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Determinants of Stock Returns among Family Firms Listed on the Casablanca Stock Exchange

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Abstract:

This study examines the determinants of stock returns among Moroccan family-owned firms listed on the Casablanca Stock Exchange, focusing on stock market conditions, share liquidity, and share price volatility. It addresses a question that remains relatively underexplored in emerging economies: to what extent are overall market conditions and stock-specific characteristics associated with the stock returns of listed family-owned firms? The empirical analysis is based on a sample of 20 family-owned firms that went public between 1999 and 2011, representing 139 annual observations. Data obtained from institutional and documentary sources are analyzed using three complementary econometric methods: Ordinary Least Squares (OLS), the Cross-Sectionally Augmented Autoregressive Distributed Lag (CS-ARDL) model, and the Generalized Linear Model (GLM). Stationarity and cointegration tests are also employed to examine the statistical properties of the series and long-run relationships. The OLS and CS-ARDL estimation results reveal a positive and statistically significant relationship between stock market conditions and stock returns, with long-run coefficients of 0.045 and 0.039, respectively. Share liquidity is also positively associated with stock returns, whereas share price volatility exhibits a negative relationship, with respective coefficients of −0.027 and −0.032. The GLM estimates confirm these patterns. This study contributes to the literature on the determinants of stock returns among family-owned firms in emerging economies by providing empirical evidence from the Moroccan financial market. In particular, it highlights the importance of jointly considering stock market conditions, share liquidity, and share price volatility when analyzing stock returns.

Keywords : Family-Owned Firms; Stock Returns; Moroccan Stock Market; Share Liquidity; Share Price Volatility
Classification JEL : G12, G14 et G15
Paper type : Theoretical Research or Empirical Research

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1. Introduction

Access to public equity markets represents an important stage in a company's development, providing opportunities to raise external capital, broaden its investor base, and enhance the visibility of its shares. However, listed companies are also exposed to market fluctuations, changing investor expectations, and the requirements of continuous financial disclosure. Consequently, stock market returns may be influenced not only by firm-specific characteristics but also by broader market conditions and the trading characteristics of individual securities. Understanding these determinants is particularly relevant in emerging financial markets, where liquidity constraints, information asymmetries, and market volatility may affect the valuation and trading of listed companies.

These issues deserve particular attention in the case of family firms. Unlike widely held companies, family firms are characterized by the involvement of family members in ownership and, frequently, in management and strategic decision-making. This organizational structure may influence their financial policies, risk-taking behavior, disclosure practices, and relationships with external investors. Previous studies have highlighted the distinctive governance characteristics of family-controlled firms and their implications for corporate performance and valuation (Anderson & Reeb, 2003; Villalonga & Amit, 2006). In this study, a family firm is defined as a company in which a family exercises effective control over the capital and participates in its management. *For empirical classification, the precise ownership threshold and the criterion used to identify family involvement in management must be specified.* This definition provides the basis for identifying the companies included in the sample.

The relationship between stock market conditions and stock returns has been widely examined in the financial literature. Research on the long-term performance of initial public offerings has notably investigated the evolution of newly listed companies' returns and the factors that may explain their subsequent performance (Ritter, 1991; Loughran & Ritter, 1995). Other studies have focused on the role of liquidity in asset pricing. Amihud and Mendelson (1986) emphasize the relationship between illiquidity and expected returns, while Pastor and Stambaugh (2003) demonstrate the importance of liquidity risk in explaining stock returns. These contributions show that the relationship between liquidity and returns depends on the distinction between expected returns, realized returns, and the mechanisms through which liquidity affects trading and price formation. Furthermore, stock price volatility represents an important dimension of market risk and may influence investors' decisions and the valuation of listed securities.

Despite these contributions, further empirical investigation is needed into the determinants of stock returns in emerging financial markets, particularly in the context of family-controlled listed companies. The specific characteristics of family firms, combined with the institutional and market conditions prevailing in emerging economies, provide a relevant setting for examining the relationships between market conditions, stock liquidity, price volatility, and stock returns. In Morocco, the Casablanca Stock Exchange provides an appropriate empirical context for investigating these relationships. Importantly, the focus of this study is not to assess the causal impact of initial public offerings (IPOs) on corporate or stock market performance, but rather to examine the determinants of stock returns among family firms that are already listed on the stock exchange. Accordingly, the IPO period is used solely to identify the companies included in the sample and define the empirical context of the analysis.

