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The Impact of Cost Stickiness and Product Market Competition on Firms' Competitive Business Strategies

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Abstract

Objectives: This study examines the impact of cost stickiness and product market competition on firms' competitive business strategies. By analyzing these relationships, the research aims to provide insights into how market dynamics and cost behavior influence strategic decision-making.

Methodology/Design/Approach: The study is applied in nature and follows a causal-correlational methodology. The statistical population consists of firms listed on the Tehran Stock Exchange, from which 130 firms were selected using the systematic elimination sampling method. The research covers eight years from 2016 to 2023. The hypotheses were tested using three statistical models to assess the relationships between cost stickiness, market competition, and business strategy.

Findings: The results indicate an inverse relationship between product market competition and competitive business strategy, suggesting that firms in highly competitive industries tend to adopt defensive strategies. However, no significant relationship was found between cost stickiness and competitive business strategy. Additionally, the interaction between cost stickiness and product market competition does not significantly influence firms' strategic choices.

Innovation: This study contributes to the literature by exploring the interplay between cost behavior, market competition, and strategic decision-making in emerging markets. The findings offer valuable implications for managers and policymakers in shaping business strategies based on market conditions and cost structures.

Keywords: Business Strategy, Product Market Competition, Cost Stickiness.

1. Introduction

In general terms, strategy refers to a plan or a vision for future goals that an entity formulates and pursues to achieve its objectives. However, in management science, strategy formulation is considered one of the most important tasks of management, forming the basis for crucial decisions aimed at ensuring the organization's survival and excellence (Bahrami & Izadinia, 2020). In today's business environment, many organizations, rather than adopting a single unified strategy, employ a range of strategy-related tools, each designed at different organizational levels. These strategies not only respond to environmental conditions but also align with the strategies of other levels within the firm, the competitive strengths and competencies of the business unit, and the firm as a whole. Each level of strategy interacts closely with the others, and for an organization to succeed, these levels must be integrated (Izadi, 2013).

Business strategy, typically executed at the level of strategic products or business units, aims to enhance the competitive position of a firm's products and services in a specific industry or market segment. Two of the most common frameworks for business strategies are: (1) the Miles and Snow typology, which focuses on the rate of product-market change, and (2) Porter's typology, which focuses on customers and competitors. The success and value increase of a firm depends on the choice of an appropriate strategy by its managers. Choosing the wrong strategy can result in irreparable damage to the firm and its stakeholders.

Several factors can influence the selection of a firm's strategy, and no firm can rely solely on a single strategy throughout its entire lifecycle. The strategy should be adapted based on the market and competitive conditions, available resources, and budget. One key factor influencing strategy selection is market competition intensity. Depending on market concentration, product type, and market share, a carefully crafted strategy should be adopted. Additionally, firms need to consider their cost structure in relation to sales and market share. If costs cannot cover sales, or if there is cost stickiness, it can create significant challenges for the firm. Therefore, understanding the complex relationships between these variables highlights the importance of addressing the research topic, thus creating a compelling research gap.

In the following sections of this study, the theoretical foundations, hypotheses, and empirical background of the research will be presented. This will be followed by a discussion on the methodology, operational definitions of the research variables, and finally, the presentation of the research findings and conclusions.

Theoretical intermediate and development of the research hypothesis

In general terms, strategy refers to a plan and vision for the future goals of an entity within the market it operates, which the organization formulates and follows to achieve its objectives. In management science, however, strategy formulation is considered one of the most critical tasks of management. It serves as the foundation for vital decisions that ensure the survival and excellence of an organization. Today, most organizations use a set of related strategies, each designed at different organizational levels, rather than adopting a single, comprehensive strategy. In large, multi-product organizations, these levels typically include: 1) Organizational Strategy, 2) Business Strategy, and 3) Functional (Task) Strategy. It is important to note that in smaller organizations, the first two levels may be merged, creating a simplified approach (Akbari et al., 2019). Each strategy, in addition to addressing environmental conditions, aligns with the other strategies at the firm level, as well as the strengths and weaknesses of the business unit. The strategies at different levels are closely interlinked, and for an organization to succeed, these levels must be integrated and coordinated effectively.

Business strategy is typically executed at the level of strategic products or business units, with a primary focus on improving the competitive position of the firm's goods and services within a specific industry or market segment. To mitigate the negative effects of the

external environment and maximize the potential benefits of opportunities, organizations typically employ one of four types of adaptive strategies: defenders, aggressors, pioneers, and forwarders (Tanani & Mohebkhah, 2014). Defenders (defensive strategy) and aggressors (offensive strategy) represent two extremes on the spectrum of possible strategies, and competition closely ties the choice of strategy in the market. The type of competitors within the market largely determines the managers' strategic decisions to ensure the firm does not fall behind its rivals.

