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The Impact of Reputation Capital on Stock Return in Banks: A Case Study in Borsa Istanbul

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Abstract

The aim of this study is to calculate the reputational capital of nine Turkish commercial banks whose stocks are traded on Borsa Istanbul between 2015 and 2021, in accordance with the reputational capital model (CRMF - The Reputational Capital of Banks in the Financial Markets) developed by Pacelli (2016), and to determine the impact of changes in certain micro and macro indicators on stock returns through panel data analysis. According to the results of analysis, at the 1% level of statistical significance, the price-earnings ratio positively affects stock returns, while the economic growth rate has a negative effect. At the 5% level of statistical significance, the change rate of reputational capital, net profit growth rate, and exchange rate positively affect stock returns. At the 10% level of statistical significance, the CBRT overnight interest rate negatively affects stock returns. It has been observed that the trading volume rate and consumer price index do not have statistically significant effects on stock returns.

Keywords: Corporate Reputation, Risk Management, Reputational Capital, Banking, Borsa Istanbul. *JEL Codes:* G21, G32, E44.

Bankalarda İtibar Sermayesinin Pay Senedi Getirisi Üzerinde Etkisi: Borsa İstanbul'da Bir Uygulama*

Özet

Bu çalışmanın amacı, Pacelli (2016) tarafından geliştirilen itibar sermayesi modeline (CRMF - The Reputational Capital of Banks in the Financial Markets) uygun olarak, 2015-2021 yılları arasında hisse senetleri Borsa İstanbul'da işlem gören dokuz Türk ticari bankasının itibar sermayesini hesaplamak ve bazı mikro ve makro göstergelerdeki değişimlerin hisse senedi getirileri üzerindeki etkisini panel veri analizi ile belirlemektir. Analiz sonuçlarına göre; %1 istatistiksel anlamlılık düzeyinde fiyat-kazanç oranı hisse senedi getirilerini pozitif yönde etkilerken, ekonomik büyüme oranı negatif yönde etkilemektedir. %5 istatistiksel anlamlılık düzeyinde itibar sermayesi değişim oranı, net kar büyüme oranı ve döviz kuru hisse senedi getirilerini pozitif yönde etkilemektedir. %10 istatistiksel anlamlılık düzeyinde ise TCMB gecelik faiz oranı hisse senedi getirilerini negatif yönde etkilemektedir. İşlem hacmi oranı ve tüketici fiyat endeksinin hisse senedi getirileri üzerinde istatistiksel olarak anlamlı bir etkiye sahip olmadığı görülmüştür.

Anahtar Kelimeler: Kurumsal İtibar, Risk Yönetimi, İtibar Sermayesi, Bankacılık, Borsa İstanbul. JEL Kodları: G21, G32, E44.

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1. INTRODUCTION

The banking sector in Türkiye is structurally showing continuous development and continues to grow every year. According to the data from the Banking Regulation and Supervision Agency (BRSA), as of March 2024, there are 63 banks, 210,341 employees, and 10,954 branches. Its total assets amount to TRY 25,886 billion, loans to TRY 12,930 billion, deposits (participation funds) to TRY 15,470 billion, total equity to TRY 2,294 billion, and profitability to TRY 154 billion (BRSA, 2024). These figures demonstrate that the banking sector is an indispensable component of the economy, highlighting the importance of preserving reputational capital for banks, the sector, and the national economy.

In the digitalized world, access to banking services has become easier, and banks have been forced to adapt to this change in order to stay competitive. However, this situation has also brought about various risks. Among these risks are those that can be effectively managed and quantified by banks, as well as those that are difficult or even impossible to quantify. At the forefront of these risks is reputational risk, which is the subject of this study.

Reputational risk is a risk with numerous sources and the potential to cause the greatest damage. Therefore, the element of trust has always been a priority in ensuring the smooth operation of banking activities. A loss of trust in banks can lead to customers and other stakeholders distancing themselves, causing a decline in stock values, deepening banking crises, and negatively impacting the economy. For this reason, it is crucial for banks to protect their corporate reputations.

Corporate reputation is a perception formed over time, representing an overall assessment of how respectable, reliable, and valuable an institution is perceived by all its stakeholders (Gotsi and Wilson, 2001: 24). If this assessment is positive, reputation becomes an opportunity for banks, positively influencing their growth. Conversely, a negative perception brings exposure to reputational risk. Thus, reputational risk refers to the likelihood of a bank incurring losses due to negative perceptions held by current or potential customers, partners, competitors, and regulatory authorities, or due to a decline in trust or damage to the bank's reputation as a result of failing to comply with existing legal regulations (BRSA, 2016: Article 3).

The existence of reputation stems from the bank's reputation resources, and poor management of these resources leads to reputational risk. When reputational risk materializes, banks can experience significant customer loss and may need to exert considerable effort to recover their former standing. Effective risk management is essential to protect against the significant negative impacts of reputational risk. In this context, careful management of reputational risk, including identifying, evaluating, classifying, reporting, and monitoring the sources of this risk, is of great importance. Banks can effectively manage the risks they can quantify. However, there are risks that are difficult to quantify or even impossible. At the forefront of these risks is the reputation risk, which has both excessive resources and the most destructive potential. Managing these resources, predicting their unpredictable consequences, and listing potential outcomes indeed require a comprehensive effort. However, monitoring data related to bank reputation that can be identified with quantitative models can provide bank managers with an early warning signal to anticipate risky situations. Pacelli (2016) calculated the reputation capital in financial markets monetarily with a method involving applied financial items and illustrated with examples that monitoring this indicator could be a risk management tool.

This study aims to investigate the impact of calculated reputation capital of banks on their stock performance using this model. By quantifying reputational capital and demonstrating its impact on the stock prices of banks, a new variable *"reputational capital"* has been introduced into national/international literature that can be considered in the framework of impact analyses

conducted in the banking sector. Additionally, this study stands out from others by quantifying the effect of reputational capital, filling the gap in the national/international literature.

2. CONCEPTUAL FRAMEWORK

Reputation, while being one of the most important intangible and immeasurable assets for all sectors and institutions, has become even more crucial for banks, which serve as the vital pillars of the economy, essentially acting as the blood vessels of the economic flow across all levels. Financial transactions in banks have become increasingly complex, the numbers of derivative products have increased, and as a result, significant increases in banking risks have occurred, to the extent that these risks could lead the entire world into crisis. This indicates that reputational risks for banks are significant in financial transactions, and their management is equally vital.

The Basel Committee defines reputation risk as the risk arising from negative perceptions of customers, shareholders, counterparties, investors, creditors, market analysts, or other relevant parties, including regulators, which could adversely affect a bank's ability to maintain its presence (BIS, 2009: 19). Reputation risk is multidimensional and reflects the perceptions of other market participants. Due to its broader impacts, responsibilities, and management, the Basel Committee has excluded reputation risk and strategic risk from the scope of operational risk (BIS, 2020: 2).

With the publication of the Reputation Risk Management Guide by the Banking Regulation and Supervision Agency (BRSA) in 2016, the management of reputation risks in the banking sector in Türkiye has also begun to be monitored.

Looking at the definitions related to reputation, it is understood that the impact of stakeholders' perceptions on their actions is emphasized. This perception will also determine the demand for equity. The value of bank stocks increases as a result of positive developments or news about the bank and decreases in adverse developments. Since these positive or negative news reflect the effects on the reputation of banks, it is acceptable to consider changes in stock prices as representing reputation financially.

The foundation of the study is based on a methodology developed depending on the market and book values of banks whose shares are traded on the Borsa Istanbul (BIST). "Reputation" as a valuable and confidential asset is calculated as the difference between book value and market value (Honey, 2009: 9). This is because a problem in the reputation of banks will affect stock prices in the market. At the same time, there are many factors that affect the market value of bank stocks. The most important of these factors are financial structure, management style, capital increase, profit distribution policies, insider trading, position and share in the sector, government intervention, and the quality of information in their financial statements (Dizgil, 2017: 266). When these factors are examined, it is understood that all of them are sources of reputation, and the market price of the stock fundamentally reflects the reputation of the bank.

2.1. The Reputational Capital Model

Due to its abstract concept, measuring and managing reputation is quite challenging. Additionally, since its quantification is equally difficult and complex, there is a lack of sufficient resources in the literature regarding the measurement of reputation risk. However, Italian academic Pacelli (2016) calculated the amount of capital (The Reputational Capital of Banks in the Financial Markets - CRMF) that could serve as the basis for reputation risk in financial markets using a specific methodology. Pacelli explained with examples that monitoring this capital over the years within a reputation risk management model could serve as an indicator of risk. If a negative trend is detected as a result of monitoring the capital underlying reputation risk at certain intervals, this indicates that the bank's reputation risk resources could pose a problem. Necessary measures can then be taken, and with good reputation risk management, the potential growth of the problem can be prevented.

The methodology of this study is based on Pacelli's (2016) research on calculating reputational capital in financial markets. To estimate a monetary value representing banks' reputation in financial markets, it is sufficient to multiply the difference between the stock market value and stock book value (MV/BV) ratio and the equity by the value creation capacity for shareholders. Thus, Pacelli's (2016) model can be formulated as follows (Pacelli, 2016: 112):

Reputational Capital of Banks in the Financial Markets (CRMF) = The Reputational Capital of Banks in the Financial Markets = [(Stock Market Value / Stock Book Value) - (Equity Profitability / Equity Cost)] x Equity

Stock Market Value / Stock Book Value (MV/BV): This ratio indicates the extent to which the market value of the stock exceeds its book value, serving as a performance indicator. The book value is calculated by dividing the bank's equity by the number of shares.

