.0433145	0.001
SCF	-1.652601	0.000
LIQ	3.44222	0.000
FIRM SIZE	.4770163	0.000
EG	26.02808	0.022
Significance level	Wald chi2(6)=1586.68 Prob > chi2 = 0.000	
Number of instruments	14	
Number of groups	50	
Arellano-Bond test for AR(2) in first differences	z = -3.07 Pr > z = 0.002	
Sargan test	chi2(7) = 186.29 Prob > chi2 = 0.000	

Table 15

GMM Estimation Results (Overall Industry)

At the level of significance ($\text{prob} > \chi^2 = 0.000$), the GMM estimator's findings are valid and appropriate, as indicated in the table. The Sargan test also verifies the suitability of the instruments. As a result, supply chain financing (SCF) has a negative (-1.652601) influence on firm performance (FP) with a 1% threshold of significance. However, at a 1% level of significance, firm performance is positively impacted by financial leverage (FL), liquidity (LIQ), and size (SIZE) (FP). Economic growth has a favorable effect on firm performance with a 5% threshold of significance.

Discussion

In this research, the effects of financial leverage, supply chain finance, and liquidity on firm performance were examined. The research revealed that financial leverage affects business performance negatively in the cement industry, but favorably in the textile, sugar, and pharmaceutical industries. By offering a better return on borrowed money than the cost of doing so, leverage is a financial strategy that aids in raising the rate of return. If a company's return on assets is higher than the interest rate on debt paid before taxes, then we can say that leverage is beneficial. If the company's return on assets is lower than the interest rate before taxes, then we can say that leverage is negative [99]. However, this study is noteworthy for being the first to offer empirical proof of the link between financial leverage and company performance in the pharmaceutical, sugar, textile, and cement sectors. While supply chain financing (SCF) has a beneficial impact on firm performance in the textile, sugar, and pharmaceutical industries, it has a negatively influence on firm performance in the cement industry. This means that supply chain finance gives participants the potential to shorten cash conversion cycles, increase working capital, and keep money on hand in order to effectively fund the following operating cycle, lower costs and risks, and ultimately increase profitability. This finding supports the conclusions of [9,100]. To put it another way, higher earnings and a shorter cash recovery period are the results of a low CCC. Cement, textile, sugar, and pharmaceutical industries all benefit from liquidity (LIQ) in terms of company performance. The current ratio is good since it only includes assets that can be quickly transformed into cash. Additionally, it means that higher liquidity ratios are indicative of improved liquidity, which benefits company performance. The finding show how financial leverage and supply chain finance affect firm performance, and the findings show that, in the Vietnam construction sector, financial leverage has a greater impact on firm performance than supply chain finance [24]. The discovering of who made an investment in the success of a corporation with relation to liquidity and financial leverage [16]. According to the findings, financial leverage and firm performance are negatively correlated with each other in the Pakistani textile industry, while liquidity and firm performance are positively correlated. The finding of (umar iqbal & muhammad usman, 2018)[33] on how financial leverage affects a firm's performance, The results show that while financial leverage has a positive and significant impact on business ROA, it has a negative and large impact on firm ROE.

Conclusion

This research paper's goal is to examine how Pakistan's cement, textile, sugar, and pharmaceutical industries are affected by financial leverage, liquidity, and supply chain finance. By examining the effects of financial leverage, liquidity, and supply chain finance on the performance of Pakistan's cement, textile, sugar, and pharmaceutical industries, the study fills a gap in the literature. For the purpose of completing the research aim, information was gathered from the company websites between 2011 and 2020. A regression equation model was made based on the industry categories selected, which included cement, textile, sugar, and medicines. Panel data were used in this investigation.

This finding used the same methodology across all industries to see if financial leverage, liquidity, and supply chain financing have varied effects on company performance data.

The conclusions are reached individually since data samples from the industry-specific sample were the subject of our study. The study's conclusions offer hope. The findings of this investigation show, in proof, that financial leverage, supply chain financing, and liquidity are all aspects that have a positive and negative, performance of the company.

The study's conclusions show that which have been first applied to the cement industry whereas liquidity has a beneficial impact, financial leverage and supply chain financing having negatively effect on firm performance. Second, the finding indicates that textile firms performance is positively impacted by financial leverage, supply chain finance, and liquidity. Further research revealed that financial leverage, supply chain finance, and liquidity all contribute to improved firm performance in the sugar industry. Additionally, financial leverage and liquidity favorably impact the pharmaceutical sector firm performance, whereas supply chain financing has a negative effect. Even if this research has served it's purpose but there is still much to be explored and learned in this. I suggest conducting additional research in a different state or country for future studies.. Although a bigger sample size to measure more accurate results. And also used another statistical technique to find more clear and accurate result. The study is the first to provide Empirical findings on how do financial leverage, supply chain finance and liquidity impact firm performance? Evidence from cement, textile, pharmaceutical and sugar sector of Pakistan. This study's shortcoming is that it neglects to take into account a number of control factors, like inflation and organizational skills, that could affect firm performance. Future research may find this to be interesting.

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