Competitiveness is defined as the ability of firms to survive in the market, protect their assets, generate returns for stakeholders, and ensure future job security (Khodadadi et al., 2014). This definition emphasizes the impact of competition on firms' actions. One key metric for assessing the competitive landscape of an industry is market concentration. Market concentration refers to how product markets are distributed among various firms in the industry, indicating how much of the market's total output is controlled by a few firms. The fewer the firms in the industry, the more concentrated it becomes. For example, in major industries like petrochemicals, steel, automotive, financial intermediation, and investment, a few large firms dominate the market. These firms often report higher sales revenues compared to their smaller counterparts, owing to their market dominance (Kheirkhah et al., 2019).

According to Porter (1990), competition in product markets affects management decisions and is a crucial determinant of a firm's profitability. Competitive conditions quickly drive inefficient managers out of the market, making market competition an external mechanism for corporate governance that supervises management and reduces agency costs (Demouri & Izadi, 2019). Competitiveness is also described as the firm's economic ability to maintain or increase its market share, with sales figures being a key indicator of the firm's market influence. Thus, one of the primary aims of this study is to investigate whether competition in the product market influences the choice of competitive strategy adopted by firms.

Cost behavior refers to the way costs respond to changes in the level of activity, with a proportional relationship existing between changes in costs and activity levels. Cost stickiness occurs when costs increase as sales rise but do not decrease to the same extent when sales decline (Vaghfi et al., 2019). Understanding how costs behave in response to changes in sales and activity levels is crucial for managerial decision-making. Traditional cost behavior models suggest that variable costs are directly related to changes in activity volume and sales (Namazi, 2018). However, cost stickiness is a distinctive feature, where cost reductions are less responsive than cost increases in response to fluctuating activity levels. Modern models of asymmetric cost behavior suggest that managers adjust resources based on changing demand levels to maximize sales and achieve higher profitability. This dynamic behavior continues in response to fluctuations in demand (Hashemi & Nejati, 2016; Anderson et al., 2007). Given the fierce competition in both domestic and global markets, cost management is viewed as a competitive advantage that enhances performance. Anderson (2003) defines cost stickiness as a behavior pattern reflecting changes in costs relative to sales fluctuations, with efficient managerial decisions determining whether to adjust resources during periods of declining sales (Deldar, 2016).

Based on the above theoretical considerations, the following hypotheses have been proposed for the present study:

- **H1:** Competition in the product market has a significant effect on the chosen business strategy of firms.
- **H2:** Cost stickiness has a significant effect on the business strategy of firms.
- **H3:** Cost stickiness intensifies the significant effect of competition in the product market on the chosen strategy of firms.

Research Background

Felicia et al. (2022), in a study titled *Business Strategy and Competition in Industries*, stated that the purpose of this research is to investigate whether an appropriate business strategy can improve the performance of the firm by using industrial competition as its moderating variable. This study uses the typology of the business strategy of Miles and Snow (1978). The research targets listed manufacturing firms on the Indonesian stock exchange during the years 2011-2016, as they have complete trading processes that better describe the implementation of business strategies. Research in emerging markets, such as Indonesia, provides a comprehensive picture of the impact of business strategy on business performance. The results show that aggressive firms have better financial performance than defenders and maintain this advantage for up to two years after the strategy is implemented. The study also indicates that innovative firms perform better than defenders, especially in highly competitive industries. This conclusion is important for managers in adopting an appropriate business strategy in a competitive environment.

Li and Lu (2021), in a study titled *Product Market Competition and Cost Stickiness: Evidence from China*, stated that product market competition affects resource allocation decisions and management cost adjustments, ultimately influencing cost stickiness. This paper uses semi-natural experiments and examples from the Chinese capital market to analyze and test these instruments. The conclusions are as follows: (1) in emerging markets, competition in the product market reduces the stickiness of costs; (2) for firms with a defensive strategy, the impact of product market competition on cost stickiness is not significantly diminished; (3) for publicly owned enterprises, the impact of product market competition on cost stickiness is significantly weakened. Additionally, the financial strength and competitive position of the industry reduce the impact of product market competition on cost stickiness.

Chen and Ma (2021), in a study titled *Financial Constraints, Internal Control, and Cost Stickiness*, stated that managers often find resource retention more effective than restructuring resources afterward. However, financing constraints have created uncertainty in resource decisions. The research sample includes data from manufacturing firms in China from 2009 to 2017. The findings show that financial constraints significantly affect the cost stickiness of firms. Additionally, low internal control quality intensifies the relationship between financial constraints and cost stickiness.

Habib and Costa (2021), in a study examining the relationship between debt maturity structure and cost stickiness, showed that despite a decrease in activity levels, managers deliberately continue to expand resources for personal gain. They investigated whether short-term debt limits this opportunistic cost behavior and found evidence supporting this hypothesis. The study also concluded that the availability of free cash flows, revenue management incentives, and an executive compensation structure impact cost stickiness, which is mitigated by short-term debt due to the shorter maturity of resources.

Li et al. (2020), in a study titled *Risk Management and Cost Asymmetry: Evidence from China*, stated that preferential risk management has a significant impact on cost management decisions, indicating that cost behavior is influenced by managers' risk preferences. The study concludes that cost stickiness increases with managers' risk tolerance, especially in firms with lower managerial oversight. Moreover, the moderating effect of managerial preferences is more pronounced in less competitive industries and regions with lower marketing intensity.