Equity Profitability: Average return on equity has been considered. Average Return on Equity (ROAE) = Net Kâr / Ortalama Özkaynak *Equity Cost:* The Capital Asset Pricing Model (CAPM) has been used for estimation of equity cost.

$$K_e = R_f + \beta_i * (R_m - R_f)$$

Ke: Equity cost

Rf: Risk-free interest rate determined by the average annual return of 10-year government bonds. **βi**: Measure of volatility in the stock market relative to the market

$$\beta = \frac{\operatorname{Cov}(r_i, r_m)}{\sigma^2(r_m)}$$

Cov (r_i, **r**): "i" represents the covariance between the return of the bank's stock and the return of the BIST 100 Index.

 σ^2 (r_m): It is the variance of the BIST 100 Index and represents systematic risk.

(**R**_m – **R**_f): The long-term average is assumed to be 6%.

2.2. Purpose of the Study

This study aims to investigate the effect of changes in certain micro (CRMF change rate, priceearnings ratio, net profit growth rate, and trading volume ratio) and macro indicators (economic growth rate, consumer price index-CPI, Central Bank of the Republic of Türkiye-CBRT overnight lending rate, basket exchange rate) on the stock returns of nine commercial banks (Akbank, Albaraka Türk, Garanti Bankası, Halkbank, İş Bankası, QNB Finansbank, Şekerbank, Vakıfbank, Yapı Kredi Bankası) traded on the Borsa Istanbul between 2015 and 2021. The reputational capital of these banks has been calculated in accordance with the reputation capital model (CRMF- The Reputational Capital of Banks in the Financial Markets) developed by Pacelli (2016), which takes into account stock values. Panel data analysis is conducted to examine the relationship between these changes and stock returns.

2.3. Literature Review

When reviewing the literature, it is observed that despite numerous studies on reputation risk and its management, there are few studies specifically focusing on measuring reputation risk. While there is depth in international sources regarding this topic, the national literature presents a shallow area. Upon reviewing the subjects of the studies, it has been determined that they mainly revolve around the management and measurement of reputation risk, which is particularly significant for banks. Some studies identify the relationship between corporate reputation components, financial performance, and stock prices in both national and international literature, and a selection of these studies is presented in Table 1:

Table 1	. Studies	on t	he	Relationship	between	Corporate	Reputation	Components	and	Financial
Perform	ance									

Author(s)	Method / Sample	Dependent Variable	Independent Variable	Relationship
Aupperle et al. (1985)	Survey and t-test (241 managers)	Return on assets (ROA)	Corporate social responsibility orientation	Neutral (n/a)
Worrel et al. (1991)	Event study (194 notifications)	Stock price movement	Announcements of layoffs	Negative (-)
Karpoff and Lott (1993)	Event study (132 events, 71 companies)	Stock price movement	Fraud announcements	Positive (+)
Klassen and McLaughlin (1996)	Event study	Stock price movement	Announcements regarding environmental award or crisis	Positive (+)
Teoh et al. (1999)	Event study	Stock price movement	Involvement of the set of boycott-targeted US firms	Neutral (n/a)
McWilliams and Siegel (2000)	Regression (524 companies)	Accounting profits	Corporate social performance from Domini 400 social index	Neutral (n/a)
Kotha vd. (2011)	Regression (41 internet companies)	Market value and sales volume	Reputation building activities	Positive (+)
Roberts and Dowling (2002)	Regression (149 companies)	Market return and return on sales	Average reputation score from Fortune reputation data	Positive (+)
Rose and Thomson (2004)	Regression (62 Danish companies)	Equity Market-to- Book Ratio	Corporate images in ten criteria	Neutral (n/a)
Wagner and Schaltegger (2004)	Survey and regression (135 UK and 166 German companies)	Economic performance	Environmental strategy, environmental performance	Negative (-)
Eberl and Schwaiger (2005)	Regression (30 German companies)	Depreciation, after-tax net income	Organizational competence and sympathy	Positive (+)
Inglis et al. (2006)	Regression (77 Australian companies)	ROA, ROE, ROI	Corporate image (composite scores of four dimensions)	Neutral (n/a)
Jacob et al. (2010)	Event study (363 environmental awards)	Stock price movement	Environmental initiatives and environmental awards	Inconsistent pattern
Lai et al. (2010)	Structural equation modeling (79 Taiwanese Companies)	Brand value and performance	Corporate social responsibility	Positive (+)
Ferreira (2015)	Event study (Four African banks)	Stock price movement	Operational loss cases	Positive (+)
Araujo and Vinhado (2016)	Event study (245 obsevations in Brasilian banks)	Stock price movement	Operational and reputational loss announcements	Positive (+)
Sakarya et al.(2019)	Event study (two public banks in BİST -13 op.loss)	Stock price movement	Operational loss cases	Positive (+)
Sakarya and Çalış (2020)	Event study, one sample t-test (10 banks in BİST-145 op.loss)	Stock price movement	Operational loss cases	Positive (+)
Sis Atabay and Şahin (2021)	Panel EKK pooled regression model (35 comp.listed in BIST 100 and Brand Finance	Return on assets (ROA)	Brand Finance brand value scores, innovation capasity	Positive (+)
Hwang (2022)	Companies (17,687 annuel sample) in listed KOSPI, KOSDAQ	Stock value	Corporate reputation cost	Positive (+)
Huo (2023)	Literature research method	Stock value	Corporate reputation	Positive (+)
Ricardianto et al. (2023)	Partial least square, t-test (9 Indonesian comp)	Stock price movement, ROE	Corporate reputation	Neutral (n/a)
Yıldırım and Uslu (2023)	Most repeated corporate brands (6) over 15 years	ROE, ROI	Score value in Reputation Institute reports	Positive (+)
Sabila et al. (2024)	Partial least squares, structural equation modeling (175 comp. listed on the Indonesia Stock Ex. 2017-2021)	Stock return volatility	Trading volume activity as a reputation factor	Positive (+)
Kaur et al. (2024)	Panel regression analysis (395 Indian comp. covering 2002– 2017)	Cost of borrowing	Market value over book value	Negative (-)

Source: (Lee and Roh, 2012: 651). The table has been updated by adding some studies in the literature.

The impact analysis studies identified in the literature have been categorized into studies that found a positive influence on corporate performance, studies that found a negative influence, and studies in which no relationship was identified. These are presented in Table 2.

Positive relationship betwe and financial performance of	en corporate reputation r stock price.	Negative relationship or no relationship between corporate reputation and financial performance or stock price.				
Karpoff and Lott (1993)	Çillioğlu and Şimşek (2013)	Aupperle et al. (1985)				
Klassen and McLaughlin (1996)	Erkmen and Esen (2013)	Worrel et al. (1991)				
Boyd et al. (1996)	Fiordelisi et al. (2014)	Teoh et al. (1999)				
Srivastava et al. (1997)	Ferreira (2015)	McWilliams and Siegel (2000)				
Deephouse and Ourse (1997)	Araujo and Vinhado (2016)	Wagner and Schaltegger (2004)				
Roberts and Dowling (1997)	Pacelli (2016)	Rose and Thomson (2004)				
Roberts and Dowling (2002)	Mattarocci et al. (2018)	Inglis et al. (2006)				
Palmrose et al. (2004)	Hogarth et al. (2018)	Jacob et al. (2010)				
Eberl and Schwaiger (2005)	Ferreira et al. (2019)	Moosa and Silvapulle (2012)				
Tan (2007)	Sakarya et al. (2019)	Tomak (2014)				
Lai et al. (2010)	Sakarya and Çalış (2020)	Blajer-Golebiewska (2014)				
Krueger et al. (2010)	Sis Atabay and Şahin (2021)	Ricardianto et al. (2023)				
Smith et al. (2010)	Hwang (2022)					
Kotha vd. (2001)	Huo (2023)					
Plunus et al. (2012)	Yıldırım and Uslu (2023)					
Sanches et al. (2012)	Sabila et al. (2024)					
Lee and Roh (2012)	Kaur et al. (2024)					
Fiordelisi et al. (2013)						

Table 2. 1	The Categorization	of the Analysia	s of Corporat	e Reputation o	on Financial	Performance
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Source: Prepared by the author.

According to Table 2, it is observed that the majority of studies reviewed in the literature find a positive relationship between corporate reputation, financial performance, and stock price, while studies indicating a negative or no relationship are in the minority.

3. Research Methodology

In the study, the reputational capital of nine banks whose stocks are traded on the Borsa Istanbul was quantified by using Pacelli (2016)'s reputational capital model in financial markets, and then the impact of the change rate of reputational capital calculated for seven periods between 2015 and 2021, along with the price-to-earnings ratio, net profit growth ratio, trading volume ratio, inflation rate, CBRT's overnight borrowing rate, economic growth rate, and exchange rate of the basket, on stock returns was investigated through panel data analysis.

3.1. Limitations of the Study

The study covers banks that are listed on the Borsa Istanbul Banking Index and capable of raising deposits or participation funds. Under the assumption that the reputation effect is determined by demand for stocks, only banks whose stocks are traded on the Borsa Istanbul were considered in the study. Some banks did not trade on the stock exchange in previous years, and to create data for the same time period for all banks, the research was limited to the period of trading on the stock exchange from 2014 to 2021.