Against this background, the objective of this research is to examine the determinants of stock returns among Moroccan family firms listed on the Casablanca Stock Exchange. More specifically, it investigates the relationships between stock market conditions, share liquidity, price volatility, and stock returns. The empirical analysis covers 20 family firms initially listed between 1999 and 2011 and is based on 139 annual observations. Ordinary Least Squares

(OLS), the Cross-Sectionally Augmented Autoregressive Distributed Lag (CS-ARDL) model, and the Generalized Linear Model (GLM) are employed to examine these relationships and assess their short- and long-run dimensions. The analysis therefore concerns the stock market performance of listed family firms rather than the causal effects of their initial public offerings. The study makes three contributions. First, it provides empirical evidence on the determinants of stock returns among family-controlled listed companies in an emerging financial market. Second, it examines the relationships between market conditions, share liquidity, and price volatility and stock returns using complementary econometric approaches. Third, its findings may provide useful insights for investors and corporate managers seeking to understand the market factors associated with the stock performance of listed family firms.

Based on the theoretical arguments and previous empirical findings, the following hypotheses are proposed:

H1: Stock market conditions are positively associated with the stock returns of listed family firms.

Favorable market conditions may strengthen investor confidence, improve market sentiment, and support the valuation of listed securities. Consequently, a positive relationship between general market conditions and stock returns is expected.

H2: Share liquidity is positively associated with the stock returns of listed family firms.

Greater liquidity may facilitate transactions, reduce trading constraints, and improve the incorporation of information into share prices. These mechanisms may support stock market activity and realized returns. However, this relationship should be distinguished from the illiquidity premium documented in the asset-pricing literature, which concerns the expected compensation investors require for holding less liquid securities (Amihud & Mendelson, 1986; Pastor & Stambaugh, 2003).

H3: Share price volatility is negatively associated with the stock returns of listed family firms.

Higher price volatility reflects greater uncertainty and market risk. It may weaken investor confidence and increase uncertainty surrounding the valuation of shares, thereby being negatively associated with stock returns.

The remainder of the article is organized as follows. Section 2 presents the conceptual and theoretical foundations of the study, reviews the relevant empirical literature, and develops the research hypotheses and conceptual framework. Section 3 describes the methodological framework, including the data, sample selection, variable definitions, and econometric approach. Section 4 presents and analyzes the empirical findings, including the descriptive statistics, panel unit root and cointegration tests, econometric estimations, hypothesis testing, and diagnostic tests. It also discusses the main findings, their implications, the limitations of the study, and the resulting recommendations. Finally, Section 5 presents the conclusion, summarizes the main findings, and outlines avenues for future research.

2. Fondement Conceptuels

2.1. Conceptual Foundations

2.1.1. Family Firms and Stock Market Listing

Family firms represent a distinctive organizational form in which ownership control and managerial involvement are concentrated, at least partly, within a family. Unlike widely held corporations, these firms are often characterized by the participation of family members in strategic decisions, the preservation of family control, and the pursuit of long-term business continuity. Anderson and Reeb (2003) and Villalonga and Amit (2006) emphasize that family ownership and control can influence corporate governance, financial decisions, and firm valuation.

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In this study, a family firm is defined as a company in which a family exercises effective control over the share capital and participates in management or strategic decision-making. This definition is used to identify the 20 family-owned companies included in the empirical sample. The family dimension provides the organizational context of the investigation rather than a separate explanatory variable in the econometric model.

Stock market listing refers to the admission of a company's shares to trading on an organized financial market. This process enables companies to access external equity financing, broaden their investor base, and increase the visibility of their securities. However, listing also exposes shares to market mechanisms, investor expectations, and fluctuations in supply and demand. Consequently, the stock market performance of listed companies depends not only on their internal characteristics but also on the financial environment in which their securities are traded.

2.1.2. Stock Returns

Stock returns represent the financial gain or loss resulting from changes in the price of a security over a given period. They constitute an important indicator of stock market performance because they reflect changes in the market valuation of companies from the investor's perspective.

In this research, stock returns are measured through the variation in share prices between two successive reference periods. The measure is calculated as follows:

$$R_{it} = (P_{it} - P_{i,t-1}) / P_{i,t-1}$$

Where:

- R_{it}: Stock return of company i during period t.
- P_{it}: Share price of company i at the end of period t.
- $P_{i,t-1}$: Share price of company i during the previous period.

Stock returns are influenced by several factors, including general market conditions, trading activity, investor expectations, and the level of uncertainty surrounding individual securities. Accordingly, examining these factors provides a basis for understanding differences in the stock market performance of listed family firms.