Habib and Hassan (2017) investigated business strategy, overvalued stocks, and stock price crashes. The results indicated that business strategy affects stock price crash risk, with the effect being stronger in aggressive firms and weaker in defensive firms. Additionally, high stock valuation positively influences stock price crash risk, and business strategy enhances the relationship between stock overvaluation and risk.

Cheng et al. (2013) concluded that there is a positive relationship between product market competition and earnings quality. Their results also indicate that there is a positive relationship between product market competition and the accuracy of public and confidential information available to investors and analysts.

Feso (2013) investigated the effect of capital structure and product market competition on firm performance. The results of the study showed that there is a direct and significant relationship between capital structure and firm performance, but competition in the product market has no effect on firm performance.

Ali et al. (2012) showed that competition in the product market enhances the ability of firms to compare within similar industries and improves the quality of managers' forecasts in concentrated markets. Despite foreign research on this topic, no study in Iran directly examines the subject of this research.

Boehner et al. (2011), in a study titled *Product Market Competition, Managerial Incentives, and Firm Valuation*, found that there is an inverse relationship between product market competition and firm performance, with performance decreasing as competition increases. This nonlinear relationship also reflects the durability of managerial incentives as competition intensifies.

Rostami et al. (2021), in a study entitled *The Impact of Product Market Competition and Life Cycle on Firms' Business Strategy*, focused on the impact of product market competition and the life cycle stages of firms on their business strategies. Data from 115 sample firms listed on the Tehran Stock Exchange from 2012 to 2018 was analyzed. The results showed that product market competition significantly influences business strategy, with firms in highly competitive industries preferring defensive strategies. The life cycle stage also affects strategy choices, with firms in the growth stage being more inclined to adopt aggressive strategies than firms in the maturation or decline stages. Furthermore, new firms tend to adopt opportunistic strategies, while older firms prefer analytical strategies.

Ghanbari and Salmasi (2021), in a study entitled *The Impact of Economic Crisis and Economic Growth on Cost Stickiness*, found that cost stickiness behaves differently in various economic periods. During economic prosperity, cost stickiness increases, but during recessions and periods of severe sanctions (such as the Corona period), cost stickiness decreases.

Fattahi et al. (2020), in a study titled *Cost Stickiness and Credit Risk of Banks*, found a positive and significant relationship between cost stickiness and the credit risk of banks. Increased cost stickiness leads to a decrease in asset quality, increased profit instability, and consequently, higher credit risk.

In a study titled *The Effect of Ownership Concentration on the Relationship between Cost Stickiness and Fixed Asset Investment in the Tehran Stock Exchange*, the research found an inverse and significant relationship between cost stickiness and fixed asset investment. Furthermore, ownership concentration positively influences the relationship between cost stickiness and fixed asset investment.

Vaghfi et al. (2019), in a study titled *Study of Cost Stickiness Behavior in Tehran Stock Exchange Firms*, concluded that cost stickiness occurs across various cost categories (cost of goods sold, general and administrative expenses, and operational costs). The study found that the increase in costs is greater than the decrease for the same change in activity levels.

In a study titled *The Effect of Ownership Concentration on the Relationship between Cost Stickiness and Risk of Firms Listed on the Tehran Stock Exchange*, Pourshyadeh et al. (2019) concluded that ownership concentration significantly reduces the relationship between cost stickiness and firm risk.

Hajiha et al. (2019), in a study titled *The Effect of Managers' Short-Run Attitude on Cost Stickiness of Firms Listed in Tehran Stock Exchange*, found that earnings management, based on real items, has a negative and significant relationship with cost stickiness.

Khodadeh Shamloo and Farsi (2018) examined the effect of competition in the product market on the relationship between business strategies and debt maturity structure, finding that aggressive business strategies are inversely related to the maturity of short-term debts.

Namazi and Fathali (2018), in a study titled *Investigating the Effect of Intellectual Capital and Free Cash Flow on Cost Stickiness in Tehran Stock Exchange Firms*, concluded that intellectual capital and free cash flow significantly affect cost stickiness, with higher intellectual capital leading to less cost stickiness.

Trivedi et al. (2017), in a study titled *The Effect of Firm Strategy and Management Ability on Cost Asymmetry*, found that investment strategy and management ability increase cost asymmetry, while competitive strategies and financing reduce it.

Diyanati Deilami and Bayati (2015) investigated the relationship between competition in the product market and independent auditor's fees, finding that market competition significantly affects auditor fees.

Fakhari et al. (2015) studied the effect of product market competition on the valuation and market of holding cash by firms, finding that increasing market competition positively affects the capital market valuation of cash holdings.

Vaez et al. (2015) investigated the effect of product market competition on the quality of earnings, finding that actual competition does not significantly affect earnings quality, but potential competition does.