3.2. Dataset of the Study

The stocks included in the reputation capital calculation study are the banks listed on the Borsa Istanbul Banking Index, namely Akbank, Albaraka Türk, Finansbank, Garanti Bankası, Halkbank, İş Bankası, Şekerbank, Vakıfbank, and Yapı Kredi. The study covers the period from 2014 to 2021, and the sources from which the data set was obtained are listed below:

- Annual Beta (β) coefficients were obtained from İş Yatırım Menkul Değerler A.Ş. (www.isyatirim.com.tr).
- Stock Market Value / Book Value data was obtained from the Finnet financial portal (www.finnet.com.tr).
- Bank equity profitability data were obtained from the independent audit reports published by the banks on their official websites in the last quarter of the year (The bank's own website).
- The annual average return of 10-year government bonds was obtained from the official website of the CBRT (www.tcmb.gov.tr)

3.3. Calculation of Reputation Capital for Banks Listed in the Borsa Istanbul Banking Index

The criteria obtained for the CRMF calculation method, which is taken into account when calculating the reputation capital of banks, are provided in tables within the datasets:

Reputational Capital of Banks in the Financial Markets (CRMF) = [(Stock Market Value / Stock Book Value) - (Equity Profitability / Equity Cost)] x Equity

The annual arithmetic averages of the daily calculated 10-year government bond interest rates in Türkiye are provided in Table 3.

Table 3. Trend in the Annual Average Interest Rate of 10-Year Government Bonds

Years	%
2014	9,3
2015	9,1
2016	10
2017	10,8
2018	15,3
2019	15,2
2020	12,5
2021	17

Source: (www.tcmb.gov.tr).

The annual beta (β) coefficients of banks within the scope of analysis were obtained from İş Investment. The averages of beta coefficients calculated annually between 2014 and 2021 are presented in Table 4.

β (Beta Coefficients)	2014	2015	2016	2017	2018	2019	2020	2021
AKBANK	1,323	1,418	1,242	1,149	1,337	1,503	1,184	1,257
ALBARAKA TÜRK	0,803	0,574	0,811	0,745	0,835	0,824	1,148	0,902
GARANTİ BANKASI	1,293	1,429	1,156	1,171	1,398	1,57	1,265	1,276
HALKBANK	1,506	1,506	1,408	1,61	1,494	1,493	1,035	0,86
İŞ BANKASI	1,192	1,249	1,161	1,153	1,282	1,391	1,048	1,196
QNB FİNANSBANK	0,722	0,662	0,848	0,61	0,595	0,671	1,628	0,919
ŞEKERBANK	0,391	0,49	0,811	0,873	1,2	1,186	1,229	1,123
VAKIFBANK	1,432	1,517	1,355	1,345	1,391	1,682	1,231	1,066
YAPI KREDİ	1,297	1,27	1,14	1,318	1,216	1,349	1,138	1,284

 Table 4. Banks'Average Beta Coefficients

Source: (www.isyatirim.com.tr).

The data used in calculating the cost of equity consists of daily averages throughout the year. The cost of equity for the banks was calculated using 10-year government bond interest rates, beta coefficients, and reference risk premium data with the aid of Microsoft Excel. As an example, the calculation of the cost of equity for Akbank for 2020 and 2021 is shown below.

 $K_e = r_f + \beta (r_m - r_f)$

K_e: Equity cost

 R_{f} : Risk-free interest rate determined by the average annual return of 10-year government bonds β_{i} : Measure of volatility in the stock market relative to the market

 $K_{Akbank} = 0,125 + 1,184 \times (0,06)^3 = 0,20$

$$K_{Akbank} = 0.17 + 1.257 \times (0.06) = 0.25$$
 (2021)

(2020)

The calculated cost of equity for the banks is collectively listed in Table 5.

Years Banks	2014	2015	2016	2017	2018	2019	2020	2021
AKBANK	0,17	0,18	0,17	0,18	0,23	0,24	0,2	0,25
ALBARAKA TÜRK	0,14	0,13	0,15	0,15	0,2	0,2	0,19	0,22
GARANTİ BANKASI	0,17	0,18	0,17	0,18	0,24	0,25	0,2	0,25
HALKBANK	0,18	0,18	0,18	0,2	0,24	0,24	0,19	0,22
İŞ BANKASI	0,16	0,17	0,17	0,18	0,23	0,24	0,19	0,24
QNB FİNANSBANK	0,14	0,13	0,15	0,14	0,19	0,19	0,22	0,23
ŞEKERBANK	0,12	0,12	0,15	0,16	0,23	0,22	0,2	0,24
VAKIFBANK	0,18	0,18	0,18	0,19	0,24	0,25	0,2	0,23
YAPI KREDİ	0,17	0,17	0,17	0,19	0,23	0,23	0,19	0,25

Table 5. Banks' Equity Costs

After calculating the cost of equity for the banks, it is necessary to determine the average return on equity. For this purpose, the following formula has been used:

Average Return on Equity (ROEA) = Net Income / Average Equity

Average Equity = [Equity (t-1) + Equity (t)] / 2

The data used in the formula are obtained from the independent audit reports on the official websites of The Banks Association of Türkiye, The Association of Participation Banks of Türkiye, and the banks.

For instance, the calculation of Average Return on Equity (ROEA) for Akbank in 2017 is as follows:

Net Profit=	= TRY 6.020.282.000	(2017)
Equity=	TRY 40.613.572.000	(2017)
Equity=	TRY 32.492.267.000	(2016)
Average E	quity = (TRY 32.492.267.000 + TRY 40.613.572.000) / 2	
Average E	quity = TRY 36.552.919.500	
ROEA= 6.0	20.282.000 / 36.552.919.500	
ROEA= %1	.6	

As of the end of 2017, Akbank's average return on equity (ROEA) was calculated at 16%. The average return on equity (ROEA) for the banks under study is shown in Table 6.

³ Since the risk premium was negative and fluctuations occurred in some periods, an expert opinion from an independent audit company was consulted, and the risk premium was considered to be 6%.

Years	2014	2015	2016	2017	2018	2019	2020	2021
Banks	2014	2015	2010	2017	2010	2017	2020	2021
AKBANK	0,14	0,12	0,15	0,16	0,13	0,11	0,11	0,17
ALBARAKA TÜRK	0,15	0,16	0,10	0,10	0,05	0,02	0,06	0,02
GARANTİ BANKASI	0,13	0,12	0,15	0,17	0,15	0,12	0,11	0,19
HALKBANK	0,14	0,13	0,13	0,16	0,09	0,06	0,07	0,03
İŞ BANKASI	0,13	0,10	0,14	0,13	0,15	0,11	0,11	0,17
QNB FİNANSBANK	0,11	0,08	0,13	0,14	0,18	0,17	0,14	0,19
ŞEKERBANK	0,09	0,04	0,05	0,04	0,03	-0,31	0,02	0,09
VAKIFBANK	0,13	0,12	0,15	0,18	0,16	0,09	0,13	0,08
YAPI KREDİ	0,10	0,09	0,12	0,13	0,14	0,09	0,11	0,19

Table 6. The Banks' Average Return on Equity (ROEA)

Source: The calculation has been derived from independent audit reports obtained from the official websites of the banks.

The stock market value/book value (MV/BV) ratios of the banks under study have been obtained from the Finnet finance application and are presented in Table 7.

Years	2014	2015	2016	2017	2018	2010	2020	2021
Banks	2014	2015	2010	2017	2010	2019	2020	2021
AKBANK	1,38	1,00	0,97	0,97	0,63	0,78	0,57	0,49
ALBARAKA TÜRK	0,87	0,56	0,47	0,56	0,34	0,54	0,65	0,51
GARANTİ BANKASI	1,49	0,97	0,90	1,09	0,72	0,87	0,70	0,59
HALKBANK	1,05	0,68	0,55	0,53	0,30	0,23	0,32	0,26
İŞ BANKASI	1,03	0,65	0,65	0,73	0,41	0,49	0,46	0,37
QNB FİNANSBANK	1,02	1,88	1,49	1,52	2,07	7,53	12,27	5,95
ŞEKERBANK	0,84	0,77	0,54	0,78	0,54	0,77	1,07	0,63
VAKIFBANK	0,83	0,57	0,57	0,73	0,34	0,42	0,40	0,28
YAPI KREDİ	1,05	0,62	0,57	0,63	0,35	0,51	0,55	0,45

Table 7. Banks' Market Value/Book Value (MV/BV) Ratios

Source: (www.finnet.com.tr).

At this stage, the calculation of reputation capital for capital allocation for reputation risk can be initiated. For example, the reputation capital for Akbank in 2019 is calculated as follows:

CRMF= [(MV/BV) - (ROAE/K_e)] * Equity

CRMF _{Akbank} = [(0,78) - (0,11/0,24)] * TRY 54.382.427.000	(2019)
CRMF _{Akbank=} TRY 17.414.855.048	(2019)

Akbank's reputation capital in financial markets for the year 2019 is TRY17.414.855.048. The amounts of reputation capital in the financial risk for all banks included in the analysis are presented in Table 8 over the years. The calculations were conducted in Microsoft Excel.