Meshki et al. (2015), in a study titled *The Market Power of the Product and Industry Competitiveness on Earnings Sustainability*, found that increased competition improves earnings sustainability and that market power negatively affects sustainability.

Khodadadi et al. (2014) investigated the effect of product market competition on dividend policy, finding that higher competition reduces dividends, as firms in concentrated markets with high competition tend to conserve cash.

Namazi et al. (2014) examined the relationship between product market competition and financial information quality, finding a significant positive relationship between competition and financial information quality.

Research Methodology

The presented research is of an applied nature, and, methodologically, it is classified as causal and post-event correlation because it investigates the relationships after the occurrence of an event. The statistical population studied in this research consists of firms listed on the Tehran Stock Exchange, and the study period spans from 2016 to 2023. Firms that met the criteria for systematic elimination were selected as the final sample. To ensure comparability, the selected firms should have their financial year ending in March, and they should not have changed their fiscal year during the 8-year review period. Furthermore, the firms must have disclosed the required information, and this information must be accessible for analysis. By applying these conditions, 130 firms were chosen as the final sample after the screening process from the statistical population.

The data analysis of the sample firms was conducted using the panel data method with Eviews 12 software, and the standard error correction technique was applied for the final hypothesis testing. Various factors allow the researcher to gather more complete and reliable information, and regression analysis, using the standard error correction method, is considered the most suitable approach for investigating the relationships in this study.

Operational Definitions of Variables

Research Dependent Variable: Corporate Business Competitive Strategy

In the present study, following Rostami et al. (2021) and Tanani and Mohebkhah (2014), the combined scoring system proposed by Eitner and Lerker (1997) is used to determine the strategic type of each firm to calculate the combined scores for five ratios: sales growth rate, advertising cost to total sales, number of employees to sales, market value of the firm to its

book value, and the ratio of fixed assets to total assets. The scoring system is applied as follows:

First, the firms are divided into five groups based on the first four ratios, ranked from highest to lowest. In this ranking, the firm in the top quantile receives a score of 5, the firm in the lowest quantile receives a score of 1, and the other firms are scored according to their respective quantiles.

Next, the firms are ranked according to the last ratio. This time, the firm in the top quantile receives 1 point, the firm in the lowest quantile receives 5 points, and the rest of the firms are assigned scores based on their corresponding quantiles.

In the final step, the points obtained from the two stages are summed to obtain the final score for each firm. The combined score (sum of the five ratios) for each firm will range between 5 and 25 for a given year. Firms with a total score between 5 and 15 are classified as defensive firms, while firms with a total score between 15 and 25 are classified as aggressive firms.

Table 1: How to Score a Business Competitive Strategy

One fifth	Sales Growth Rate	Advertising Cost	Number of Employees	Firm Market Value	Fixed Assets
		Total Sales	Total Sales	Book Value of the Firm	Total Assets
First	5	5	5	5	1
Second	4	4	4	4	2
Third	3	3	3	3	3
Fourth	2	2	2	2	4
Five	1	1	1	1	5

Independent Research Variable: Product Market Competition (HHI)

Market concentration within industries is calculated using the Herfindahl-Hirschmann Index (HHI). The Herfindahl-Hirschmann Index measures the level of competitiveness within various industries. In this study, if the median value of the index in the sample is equal to 1, the value will be considered 1; otherwise, it will be assigned a value of 0.

$HHI = \sum^{n}_{i=1} (Si/S)^2$

Where:
HHI: Herfindahl-Hirschmann Index
SI: Firm Sales Revenue
S: Total sales revenue of firms in the firm's industry
n: The number of firms in the industry (Tariverdi et al., 2017).

Moderating Variable: Cost Stickiness (CS)

The concept of cost stickiness was first introduced by Anderson et al. (2003). Cost stickiness is a type of cost behavior that reflects the extent and manner in which costs change relative to changes in revenue over a period. Anderson et al. used a virtual regression model to measure cost stickiness, which is expressed as follows: Additionally, Kurdistani (2020), Reimer (2018), and Hamburg (2018) employed a similar approach to measure cost stickiness, with the remainder of the model indicating the level of cost stickiness.

$$log\left(\frac{\text{SGAt}}{\text{SGAt}-1}\right) = \beta_0 + \beta_1\, log\left(\frac{\text{Salest}}{\text{salest}-1}\right) + \beta_2\, Dt * log\left(\frac{\text{Salest}}{\text{salest}-1}\right) + e$$

In the above regard:
SGA: Sales, Administrative, and General Expenses in the Current Year (Operating Cost)
SGAt-1: Sales, administrative, and general expenses in the previous year

Sales: The sum of sales revenues in the current year.
Sales $_{t-1}$: The sum of sales revenues in the previous year
D: The dummy variable is the model that has two values (0 and 1). This variable is assigned to the number (1) when the sales revenues of the current year have decreased compared to the previous year (i.e., periods of decline in sales) and otherwise to the number (0). The remainder of the model is used as cost stickiness (Fatahi, Kordestani & Rastgooyan, 2020).

Control Variables

ROA: To calculate this variable, the net profit before interest and tax on total assets is used.
SIZE: To calculate this variable, the natural logarithm of the sum of assets is used.
LEV: The sum of total liabilities divided by the sum of total assets is used to calculate this variable.
MTB: To calculate this variable, dividing the capital market value by the book value of the capital at the end of the fiscal year has been used.

Research Regression Model

$$Strategy_{i,t} = + \beta \beta 0_1 HHI_{i,t} + \beta 2\ CS_{i,t} + \beta 3\ (HHI_{i,t} \times CS_{i,t}) + \beta 4 LEV_{i,t} + \beta 5\ SIZE_{i,t} + \beta 6\ ROA_{i,t} + \beta 7\ MTB_{i,t} + \varepsilon i,t$$

Descriptive findings

Descriptive Statistics of Research Variables

To investigate the general characteristics of the variables and analyze them accurately, it is necessary to be familiar with the descriptive statistics related to the variables. Table (2) shows the descriptive statistics of the data related to the variables used in the research after identifying and replacing the statistical outliers. The presented descriptive statistics are related to 130 sample firms in the 8 years (2016-2023) and equivalent to 1040 firm-years).

The central measure of the data is the mean, which represents the equilibrium point and the center of gravity of the distribution, making it an effective indicator of centrality. For instance, the average value for the leverage variable is 0.55, indicating that most of the data is concentrated on this point. In general, dispersion measures assess the extent to which data points deviate from one another or from the mean. One of the key measures of dispersion is the standard deviation. For example, the standard deviation for the firm's growth (market value to book ratio) is 5.63, while the standard deviation for cost stickiness is 0.10, indicating that these two variables have the highest and lowest standard deviations, respectively. The minimum and maximum values provide insight into the lowest and highest values for each variable. For example, the highest value for firm size is 19.77.

The results in Table (3) show that the significance level of the test in the research model is below 5%, indicating the presence of heteroscedasticity in the error terms. This issue was addressed in the final estimation of the models by applying the GLS (Generalized The Least Squares) method.

Table (2): Descriptive statistics of quantitative variables of the research

Variable	Mean	Max	Min.	S. dev.
CS	0.008	0.49	0.14-	0.10
Strategy	14.96	24.00	5.00	3.14
HHI	0.075	1.00	0.00001	0.21
ROA	0.14	0.67	0.001-	0.14
LEV	0.55	0.99	0.10	0.20
SIZE	14.66	19.77	11.03	1.50
MTB	6.40	17.99	1.02	5.63

Table (3): Results of the Variance Test

Test	Test Statistics	Sig
Research Model	18.34	0.010

Table (4): Results of the Serial Autocorrelation Test

Test	Test Statistics	Sig
Research Model	4.16	0.12

According to the results in Table (4), the significance level of the serial autocorrelation test for the research model is greater than 5%, indicating the absence of serial autocorrelation in the model.

According to the results presented in Table (5), the significance level of the variables in the reliability test is less than 5%, indicating that the variables are stable.

According to the results presented in Table (6), it can be observed that the significance level of the test for the research model's hypotheses exceeds 5%, indicating the acceptance of the common effects model. Therefore, there is no need to present the Hausman test (Banimahd et al., 2016).

The results in Table (7) indicate that the competition variable in the product market, with a negative coefficient (-0.83) and a significance level below 5% (0.025), has an inverse and significant relationship with the business strategy of firms. Thus, the first hypothesis of the research is accepted at the 5% error level. Additionally, the variable of cost stickiness, with a significance level above 5% (0.63), shows no significant relationship with the business strategy of firms, meaning the second hypothesis of the research is rejected at the 5% error level. Furthermore, the interaction between competition in the product market and cost stickiness, with a significance level greater than 5% (0.70), does not significantly affect the business strategy of firms. In other words, cost stickiness does not influence the relationship between competition in the product market and business strategy. Therefore, the third hypothesis of the research is also rejected at the 5% error level. All control variables (firm size, return on assets, firm growth, and financial leverage), with a significance level below 5%, exhibit a significant relationship with the dependent variable of the research. The coefficient of determination (R^2) is 38%, indicating that the independent and control variables in the model explain 38% of the variation in the dependent variable. Additionally, the value of the Durbin-Watson statistic is 1.96, which suggests that there is no serial correlation among the residuals of the model.