Years Banks	2014	2015	2016	2017	2018	2019	2020	2021
AKBANK	14,6	9,5	2,9	2,2	1,9	17,4	2,2	-15,8
ALBARAKA TÜRK	-0,4	-1,3	-0,4	-0,3	0,3	1,7	1,3	1,9
GARANTİ BANKASI	18,6	9,5	0,1	7,2	4,3	20,4	10,0	-12,0
HALKBANK	4,2	0,1	-3,1	-6,8	-2,5	0,2	-1,9	4,4
İŞ BANKASI	6,8	1,9	-5,9	-0,7	-11,1	1,4	-7,2	-30,9
QNB FİNANSBANK	2,1	11,4	6,6	6,0	16,3	110,9	223,8	113,5
ŞEKERBANK	0,1	1,1	0,5	1,4	0,9	4,3	2,5	0,8
VAKIFBANK	1,8	-1,8	-5,1	-4,5	-9,4	1,8	-10,7	-4,6
YAPI KREDİ	8,7	2,3	-3,4	-1,4	-9,3	4,9	-2,5	-19,4

Table 8. The Reputation Capitals of the Banks (TRY Billion)

According to this estimation methodology, the negative values of CRMF indicate that the market does not value the stock price of the bank according to its earning capacity, or this capacity is not reflected in the stock price. Positive values of CRMF, on the other hand, indicate that the market acknowledges the profitability of the bank's stock and also contributes to the bank's expectations of creating future economic value.

3.4. Determining the Effect of Reputation Capital on Bank Stock Returns through Panel Data Analysis

In this section of the study, the effect of reputational capital (CRMF) on stock returns is analyzed through panel data analysis, taking into account some micro and macro indicators affecting banks. In econometric analysis, three main methods are generally used: cross-sectional data analysis, time series analysis, and panel data analysis. Cross-sectional data analysis involves analyzing data from different units during the same period, whereas time series analysis focuses on analyzing data from a single unit over time (Wooldridge, 2009: 444). The method that allows for the combined analysis of cross-sectional and time series data, testing appropriate models, is referred to as panel data analysis (Greene, 2003: 612). The presence of no missing observations in the time series of panel data indicates a balanced panel in the datasets, whereas the presence of missing observations in the data implies an unbalanced panel (Wooldridge, 2009: 466).

Panel data analysis offers numerous advantages compared to single time series or cross-sectional analyses. It provides more effective forecasts (Hsiao, 1995: 398) and can yield higher quality and more detailed results (Gujarati, 1995: 638). While heterogeneity assumption is not considered in separate time series or cross-sectional methods, it is taken into account in panel data analysis, helping to prevent biased results. It allows for working with a large amount of data and providing a high number of observations, thus offering a high level of freedom (Baltagi, 2012: 6). However, alongside these advantages, there are notable disadvantages, such as the inability to obtain data cross-sectionally or over time due to reasons like participants' lack of information in survey studies and possible decreases in the number of observations in the dataset leading to attenuation bias (Frees, 2004: 11-12).

In the panel data analysis applied in this study, the stock return is the dependent variable, and the micro indicators of the nine banks included in the analysis are considered as follows: the change rate of CRMF, price-to-earnings ratio, net profit growth rate, and trading ratio. Macro factors such as the economic growth rate, Consumer Price Index (CPI), Central Bank overnight lending rate, and basket exchange rate are included as independent variables. To ensure that the variables used in panel data analysis are of the same type, the change rate of CRMF is employed. Accordingly, analysis was conducted for seven annual periods from 2015 to 2021 for nine banks, adhering to the annual calculation of Pacelli's (2016) CRMF model to determine the change in the previous period. EViews 8, EViews 12SV, and Stata 19.0 package programs were utilized in the panel data analysis.

In the analysis scope, descriptive statistics were first determined for the series. Subsequently, correlation analysis was conducted to determine whether the variables exhibit normal distribution, with the Pearson correlation method preferred for cases showing normal data distribution and the Spearman rank correlation method used when normal data distribution is not observed (Wilcox, 2012: 457). Alongside this examination, a test for cross-sectional dependency among units, which is one of the stages of panel data analysis, was conducted first. Subsequently, homogeneity tests were applied to these variables. The test for cross-sectional dependency, which indicates that the sections in the panel data model are affected by shocks occurring in the other sections, commonly utilizes the Breusch-Pagan (1980) LM test, Pesaran (2004) Scaled LM test, and Baltagi et al. (2012) Bias-corrected scaled LM test. Subsequently, unit root tests were conducted to determine the stationarity status of the variables. Accordingly, second-generation unit root tests were performed for variables

with cross-sectional dependency, and first-generation unit root tests were applied for variables without cross-sectional dependency to test the stationarity of the series. Pesaran (2007) CIPS test was chosen for variables with cross-sectional dependency, whereas Im, Pesaran, and Shin W-stat (2003), ADF Fisher (Maddala and Wu, 2003), PP Fisher (1987), PP Choi (2001), and ADF Choi (2001) tests were preferred for variables without cross-sectional dependency. Subsequently, impact model testing was conducted. Error term tests were applied to the detected impact model, and an appropriate estimation model was selected considering the identified errors, aiming to explain the validity of hypotheses. The hypotheses of the study are presented in Table 9.

Table 9. Hypotheses of the Study

	Main Hypothesis						
H ₁	Reputational capital has a positive influence on stock return.						
	Sub-Hypotheses						
H ₂	P/E ratio has a positive influence on stock return.						
H ₃	Net profit growth rate has a positive influence on stock return.						
H4	Trading ratio has a positive influence on stock return.						
H ₅	Inflation has a positive influence on stock return.						
H ₆	Economic growth has a positive influence on stock return.						
H ₇	Interest rate has a negative influence on stock return.						
H ₈	Basket exchange rate has a positive influence on stock return.						

Information on the variables included in the analysis is given in Table 10:

Table 10. Descriptions of Variables

Variables	Descriptions	Metric	Source
SR	Stock return (Dependent Variable)	$(SR_{t2}-SR_{t1})/SR_{t1}$	İş Investment
	Inde	ependent Variables	
CRMF	Change rate of reputational capital	(CRMFt2 - CRMFt1)/CRMFt1	
P/E	Price-to-earnings ratio	The ratio of the amount investors are willing to pay for TRY 1 of earnings per share. Share Price/Earnings Per Share	Finnet
NPG	Net profit growth rate	(Net Profit _{t2} – Net Profit _{t1})/Net Profit _{t1}	Finnet
TR	Trading ratio	Stock trading volume / End-of-period market value	İş Investment
EGR	Economic growth rate	$(GDP_{t2} - GDP_{t1})/GDP_{t1}$	CBRT
CPI	Consumer Price Index	CPI (Yearly)	CBRT
OLR	CBRT overnight lending rate	Overnight Lending Rate (Yearly)	CBRT
BE	Rate of change in the basket exchange	$BE = (USD exc. + EUR exc.)/2 \qquad (BE_{t2} - BE_{t1})/BE_{t1}$	CBRT

From the variables described in Table 10, the stock return is the dependent variable, while the independent variables include the reputation capital change rate, price-earnings ratio, net profit growth rate, trading ratio, economic growth rate, consumer price index (CPI), Central Bank overnight lending rate, and basket exchange rate change rate. Calculations were performed considering annual averages. Descriptive statistics for the variables included in the study are presented in Table 11:

Variable	Mean	Med.	Max.	Min.	Stand. Dev.	Skewn.	Kurtos	Jarque-Bera	Р	Obs.
CRMF	-0,75	-0,40	61,18	-72,55	12,61	-1,10	26,83	1503,93	0,00	63
EGR	20,11	17,08	43,59	11,72	10,03	1,74	4,53	37,82	0,00	63
P/E	10,43	5,75	85,80	0,00	13,88	3,52	16,91	638,20	0,00	63
OLR	14,50	13,50	25,50	8,50	5,61	0,81	2,56	7,48	0,02	63
SR	1,10	0,99	5,02	0,67	0,55	6,13	44,21	4853,10	0,00	63
NPG	4,12	2,88	22,98	0,00	4,39	2,23	8,95	145,18	0,00	63
TR	24,71	10,09	384,23	-59,02	70,11	3,13	15,59	519,29	0,00	63
CPI	12,85	12,28	19,60	7,67	4,15	0,18	1,80	4,09	0,13	63
BE	0,21	0,22	0,35	0,11	0,08	0,25	1,73	4,89	0,09	63

Table 11. Descriptive Statistics

The coefficients in the table represent the distribution of slopes (Jarque-Bera) and standard deviation, minimum, maximum, kurtosis, and skewness values of the units forming the cross-section (variables). In financial data, a kurtosis value close to zero and a skewness value close to three are expected. When examining the kurtosis and skewness coefficients, it can be observed that the skewness coefficients are different from zero, and the kurtosis coefficients mostly exceed three. Additionally, the Jarque-Bera values are mostly high (for example, JB statistic for HSG: 4853.10), indicating that, except for CPI, other variables have heterogeneous slope coefficients. Moreover, the p-value being below 5% for all variables except CPI and SK also indicates that the data for these variables do not follow a normal distribution. Considering these values (skewness, kurtosis, and Jarque-Bera), it can be concluded that the data of the cross-sectional units do not comply with the assumption of normal distribution.

For series that do not exhibit a normal distribution, the Spearman rank correlation test is conducted (Chok, 2010: 2-3). A Spearman rank correlation test was conducted due to the variables not showing a normal distribution, and the results are reported in Table 12.