Table (5): Manai Test (Levin, Lin, and Chu) of Research Quantitative Variables

Variable	Test Statistics	Sig	Results
CS	30.4083-	0.0000	Stationary
Strategy	79.7548-	0.0000	Stationary
HHI	1209.7-	0.0000	Stationary
ROA	36.3154-	0.0000	Stationary
LEV	69.0191-	0.0000	Stationary
SIZE	34.5485-	0.0000	Stationary
MTB	52.8910-	0.0000	Stationary

Table (6): F-Limmer (Chow) Test Results

Test	Test Statistics	Sig
Research Model	0.97	0.56

Table (7): The result of testing the research hypotheses

$Strategy_{i,t} = + \beta \beta 0_1 HHI_{i,t} + \beta 2\ CS_{i,t} + \beta 3\ (HHI_{i,t} \times CS_{i,t}) + \beta 4 LEV_{i,t} + \beta 5\ SIZE_{i,t} + \beta 6\ ROA_{i,t+} \beta 7\ MTB_{i,t} + \varepsilon i,t$					
Dependent Variable: Business Strategy					
Variable	**Coefficients**	**Standard Error**	**Statistic t**	**Sig**	**VIF**
HHI	0.83-	0.37	2.24-	0.025	1.03
CS	0.33	0.71	0.47	0.63	1.14
HHI× CS	1.38	3.65	0.37	0.70	1.15
SIZE	0.55-	0.050	11.16-	0.0000	1.09
ROA	5.11	0.64	7.93	0.0000	1.68
MTB	0.25	0.013	19.07	0.0000	1.57
LEV	2.44	0.43	5.58	0.0000	1.57
Width from Origin	19.55	0.75	26.01	0.0000	-
Coefficient of Determination	0.38				
Watson Durbin	1.96				
Statistic F	90.69				
Significance level	0.0000				

Discussion & Conclusion

The main objective of this study is to examine the impact of cost stickiness and competition in the product market on the competitive business strategy of firms. In broad terms, strategy refers to the plan and vision for future goals that an entity follows in its market. In the field of management, the formulation and development of strategy is a critical responsibility of management, as it forms the foundation for vital decisions made by firm and business managers. As observed, the estimated coefficient for the competition variable in the product market, with a negative coefficient and a t-statistic value below 5%, indicates a significant and inverse relationship between the variables at the 95% confidence level.

Business strategy is typically implemented at the product or strategic business unit level, improving the competitive positioning of a firm's goods and services. It often emphasizes a specific industry or market segment. To mitigate the negative impacts of the environment and capitalize on opportunities, organizations generally adopt one of four adaptive strategies: defenders (defensive strategy), aggressors or pioneers (offensive strategy), forwarders, analysts, and passives. Defenders and attackers represent opposite ends of the strategic spectrum, and the type of competition in the market is closely tied to the strategy adopted by firms. In today's dynamic and competitive business environment, managers must select appropriate strategies to maximize environmental opportunities. In highly competitive industries, firms shift from offensive to defensive strategies, which is consistent with the inverse relationship observed in this study—when competition intensifies, firms tend to adopt defensive strategies to preserve market share and become less willing to take risks.

The results of the first hypothesis align with the findings of Rostami et al. (2021) and Cutler (2006), who concluded that firms in competitive markets adopt defensive strategies. The estimated coefficient for the cost stickiness variable, with a significance level greater than 5%, indicates that the relationship

between cost stickiness and business strategy is not significant at the 95% confidence level. Cost stickiness refers to the cost response to changes in activity levels. Specifically, costs tend to rise when sales increase but do not decrease as much when sales fall. Understanding how costs behave with fluctuations in sales and activity levels is essential for managerial decision-making. When cost behavior is not proportional to sales, leading to stickiness, managers may adjust their strategies accordingly. However, the results from this study suggest that the firm's strategy remains unchanged when cost stickiness occurs.

The estimated coefficient for the interaction between cost stickiness and competition in the product market, represented as a multiplication term in the statistical model, shows that cost stickiness does not significantly affect the relationship between competition in the product market and business strategy. Business strategy is typically executed at the strategic business unit or product level, emphasizing the improvement of the firm's competitive position in a specific industry or market segment. Competition and strategy are inherently interconnected, as the type of competitors in the market determines managerial decisions to avoid falling behind competitors. Given the increasingly dynamic and competitive business environment, managers must choose strategies that leverage environmental opportunities. Despite the potential for cost stickiness to influence managerial decisions, the results from testing the third hypothesis indicate that cost stickiness does not moderate the relationship between competition and business strategy. These findings are partly in line with the research of Lee and Lu (2021) and Tariverdi et al. (2017).

Practical Research Suggestions

Firms operating in highly competitive industries must develop well-defined strategies to ensure they stay ahead of their competitors and maintain their market share. To avoid falling behind, firms need to formulate and adopt appropriate strategic plans tailored to the competitive dynamics of their respective markets.

Before making decisions regarding business strategy, firm managers must assess the intensity of competition within the industry and the operational behaviors of competitors. This analysis enables managers to devise the most suitable strategic plan for the firm's future.

It is recommended that investors and market stakeholders take into account the intensity of competition in the industry and market when evaluating a firm's performance and managerial efficiency. Understanding this context will provide a clearer picture of the strategic choices made by managers.

Furthermore, capital market analysts should consider the competitive environment in the industry when assessing firm performance and reviewing management's strategic decisions. This approach will help ensure that the strategies adopted by firms align with the market conditions and contribute to long-term success in the industry.