Variables	CRMF	EGR	P/E	OLR	SR	TR	NPG	BE	CPI
CRMF	1,00	0,01	0,50	-0,05	0,22	-0,25	-0,60	-0,04	0,07
EGR	0,01	1,00	-0,18	0,64	0,07	0,25	0,10	0,93	0,82
P/E	0,50	-0,18	1,00	-0,10	0,37	-0,25	-0,27	-0,17	-0,22
OLR	-0,05	0,64	-0,10	1,00	-0,13	0,36	-0,13	0,86	0,71
SR	0,22	0,07	0,37	-0,13	1,00	-0,18	0,23	-0,01	-0,13
TR	-0,25	0,25	-0,25	0,36	-0,18	1,00	-0,03	0,29	0,33
NPG	-0,60	0,10	-0,27	-0,13	0,23	-0,03	1,00	0,04	0,01
BE	-0,04	0,93	-0,17	0,86	-0,01	0,29	0,04	1,00	0,82
СРІ	0,07	0,82	-0,22	0,71	-0,13	0,33	0,01	0,82	1,00

Table 12. Spearman Rank Correlation

Examining Table 12, the correlation coefficient between stock returns (SR) and reputation capital (CRMF) change rate is 22%, and the relationship with other variables is less than 40%. However, descriptive statistics and correlation coefficients alone are not sufficient to explain the relationship between SR and CRMF, as well as other independent variables. In determining the relationships between cross-sectional units, dependence, unit root, and autocorrelation tests are also important for identifying relationships.

In panel data analysis, one of the issues that may arise during unit root tests is cross-sectional dependence. Cross-sectional dependence can be defined as the occurrence of a shock in the examined units (banks) affecting other units (banks) in the panel data model with varying degrees of intensity (Koçbulut and Altıntaş, 2016: 152). Due to the possibility of inconsistent or biased results in analyses in which cross-sectional dependence is ignored, it is important to subject the data series to a test for cross-sectional dependence before starting panel data analysis (Menyah et al., 2014: 389). The data underwent three types of tests: the Breusch and Pagan (1980) LM test, the Pesaran (2004) Scaled LM test, and the Baltagi et al. (2012) Bias-corrected scaled LM test, and the results are reported in Table 13.

M.A. Candoğan - M. Acar İzmir İktisat Dergisi / İzmir Journal of Economics Yıl/Year: 2025 Cilt/Vol:40 Sayı/No:2 Doi: 10.24988/ije.1478640

Variables	Breusch-Pagan LM	P value	Pesaran scaled LM	P value	Bias-corrected scaled LM	P value
CRMF	36.26321	0,4546	0.031019	0.9753	-0.718981	0.4722
EGR	252	0,000***	25.45584	0,000***	24.70584	0,000***
P/E	68.11317	0.001***	3.784574	0,000***	3.034574	0.002***
OLR	252	0,000***	25.45584	0,000***	24.70584	0,000***
SR	84.56523	0,000***	5.723467	0,000***	4.973467	0,000***
TR	83.15677	0,000***	5.557478	0,000***	4.807478	0,000***
NPG	90.11163	0,000***	6.377117	0,000***	5.627117	0,000***
BE	252	0,000***	25.45584	0,000***	24.70584	0,000***
CPI	252	0,000***	25.45584	0,000***	24.70584	0,000***

Tablo 13. The Results of the Cross-Sectional Dependence Tests

*** Statistically significant at the 1% level.

According to Table 13, it is understood that the variables EGR, P/E, OLR, SR, TR, NPG, BE and CPI have cross-sectional dependence at the 1% significance level. However, the CRMF variable has a high p-value in all three tests, indicating that there is no cross-sectional dependence.

Additionally, the homogeneity of the slope parameters was tried to be determined. For this purpose, the Pesaran and Yamagata (2008) test model was used, and the hypothesis that the slope parameters are homogeneous was rejected and their heterogeneity was tested. The results of this test are presented in Table 14.

Table 14. Homogeneity Test of Slope Parameters

Dependent Variable	Independent Variable	Delta Value	P Value	Adj. Delta Value	Adj. P Value	Result		
	CRMF, EGR, P/E,					The homogeneity hypothesis is		
SR	OLR, TR, NPG, BE,	-3,201	0,001	-3,446	0.001	rejected. The slope parameters are		
	CPI					heterogeneous.		

After determining the heterogeneity of the slope parameters and cross-sectional dependencies of the variables, the next step is to conduct unit root tests. At this stage, the aim is to test whether the series are stationary by conducting second-generation unit root tests for variables with cross-sectional dependencies and first-generation unit root tests for variables without cross-sectional dependencies. The Pesaran (2007) CIPS test is preferred for variables with cross-sectional dependencies, while the Im, Pesaran, and Shin W-stat (2003), ADF Fisher (Maddala and Wu, 2003), PP Fisher (1987), PP Choi (2001), and ADF Choi (2001) tests are preferred for variables without cross-sectional dependencies. The results are presented in Tables 15 and 16, respectively.

Table 15. Results of the CIPS Unit Root Test for Variables with Cross-Sectional Dependencies

Variables	CIDE (fired)		Critical Value					
variables	CIFS (lixeu)	1%	5%	10%				
EGR	2.61**	-2.85	-2.47	-2.28				
P/E	-2.77**	-2.97	-2.52	-2.31				
OLR	2.61**	-2.85	-2.47	-2.28				
SR	-2.64**	-2.85	-2.47	-2.28				
TR	-2.45*	-2.85	-2.47	-2.28				
NPG	-2.44*	-2.97	-2.52	-2.31				
BE	2.61**	-2.85	-2.47	-2.28				
CPI	2.61**	-2.85	-2.47	-2.28				

** is statistically significant at the 5% level, * is statistically significant at the 10% level.

Table 15 presents the CIPS critical values for eight variables in the panel (Pesaran, 2007: 276-281). Accordingly, while the critical values for P/E and NPG are -2.97, -2.52, and -2.31 for 1%, 5% and 10% levels, respectively, the critical values for EGR, OLR, SR, TR, BE, and CPI are -2.85, -2.70, and -2.62,

respectively. Considering the results, it can be interpreted that all eight variables are statistically significant level stationary [I(0)] at 5% and 10% levels.

Statistics	Prob.
31.2241	0.0271*
-2.06751	0.0193*
61.6389	0.000**
-4.65873	0.000**
	Statistics 31.2241 -2.06751 61.6389 -4.65873

Table 16. Results of Unit Root Tests for CRMF Variable without Cross-Sectional Dependency

** is statistically significant at the 1% level, * is statistically significant at the 5% level.

Im, Pesaran and Shin W-stat

Considering the unit root test results in Table 16, it is observed that all p-values for the CRMF variable are below 5%, thus indicating that the null hypothesis of a unit root is rejected at the 1% and 5% levels of significance. Therefore, it can be concluded that the CRMF variable is stationary [I(0)] at the level.

-1.67183

0.0473*

After conducting tests for homogeneity of slope parameters, cross-sectional dependency, and stationarity of the series, it is vital to conduct several tests in order to ascertain the appropriate estimation method. Accordingly, the Chow test (1960) for testing the fixed effects model, the Hausman test (1978) for testing the random effects model, and the Breusch-Pagan (1980) LM test for testing the pooled effects model have been conducted. The findings from these tests are outlined in Table 17:

Dependent Variable	Independent Variable	Model	Test	Hypothesis	Test Stat.	P Value	Result
SR	CRMF, EGR, P/E, OLR, TR, NPG, BE, CPI	Fixed effects model	(Chow test) -F -Chi-Square	H ₀ : Pooled H ₁ : Fixed	2,27 20,99	0,0385 0,0072	The null hypothesis (H_0) is refuted, indicating that the fixed effects model is eligible.
		Random effects model	Hausman test	H ₀ : Random H ₁ : Fixed	20,54	0,0085	The null hypothesis (H ₀) is refuted, indicating that the fixed effects model is eligible.
		Pooled effects model	Breusch- Pagan LM	Ho: Pooled H1: Random	17,84	0,0127	The null hypothesis (H ₀) is refuted, indicating that the random effects model is eligible.

Table 17. Results of the Test for Variable Impact Models

In the fixed effects model, the Between-Groups F and Between-Groups Chi-Square tests, also known as the Chow test, were conducted. Since the p-values were below 5%, the pooled effects model in the H_0 hypothesis was not accepted, and it was understood that the fixed effects model would be more appropriate. In the random effects model, the Hausman test was conducted to compare the random effects with the fixed effects. Since the p-value for this test was below 5%, the random effects model in H_0 hypothesis was not accepted, confirming the suitability of the fixed effects model. Finally, to ensure more accurate results in the analysis, the Breusch-Pagan (1980) LM test was conducted. With a p-value of 0.0127, the pooled effects model in H_0 hypothesis was not accepted, indicating that the random effects model was appropriate. Since the fixed effects model was preferred in two out of the three tests for the effect model, the fixed effects model was chosen as the estimation model.

It is important to conduct an error term test to assist the decision. In order to determine the error terms, the variables in the model were subjected to the modified Wald test for variance (Greene, 2003), the Baltagi-Wu (1999) LBI test, and the Bhargava et al. (1982) Durbin-Watson test for

autocorrelation, and the Breusch-Pagan (1980) LM test for cross-sectional dependence. Table 18 contains the findings derived from these tests:

Dependent Variable	Independent Variable	Test	P Value	Test Statistics	Result
	CRMF, EGR, P/E, OLR, TR, NPG, BE, CPI	Breusch-Pagan LM Correlation Test	0.47	0.52	P >0.05 It has no error term correlation.
SR		Heteroskedasticity (Modified Wald Test)	0.00	1928.87	P <0.05 The variance of the error term is not constant across units.
SK		Autocorrelation of Error Terms: Bhargava et al., Durbin Watson Test and Baltagi-Wu LBI Test	0.01	BDW: 2.59 BW: 2.91	P <0.05 Error terms exhibit autocorrelation.