Research Limitations

Walking toward a goal is often accompanied by limitations, which can slow down the achievement of the desired outcome. Research as a process aimed at solving a research problem is no exception. This section outlines the limitations of the present study to inform readers, helping them approach the generalization of the research results with greater awareness and fairness. The limitations of this study are as follows:

1) The results are based on data from firms listed on the Tehran Stock Exchange. Therefore, caution should be exercised when attempting to generalize the findings to other firms, particularly those not listed on the exchange.
2) The study does not include data from unlisted firms due to the inability to access such information.
3) Since the study's time frame spans from 2016 to 2023, caution should be exercised when generalizing the results to periods outside this range.

References

A Habib, MD Costa (2021) - Debt maturity structure and cost stickiness, Journal of Corporate Accounting-Wiley Online Library, https://doi.org/10.1002/jcaf.22479

Akbari, Mohsen, Farkhondeh, Mahsa, Ayagh, Zahra (2019) Investigating the Effect of Product Market Competition on Financial Performance by Moderating the Quality of Information Disclosure: Firms Listed in Tehran Stock Exchange. Journal of Asset Management and Financing, Vol. 7, No. (24), Vol. (1), pp. 29-44.

Ali, A., Liu, M., Xu, D., and Yao, T. (2012), "Corporate Disclosure, Analyst Forecast Dispersion, and Stock Returns," Available from URL: SSRN Working Paper Series.

Anderson, M. Banker R., and Janakiraman S. (2003) Are Selling General and Administrative Costs "Sticky"? Journal of Accounting Research 41, 4763.https://doi.org/10.1111/1475-679X.00095

Anderson, M. C., R. D. Banker, R. Huang, and S. N. Janakiraman. (2007) Cost Behavior and Fundamental Analysis of SG&A Costs. Journal of Accounting, Auditing & Finance, 22 (1), 1–28.

Bahrami, Zeinab & Izadinia, Naser (2020) Investigating the Analysis of the Impact of Earnings Management and Business Strategy on Bankruptcy Risk in Firms Listed in Tehran Stock Exchange, Shahid Ashrafi Isfahani University, Faculty of Administrative Sciences and Economics, M.Sc. Thesis.

Beiner, S., Schmid, M. M. and Wanzenried, G. (2011), "Product market competition, managerial incentives, and firm valuation," European Financial Management, No. 17, pp. 331–366.

Cheng, P., Man Paul, Y., and Cheong, H. (2013), "The Impact of Product Market Competition on Earnings Quality," Accounting and Finance, 53, PP. 137-162.

Diyanati Deilami, Zahra and Morteza Bayati (2015) The Relationship between Competition in the Product Market and Independent Auditor's Fees, Financial Accounting and Auditing Research, Vol. 1, No. 3, pp. 119-134.

Fakhari, Hossein, Seyyed Ruhollah Taghavi, and Mehdi Bashiri Jouybari (2015) Investigating the Effect of Intensity of Competition in the Product Market on Market Valuation of Firms' Cash Holdings, Journal of Financial Accounting Knowledge, Vol. 2, No. 1, pp. 47-65.

Fatahi, Yasin & Kordestani, Gholamreza & Rastgooyan, Hossein (2020) Cost Stickiness and Credit Risk of Banks, Quarterly Journal of Islamic Economics and Banking, No. 31, pp. 99-115.

Felizia Arni RudiawarniBambang, TjahjadiDian Agustia, and Noorlailie Soewarno (2022) Business strategy and industrial competition: the case of manufacturing companies. International Journal of Business Environment, Vol. 13, No. 1, Published Online: January 5, pp. 35-59.

Fosu, S. (2013), "Capital structure, product market competition, and firm performance: Evidence from South Africa," The Quarterly Review of Economics and Finance, http://dx.doi.org/10.1016/j.qref.2013.02.004

Ghanbari, Ali, & Salmasi Sawmill (2021). The Impact of Financial Crises and Economic Growth on Cost Stickiness. Accounting and management perspective. Volume (4), Issue (45). pp. 1-17.

Habib, A., & Hasan, M.M. (2017). Business strategy, overvalued equities, and stock price crash risk. Research in International Business and Finance, 39, 389-405.

Hajiha, Z., Ghaderi, Kaveh, and Ghaderi, S. (2019) The Effect of Managers' Short-Run Attitude on Cost Stickiness of Firms Listed in Tehran Stock Exchange. Asset Management and Financing, Autumn 2019 - Issue 26. pp. 27-44.

Hashemi, Seyed Abbas, & Nejati, Ali (2016) The Effect of Earnings Management on Cost Stickiness. Journal of Accounting Reviews (Chamran University). Volume 2, Issue 8, Pp. 93-108.

Homburg, C., Hoppe, A., Nasev, J., Reimer, K., & Unrig-Homburg, M. (2018). How Cost Stickiness Affects Credit Risk. Available at SSRN2792085

Izadi, Fatemeh (2013) Analysis of the Effect of Product Market Competition and Business Strategies on the Relationship between Financial Leverage and Financial Performance. M.Sc. Thesis. Faculty of Administrative Sciences and Economics, University of Isfahan.