Table 18. Results of Correlation and Heteroskedasticity Tests

According to Table 18, Breusch-Pagan LM correlation test P value greater than 5% accepts the hypothesis that there is no error term correlation. As a result of the modified Wald test, a P value less than 5% rejects the hypothesis that the error term variance is constant across units.

The results of the Bhargava et al. Durbin Watson and Baltagi-Wu LBI tests for the null hypothesis of no autocorrelation of error terms show that the P value is again less than 5%. Therefore, the hypothesis is rejected and the existence of autocorrelation among error terms is determined.

If at least one of heteroskedasticity, autocorrelation, or inter-unit correlation is present in the estimated panel data model, the standard errors should be corrected (robust standard errors should be obtained) without touching the parameter estimates, or if they are present, estimation should be conducted with appropriate methods.

Before the estimation model, the presence of multicollinearity among the independent variables should be tested. When SR was taken as the dependent variable, the average of the variance inflation factor (VIF) values for the independent variables was found to be 3.96. Since this value is above 1.33, the presence of multicollinearity among the independent variables was determined (Uçan & Şahin, 2021: 242).

Driscoll and Kraay estimator (1998) is derived as an alternative to the Parks-Kmenta or PCSE approaches, which are weak in the case of large cross-section dimensions and provide consistent covariance matrix estimators only in the case of large T. This estimator produces consistent standard errors even in the presence of heteroskedasticity and provides robust standard errors in the presence of spatial and period-specific correlation in both large T and N cases (Tatoğlu, 2013: 277). Based on the results of the error term tests, it is considered appropriate to use the Driscoll-Kraay (1998) estimator.

4. Analysis Findings

Analysis results have led to the decision that the Robust GLS Driscoll-Kraay estimation model can better explain these relationships. The results obtained are shown in Table 19.

M.A. Candoğan - M. Acar İzmir İktisat Dergisi / İzmir Journal of Economics Yıl/Year: 2025 Cilt/Vol:40 Sayı/No:2 Doi: 10.24988/ije.1478640

Dep. Variable	SR							
Indep. Variable	Coefficient	Std. Error	t sta.	p value				
P/E	0,0419	0,0075	5,56	0,001*				
EGR	-0,0112	0,0028	-4,04	0,007*				
SK	2,0205	0,6092	3,32	0,016**				
NPG	0,0034	0,0013	2,65	0,038**				
CRMF	0,0017	0,0007	2,49	0,047**				
OLR	-0,0192	0,0098	-1,96	0,097***				
TR	-0,0503	0,0285	-1,76	0,129				
CPI	0,0051	0,0071	0,73	0,495				
С	-0,2102	0,0777	-2,7	0,035**				
R-squared		0,7058						

Table 19. Results of the Robust GLS Driscoll-Kraay Estimation Model

*, **, *** are statistically significant at 1%, 5% and 10% levels, respectively.

Examining Table 19, it is observed that:

- At the 1% level of statistical significance, the price-to-earnings ratio (P/E) positively affects stock returns, while the economic growth rate (EGR) negatively affects them.
- At the 5% level of statistical significance, changes in reputation capital (CRMF), net profit growth rate (NPG), and exchange rate (BE) positively affect stock returns.
- At the 10% level of statistical significance, the overnight lending rate (OLR) negatively affects stock returns.
- The trading ratio (TR) and inflation (CPI) were not found to have a significant influence on stock returns.
- Therefore, the results of the hypotheses are collectively presented in Table 20.

Table 20. Hypotheses Results

	Main hypothesis	Result						
H ₁	H ₁ The reputation capital has a positive influence on stock returns.							
	Sub-hypothesis							
H ₂	P/E ratio has a positive influence on stock returns.	Accepted						
H_3	Net profit growth rate has a positive influence on stock returns.	Accepted						
H ₄	Trading ratio has a positive influence on stock returns.	Rejected						
H ₅	Inflation has a positive influence on stock returns.	Rejected						
H ₆	Economic growth has a positive influence on stock returns.	Rejected						
H7	Interest rate has a negative influence on stock returns.	Accepted						
H ₈	Basket exchange rate has a positive influence on stock returns.	Accepted						

As seen in Table 20, the fact that the rate of change of CRMF, which is calculated in the study and proposed as an indicator of reputational capital, positively affects the stock return, albeit slightly (0.0017), supports the validity of the developed reputational capital model.

5. Conclusion

For the nine banks (Akbank, Albaraka Türk, Garanti Bankası, Halkbank, İş Bankası, QNB Finansbank, Şekerbank, Vakıfbank, Yapı Kredi Bankası) included in the analysis, the relationship between the change rate of reputational capital (CRMF), price earnings ratio (P/E), net profit growth ratio (NPG), trading ratio (TR), economic growth rate (EGR), inflation rate (CPI), overnight lending rate (OLR), change in basket exchange rate (BE), and stock return (SR) calculated for the seven periods between 2015 and 2021 was examined. The descriptive statistics of these variables were analysed, and Spearman's test was performed since they did not show a normal distribution, and the correlation coefficient between the CRMF value and the SR value was found to be 0.22. Since the correlation test alone is not always sufficient to explain the relationship between variables, the effects of independent variables on stock returns were analysed by panel data analysis. According to the results of the analysis, changes in reputation capital, price earnings ratio, net profit growth ratio, and basket exchange rate positively affect the stock return at the level of statistical significance, while economic growth rate and overnight lending interest rate negatively affect the stock return. Inflation rate and trading ratio have no effect at the level of statistical significance. The positive effect of reputational capital on stock return is consistent with the results of 35 studies in the literature that found a positive relationship between corporate reputation, financial performance, and stock price. The findings of prominent analyses related to the effects of corporate reputation have been compared with the findings of this study.

In their 1993 study, Karpoff and Lott found that news of fraud decreased the market value of the company's stock to a certain extent in terms of negative reputation. Deephouse's (1997) finding that positive newspaper coverage between 1988 and 1992 in the United States increased the financial performance of companies and Palmrose et al.'s (2004) case analysis, which found that the announcement of profit increases between 1994-1999 in some U.S. companies led to an increase in firm returns while announcements of misconduct had a negative effect, support the core arguments of this study. This situation reveals that changes in reputation interact in the same direction as changes in the stock market value. The findings that negative news about companies reduces their stock market value while positive news leads to an increase in returns can be said to support the positive relationship between changes in reputational capital and stock returns, as identified in our study.

Boyd et al. (1996), in their research, found that companies with strong corporate reputations were able to sell their products to customers at higher prices and therefore achieved higher returns. In our study, it has been found that banks with positive reputational capital have a favorable impact on stock returns. Therefore, firms with a good reputation gain various competitive advantages. One of these advantages is the ability of firms to sell their products to customers at higher prices, thereby achieving greater returns. This supports the conclusion in our study that an increase in reputational capital aligns with gaining a competitive edge.

Roberts and Dowling (2002) found a positive relationship between corporate reputation and financial performance using price-to-book (P/B) ratio, profitability, and total sales data. In the methodology for calculating reputational capital, the positive effect of the P/B ratio is significant, as it also indicates profitability. A high level of this indicator will result in higher profitability, and the positive relationship between corporate reputation and financial performance identified by Roberts and Dowling (2002) supports the finding in our study of a positive relationship between corporate reputation and returns.

Tan (2007), in his research on publicly traded companies in China, found that increases in total returns were positively related to corporate reputation. Lee and Roh (2012), in their study of 230 companies using the Fortune index between 2001-2005, found that corporate reputation had positive effects on the financial performance of technology companies. These two findings align with the result in our study, which shows that the rate of change in reputational capital has a positive, albeit modest, relationship with stock returns, which were considered an indicator of financial performance.

The finding by Smith et al. (2010) that a positive brand image has a favorable impact on companies' financial performance supports the core finding of our study, which reveals a positive relationship between corporate reputation and stock returns. However, Gök and Özkaya (2011), in their research on 17 companies listed on the Capital Most Admired Companies list that were traded on the Istanbul

Stock Exchange between 2003-2008, investigated whether these companies achieved returns above the market and found that the relevant portfolio had 10% lower returns than the weighted market portfolio. This finding does not support one of the conclusions of this study, namely that companies with a good reputation have higher returns. The reason for this could be deficiencies in other reputation components, such as financial performance and expectations.

Blajer-Golebiewska (2014), in her study of companies operating in Poland between 2011-2013, found a low correlation between corporate reputation and net profit as a financial performance indicator. This finding is consistent with the result in our study, which indicates a positive, albeit modest, relationship between the rate of change in reputational capital and stock returns, which were considered as an indicator of financial performance.

Ferreira (2015) investigated whether banks operating in Africa that experienced operational losses also suffered reputational damage, finding that banks experienced declines in market value after these incidents were made public. Similarly, Araújo and Vinhado (2016) measured the impact of negative news on Brazilian banks' stock prices following such announcements and found that large losses due to reputational risk occurred. The findings from studies conducted on banks in Africa and Brazil, which showed that reputation risk-related losses negatively impact stock prices, support the positive relationship between changes in reputational capital and stock returns identified in our study.