Izadi, Minoo (2019) Investigating the Effect of Product Market Competition on the Relationship between Ownership Concentration and Dividend Policy in Firms Listed on the Tehran Stock Exchange. Financial Accounting and Auditing Research, Vol. 11, No. 42, pp. 229-249.

J Li, Z Luo (2021)- Product market competition and cost stickiness: Evidence from China Managerial and Decision Economics, 2021 - Wiley Online Library

Kheirkhah, Rosita, Asadi, Abdolreza, & Zindadel Ahmad (2019) The Relationship between Product Market Concentration and Power with the Dividend Policy of Firms Listed on the Tehran Stock Exchange. Journal of Commercial Research, No. 92, pp. 113-139.

Khodadadi, Vali Javad Nikkar, and Mohsen Rashidi Baghi (2014) The Effect of Competition in Product Market on Dividend Policy, Financial Accounting and Auditing Research, Vol. 6, No. 24. pp. 21-32.

Khodadatah Shamloo, Naser & Gharsi, Mohsen (2018) The Effect of Competitive Status in the Product Market on the Relationship between Business Strategy and Debt Maturity Structure. Conference on New Achievements in Management and Accounting Science. pp. 1-19.

Kordestani, Gholamreza & Mortazavi, Seyed Morteza (2012). Investigating the Effect of Managers' Considered Decisions on Cost Stickiness. Accounting and auditing reviews. Volume (19), Issue (67), pp. 73-90.

Meshki Miavaghi, Mehdi and Akbar Dalirian (2015). A Study of Earnings Sustainability, Industry Structure and Market Power in Tehran Stock Exchange, Journal of Commercial Research, No. 76, pp. 1-27.

Namazi, Mohammad, and Shahla Ebrahimi (2014) Investigating the Relationship between Product Market Competitive Structure and Stock Returns," Empirical Research in Financial Accounting, No. 1, pp. 9-27.

Namazi, Mohammad; Fathali, Akram (2018). Investigating the Effect of Intellectual Capital and Free Cash Flow on Cost Stickiness in Tehran Stock Exchange Firms. Empirical Research in Accounting, Winter 2018 Issue. pp. 30, pp. 223-250.

Namazi, Mohammad, Gholamreza Rezaei, and Alireza Mumtamian (2014) Product Market Competition and Quality of Accounting Information," Journal of Accounting Advancements, Shiraz University, Vol. 6, No. 2. pp. 131-166.

Nikbakht, Mohammad Reza, & Deldar, Mostafa (2016). Investigating the Behavior of Cost Stickiness and Its Impact on Audit Quality. Financial Accounting Research, Vol. 8, No. 3, Serial (29). pp. 77-100.

Nurul Houqe, M., Kerr, M., and Monem, M. (2013). Business Strategy and Earnings Quality. Electronic copy is available at: http://ssrn. Com/abstract=2198626.

Nurwati, A. (2010), "Corporate Governance and Earnings Forecasts Accuracy," Asian Review of Accounting, 18, PP. 50-67

Pour-Shiadeh, Ebrahim, Moradi, Zahra, Asadifar, Ahad, & Derakhshan, Javad (2019) The Effect

of Ownership Concentration on the Relationship between Cost Stickiness and Risk of Firms Listed in Tehran Stock Exchange. Winter Accounting and Management Outlook, Vol. 2, No. 20. pp. 1-15.

Reimer, K. (2019). Does Cost Stickiness Affect Credit Risk? In Asymmetric Cost Behavior (pp. 63-106). Springer Gabler, Wiesbad.

Rostami, Vahab & Rezaei, Leila & Tejari, Zeinab (2021) The Effect of Competition in the Product Market and Life Cycle on the Business Strategy of Firms with an Emphasis on New Firms. Studies in Intelligent Business Management, Allameh Tabataba'i University, Vol. (9), No. (36).

Tanani, Mohsen, and Mohebkhah Mohammad (2014) Investigated the Relationship between Business Strategy and Quality of Earnings and Stock Returns in Firms Listed on the Stock Exchange. Empirical Research in Accounting. Issue 13. pp. 105-127.

Tariverdi, Yadolleh, Nikkar, Javad, & Malekhodaei, Elaheh (2017) The Effect of Firm Strategy and Management Ability on Cost Asymmetry. Accounting and Auditing Reviews, University of Tehran. Volume (24), Issue (3). pp. 503-526.

Vaez, Seyed Ali, Mohammad Hossein Ghalambar, and Nasrin Ghanavati (2015) The Effect of Product Market Competition on Earnings Quality Using Factor Analysis Technique," Journal of Accounting Knowledge, Vol. 6, No. 21, pp. 129-149.

Vaghfi, Seyed Hessam, Pardin, Kaveh, & Khajehzadeh, Samiran (2019) A Study of Cost Stickiness Behavior in Tehran Stock Exchange Firms. Accounting, Accountability, and Community Interests, Winter 2019, No. 35. pp. 135-155.

WL Li, K Zheng (2020) Rollover risk and managerial cost adjustment decisions Accounting & Finance, 2020 - Wiley Online Library. https://doi.org/10.1111/acfi.12417