Sakarya and Çalış (2020) investigated whether operational loss incidents at banks listed on the Istanbul Stock Exchange triggered reputational risk through case analysis. They found that operational loss announcements had a negative impact on stock prices on the day of the announcement. Additionally, Sakarya et al. (2019) conducted an analysis using the same sample period and methodology but with fewer operational loss reports (13) on two state-owned banks operating on the Istanbul Stock Exchange, finding similar results. These two findings are also consistent with the positive relationship between changes in reputational capital and stock returns identified in our study.

Sis Atabay and Şahin (2021) examined the impact of brand value scores and innovation capacities on the return on assets (ROA) of 35 companies listed on the BIST 100 and in the Brand Finance magazine using the pooled regression method. It has been determined that brand value score and innovation capacity have a positive effect on ROA. This finding supports one of the conclusions of our study, which reveals a positive relationship between reputational capital and stock returns.

Hwang (2022) investigated the effect of corporate reputation-building costs on stock prices using sample data from firms listed on KOSPI and KOSDAQ between 2002-2018. A positive relationship has been identified between reputation costs and stock price information. Considering that these expenditures are thought to contribute to the establishment of corporate reputation, it can be stated that this finding aligns with our study's conclusion that corporate reputation positively influences stock returns.

Ricardianto et al. (2023) examined the impact of corporate reputation on stock price movements and return on equity (ROE). Using partial least squares and t-tests, the analysis of nine Indonesian firms found a neutral effect. This finding does not show similarity with the results of the study. The reason for this may be deficiencies in non-financial reputation components, such as expectations and objectives, in these firms.

Sabila et al. (2024) investigated the impact of trading volume activities, a reputation factor, on stock return volume. An analysis of 175 firms operating on the Indonesian stock exchange using partial least squares – structural equation modeling methods with data from 2017-2021 found a positive

relationship. This finding supports one of the conclusions of our study, which reveals a positive relationship between reputational capital and stock returns.

Kaur et al. (2024) investigated the effect of the market value of firm shares on the cost of borrowing over book value. Using panel regression analysis on data from 395 Indian firms between 2002-2017, they found a negative relationship between borrowing costs and stock market value. In our study, a positive increase in reputational capital occurs during periods when banks' stock market values exceed their book values. It has been found that banks with positive reputational capital have a favorable impact on stock returns. Therefore, banks with a good reputation provide various competitive advantages. The reduction in borrowing costs, being one of the competitive advantages for companies, aligns with the output of gaining a competitive edge through an increase in reputational capital in this study.

Based on the analysis results, it can be stated that incorporating reputational capital in the banking sector would enhance the effectiveness of reputation risk management. Quantifying reputational capital and demonstrating its impact on the stock prices of banks is significant in introducing a new variable for consideration in future impact analyses conducted in the banking literature.

This study stands out from other studies by quantifying the impact of reputational capital and addressing the gap in the national/international literature.

Moreover, evaluating, quantifying, monitoring, and estimating the effects of reputational risk within banks' risk management, specifically in the calculation of capital adequacy ratios as part of the Internal Capital Adequacy Assessment Process (ICAAP), makes this study distinctive.

As an area of development, reputational capital, typically calculated on an annual basis, could be measured quarterly, and its impact on stock prices could be analyzed. Applying the CRMF model to real sector companies and analyzing its effect on stock prices would contribute to enriching the literature. Furthermore, taking intellectual capital into account and conducting research that aids in the identification of reputational capital in banks would strengthen reputation risk management and offer more options in reputational capital calculation models.

REFERENCES

- Araújo, L. A. D. and Vinhado, F. (2016). *Reputational risk measurement: Brazilian Banks,* www.papers.ssrn.com, (Access Date: 14.06.2021).
- Aupperle, K. E., Carroll, A. B. and Hatfield, J. D. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *The Academy of Management Journal*, *28*(2), 446-463.
- Baltagi, B. and Wu, P. (1999). Unequally Spaced Panel Data Regressions with AR (1) Disturbances. *Econometric Theory*, *15*(06), 814-823, www.researchgate.net, (Access Date: 01.09.2022).
- Baltagi, B. H. (2012). Econometric Analysis of Panel Data, John Wiley and Sons: Chichester.
- Baltagi, B., Feng, Q. and Kao, C. (2012). *A lagrange multiplier test for cross-sectional dependence in a fixed effects panel data model*. Center for Policy Research Maxwell School of Citizenship and Public Affairs Syracuse University, Working Paper, No. 137, www.surface.syr.edu, (Access Date: 01.09.2022).
- BRSA. (2016). *Guidance on the management of reputational risk*, www.bddk.org.tr, (Access Date: 15.06.2021).
- BRSA. (2024). Main indicators report. www.bddk.org.tr, (Access Date: 23.08.2024).
- Bhargava, A., Franzini, L. and Narendranathan, W. (1982). Serial correlation and fixed effects model. *Review of Economic Studies*, 49(4), 533-549, www.jstor.org, (Access Date: 05.09.2022).
- BIS. (2009). Enhancements to the Basel II Framework, www.bis.org, (Access Date: 25.03.2020).
- BIS. (2020). Revisions to the principles for the sound management of operational risk. www.bis.org, (Access Date: 25.06.2021).
- Blajer-Golebiewska, A. (2014). Corporate Reputation and economic performance: The evidence from Poland. *Economics and Sociology*, 7(3), 194-207.
- Boyd, B. K., Carroll, W. O. and Dess, G. G. (1996). *Determining the strategic value of firm reputation: A resource-based view*. Working Paper, Old Dominion University.
- Breusch, T. S. and Pagan, A. R. (1980). The lagrange multiplier test and its applications to model specification in econometrics. *The Review of Economic Studies*, *47*(1), 239-253, www.jstor.org, (Access Date: 01.09.2022).
- Choi, I. (2001). Unit root tests for panel data. *Journal of International Money and Finance*, 20, 249-272, 2001.
- Chok, N. S. (2010). *Pearson's Versus Spearman's and Kendall's Correlation Coefficients for Continuous Data*. (Master Thesis). University of Pittsburgh, Graduate School of Public Health, Pennsylvania, USA.
- Chow, G. C. (1960). "Tests of equality between sets of coefficients in two linear regression", *Econometrica*, *26*(3), 591-605.
- Central Bank of the Republic of Türkiye (CBRT), www.tcmb.gov.tr, (Access Date: 15.06.2021)
- Çillioğlu, A. and Şimşek, A. (2013). Measuring Corporate Reputation: The Case of a State University, in: New Challenges, New Opportunities: Interdisciplinary Perspectives on Reputation Management, BAYBARS-HAWK B. and Samast O., (Eds.), Reputation Management Institute of Türkiye, Ankara, 1, 5-19.

- Deephouse, D. and Ourso, E. J. (1997). The effect of financial and media reputations on performance. *Corporate Reputation Review*, *1*, 68-71.
- Dizgil, E. (2017). Factors on the business level affecting the share circumstances: An application on business / industrial index sectors. *Journal of Academic Value Studies*, *3*(17), 265-276.
- Driscoll, J. and Kraay, A. C. (1998). Consistent covariance matrix estimation with spatially dependent data. *Review of Economics and Statistics*, *80*, 549-560, www. scirp.org, (Access Date: 05.09.2022).
- Eberl, M. and Schwaiger, M. (2005). Corporate reputation: disentangling the effects on financial performance. *European Journal of Marketing*, *39* (7/8), 838-854.
- Erkmen, T. and Esen, E. (2013). How do weak and strong corporate culture influence corporate reputation?, in: New Challenges, New Opportunities: Interdisciplinary Perspectives on Reputation Management. BAYBARS-HAWK, B. and SAMAST, O., (Eds.), Reputation Management Institute af Türkiye, 1, 45-53.
- Ferreira, S. (2015). *Measuring Reputational Risk in the South African Banking Sector.* (Master Thesis). Risk Management at the Vaal Triangle Campus of the North-West University, South Africa.
- Ferreira, S. J., Redda, E. and Dunga, S. H. (2019). A structural equation model of reputational risk in South Africa. *Cogent Economics and Finance*, *7*, 1-15.
- Financial Information News Network (Finnet), www.finnet.com.tr, (Access Date: 15.06.2021).
- Fiordelisi, F., Soana, M. G. and Schwizer, P. (2013). The determinants of reputational risk in the banking sector. *Journal of Banking and Finance*, *37*, 1359–1371.
- Fiordelisi, F., Soana, M. G. and Schwizer, P. (2014). Reputational losses and operational risk in banking. *The European Journal of Finance, 20*(2), 105-124.
- Frees, E. (2004). *Longitudinal and Panel Data: Analysis and Applications in the Social Sciences,* Cambridge University Press: England.
- Greene, W. H. (2003). *Econometric Analysis*, 5th Edition, Prentice Hall: Upper Saddle River, USA.
- Gujarati, D. N. (1995). *Temel Ekonometri*, Trans. ŞENESEN, Ü. and ŞENESEN GÜNLÜK, G. Literatür Yayıncılık: İstanbul.
- Hausman, J. A. (1978). Specification tests in econometrics, *Econometrica*, 46(6), 1251-1271.
- Hogarth, K., Hutchinson, M. and Scaife, W. (2018). Corporate philanthropy, reputation risk management and shareholder value: A study of Australian corporate giving, *Journal of Business Ethics*, *151*(2), 375-390.
- Honey, G. (2009). A Short Guide to Reputation Risks, Gower Publishing: Burlington.
- Hsiao, C. (1995). Panel Analysis for Metric Data, Handbook of Statistical Modelling in the Social and Behavourial Sciences, ARMINGER, G., CLOGG, C. C. and SOBEL, M. Z., 391-400.
- Huo, M. (2023). The impact of corporate reputation on stock value, *Advances in Economics and Management Research*, *6*, 556-559.
- Hwang, M. (2022). The impact of reputational expenses on stock price informativeness. *Korean Accounting Information Association.* 22(4), 95-113.
- Im, K., Pesaran, M. H. and Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, *115*(1), 53-74.

- Inglis, R., Morley, C. and Sammut, P. (2006). Corporate reputation and organisational performance: an Australian study. *Managerial Auditing Journal*, *21* (9), 934-947.
- İş Yatırım Menkul Değerler A.Ş., www.isyatirim.com.tr, (Access Date: 15.06.2021).
- Jacobs, B. W., Singhal, V. R. and Subramanian, R. (2010). An empirical investigation of environmental performance and the market value of the firm. *Journal of Operations Management*, *28*(5), 430-441.
- Karpoff, J. M. and Lott, J. R. (1993). The reputational penalty firms bear from committing criminal Fraud. *The Journal of Law and Economics*, *36*(2), 757-802.
- Kaur, A., Joshi, M., Singh, G., and Sharma, S. (2024). The impact of corporate reputation on cost of debt: a panel data analysis of Indian listed firms. *Journal of Risk and Financial Management*, *17(8)*, *367.*
- Klassen, R. D. and McLaughlin, C. P. (1996). The impact of environmental management on firm performance. *Management Science*, *42*(8), 1199-1214.
- Koçbulut, Ö. and Altıntaş, H. (2016). Twin deficits and the feldstein-horiokahypothesis: The analysis of panel cointegration with structural break under the cross section dependence on OECD Countries. *Erciyes University Journal of Economics and Administrative Sciences*, 48, 145-174.
- Kotha, S., Rajgopal, S. and Rindova, V. (2001). Reputation building and performance: An empirical analysis of the top-50 pure internet firms. *European Management Journal*, *19*(6), 571-586.
- Krueger, M. T., Wrolstad A. M. and Van Dalsem, S. (2010). Contemporaneous relationship between corporate reputation and return. *Managerial Finance*, *36*(6), 482-490.
- Lai, C., Chiu, C. J., Yang, C. F. and Pai, D. C. (2010). The Effects of corporate social responsibility on brand performance: The mediating effect of industrial brand equity and corporate reputation. *Journal of Business Ethics*, *95*(3), 457-469.
- Lee, J. and Roh, J. J. (2012). Revisiting corporate reputation and firm performance link. *Benchmarking: An International Journal*, *19* (4/5), 649-664.
- Maddala, G. S. and Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics*, Special Issue, 631-652.
- Mattarocci, G., Spaltro, A. and Comana, M. (2018). A *Quantitative Measurement of Reputational Risk*. Luiss University, Department of Management Chair of Risk Management, www.tesi.luiss.it 1-100, (Access Date: 28.02.2022).
- McWilliams, A. and Siegel, D. (2000). Corporate social responsibility and financial performance: correlation or misspecification? *Strategic Management Journal*, *21*(5), 603-609.
- Menyah, K., Nazlıoğlu, Ş. and Wolde-Rufael, Y. (2014). financial development, trade openness and economic growth in African Countries: New insights from a panel causality approach, *Economic Modelling*, *37*, 386-394.
- Moosa, I. and Silvapulle, P. (2012). An empirical analysis of the operational losses of Australian Banks. *Accounting and Finance*, *52*(1), 165-185.
- Pacelli, V. (2016). The Case Study of Lehman Brothers, in: DELL'ATTI, S. and TROTTA, A. (Eds.), *Managing Reputation in the Banking Industry, Springer*, 101-121. www.link.springer.com (Access Date: 18.02.2018).
- Palmrose, Z. V., Richardson, V. J. and Scholz, S. (2004). Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics*, *37*(1), 59-89.

- Pesaran, M. H. (2004). *General Diagnostic Tests for Cross Section Dependence in Panels*. The Institute for the Study of Labor (IZA), Discussion Paper No. 1240, 1-42, ftp.iza.org, (Access Date: 01.09.2022).
- Pesaran, M. H. (2007). A Simple panel unit root test in the presence of crosssection dependence. *Journal of Applied Econometrics, 22,* 265-312, www.onlinelibrary.wiley.com, (Access Date: 01.09.2022).
- Pesaran, M. H. and Yamagata, T. (2008). Testing slope homogenity in large panels. *Journal of Econometrics*, *142*(1), 50-93, www.researchgate.net, (Access Date: 01.09.2022).
- Plunus, S., Gillet, R. and Hubner, G. (2012). Reputational damage of operational loss on the bond market: Evidence from the financial industry. *International Review of Financial Analysis*, 24, 66-73.
- Ricardianto, P., Kosendang, E., Abidin, Z., Setiawati, R., Nofrisel, N., Handayani, S., Sundoro, O., Arubusman, D., Sianturi, T. and Endri, E. (2023). The effect of business strategy and firm reputation on financial performance and its implications for shipping companies' stock returns. *Wseas Transactions on Business and Economics*, *20*, 824-835.
- Roberts P. W. and Dowling G. R. (1997). The value of a firm's corporate reputation: How reputation helps attain and sustain superior profitability, *Corporate Reputation Review*, *1*, 72-76.
- Roberts P. W. and Dowling G. R. (2002). Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, *23*(12), 1077–1093.
- Rose, C. and Thomsen, S. (2004). The Impact of corporate reputation on performance: Some Danish evidence. *European Management Journal*, 22(2), 201-210.
- Sabila, I., Rahmawati, I. and Amperawati, E. (2024). Trading volume activity, earning quality and stock return volatility of listed consumer non-cyclicals companies in Indonesia: Does corporate reputation play a role? *Journal of Economics, Finance and Accounting Studies*. 6(3), 71-81.
- Sakarya, Ş., Çalış, N. and Deniz, D. (2019). The effect of reputation risk on financial performance: an application on public banks traded in BIST banking sector. *International Journal of Business, Economics and Management Perspectives*, *3*(2), 61-74.
- Sakarya, Ş. and Çalış, N. (2020). Relationship between reputation risk and firm value: An empirical application on BİST. *Balıkesir University The Journal of Social Sciences Institute*, *23*(43), 283-309.
- Sanchez, J. F., Sotorrio, L. L. and Diez, E. B. (2012). Can corporate reputation protect companies' value? Spanish evidence of the 2007 financial crash. *Corporate Reputation Review*, *15*(4), 228-248.
- Sis Atabay, E. and Şahin, K. (2021). The mediating effect of innovation capacity in the relationship between corporate reputation and financial performance. *International Journal of Economics and Innovation*, 7(1), 139-167.
- Smith, K., Smith, M. and Wang, K. (2010). Does brand management of corporate reputation translate into higher market value?. *Journal of Strategic Marketing*, *18*(3), 201-221.
- Srivastava, R. K., Mcinish, T. H., Wood, R. A. and Capraro, A. J., (1997). How do reputations affect corporate performance? The value of corporate reputation: evidence from the equity markets. *Corporate Reputation Review*, (1), 62-97.
- Tan, H. (2007). *Does the Reputation Matter? Corporate Reputation and Earning Quality*, China Southwestern University of Finance and Economics, Working paper (Access Date: 09.12.2021).
- Tatoğlu, F. Y. (2013). Panel Veri Ekonometrisi, 2. Press, Beta Yayınevi: İstanbul.

- Uçan, O. and Şahin, E. E. (2021). *Energy Consumption, Economic Growth and Current Account Deficit Relations: A Review on the Turkish Economy (1975-2015).* Middle East Conference on Contemporary Sciences, Conference Paper, www.researchgate.net, (Access Date: 01.10.2022).
- Teoh, S. H., Welch, I. and Wazzan, C. P. (1999). The effect of socially activist investment policies on the financial markets: evidence from the South African boycott. *Journal of Business*, 72(1), 35-89.
- Tomak, S. (2014). Corporate reputation and financial peformance of firms in Türkiye. *Niğde Üniversitesi İİBF Dergisi*, 7 (1), 289-303
- Wagner, M. and Schaltegger, S. (2004). The effect of corporate environmental strategy choice and environmental performance on competitiveness and economic performance: An empirical study of eu manufacturing. *European Management Journal*, *22*(5), 557-572.
- Wilcox, R. R. (2012). *Introduction to Robust Estimation and Hypothesis Testing*, 3rd Edition, Academic Press: United States.
- Wooldridge, J. M. (2009). *Introductory Econometrics*, 4th Edition, South-Western Cengage Learning: Canada.
- Worrell, D. L., Davidson, W. N. and Sharma, V. M. (1991). Layoff announcements and stockholder wealth. *The Academy of Management Journal*, *34*(3), 662-678.
- Yıldırım, Y. O. and Uslu, A. (2023). Examination of corporate reputation scores, market value and financial performance with the perspective of corporate brand sustainability. *Bingol University Journal of Economics and Administrative Sciences*, 7(2), 47-62.



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