2.1.3. Market Conditions

Market conditions refer to the general financial and economic environment in which securities are traded. They include changes in market indices, investor sentiment, trading activity, and the overall direction of the stock market. Favorable market conditions may encourage investment, strengthen investor confidence, and support increases in share prices. Conversely, unfavorable conditions may weaken demand for securities and negatively affect their returns.

In this study, market conditions are captured through the general index of the Moroccan stock market. This indicator reflects the overall evolution of the Casablanca Stock Exchange and makes it possible to examine the relationship between general market movements and the stock returns of listed family firms.

2.1.4. Stock Liquidity

Stock liquidity refers to the ability to buy or sell a security quickly without causing a substantial change in its market price. It is generally associated with trading volume, transaction frequency, and the ease with which investors can enter or exit positions.

Amihud and Mendelson (1986) demonstrate that liquidity plays an important role in asset pricing, particularly through the compensation investors may require for holding less liquid securities. Pastor and Stambaugh (2003) further highlight the importance of liquidity risk in explaining expected stock returns.

In the present research, stock liquidity is examined through trading activity relative to market capitalization. This measure makes it possible to assess the relationship between the intensity of trading and the realized returns of listed family firms.

2.1.5. Stock Price Volatility

Stock price volatility refers to the extent to which the price or return of a security fluctuates over a given period. It reflects the degree of uncertainty and market risk associated with holding a particular security. High volatility indicates greater variations in returns and may reflect changing investor expectations, new information, or unsTable market conditions.
Volatility is an important component of financial risk because substantial price fluctuations can influence investment decisions and the valuation of securities. In this study, volatility is measured through the standard deviation of stock returns. This indicator captures the dispersion of returns around their average and provides a quantitative measure of fluctuations in the shares of listed family firms.

2.2. Theoretical Foundations

2.2.1. Signaling Theory

Signaling theory, initially developed by Spence (1973), explains how market participants use observable information to assess the quality and prospects of economic agents. In financial markets, information disclosed by companies and movements in market indicators may influence investor perceptions and investment decisions.
In the context of listed family firms, favorable market conditions can reinforce positive expectations and encourage investment in their securities. Market movements therefore provide information that investors may incorporate into their valuation decisions. This theoretical perspective supports the examination of the relationship between general market conditions and stock returns.

2.2.2. Market Efficiency Theory

The efficient market hypothesis developed by Fama (1970) suggests that security prices incorporate available information. Under this perspective, changes in economic conditions, company-related information, and market expectations may be reflected in share prices.
The efficiency of price formation is also related to trading activity and the availability of market information. Securities characterized by higher trading activity may facilitate the incorporation of new information into prices. However, the relationship between liquidity and realized returns is not necessarily identical to the relationship between liquidity and expected returns.
This distinction is particularly relevant to the present research, which examines observed stock returns rather than the theoretical risk premium required by investors.

2.2.3. Liquidity Theory and Asset Pricing

The relationship between liquidity and stock returns has been extensively investigated in financial economics. Amihud and Mendelson (1986) argue that investors require compensation for holding less liquid assets because transaction costs reduce the effective returns they receive. Pastor and Stambaugh (2003) further show that exposure to systematic liquidity risk is relevant to expected stock returns.
Nevertheless, liquidity can also influence observed market activity by facilitating transactions and improving the ability of investors to trade securities. Thus, the relationship between liquidity and realized stock returns may depend on market characteristics, investor behavior, and the period under consideration.
For the Moroccan stock market, examining this relationship is particularly relevant because differences in trading activity may affect the way information is incorporated into share prices.

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2.2.4. Agency Theory and Family Governance

Agency theory, developed by Jensen and Meckling (1976), examines conflicts of interest that may arise between managers and shareholders. In family firms, ownership concentration and family involvement in management may reduce certain conflicts between owners and managers. However, conflicts may also arise between controlling family shareholders and minority investors.

Anderson and Reeb (2003) and Villalonga and Amit (2006) highlight the importance of family ownership and control in understanding corporate governance and firm valuation. These characteristics provide a relevant institutional context for analyzing listed family firms because external investors may take ownership concentration and governance arrangements into account when making investment decisions.

In this research, agency theory helps explain the specific context in which the selected companies operate. However, family governance characteristics are not directly included as explanatory variables in the econometric specification. The empirical analysis therefore focuses on market conditions, liquidity, and volatility rather than estimating the independent effect of family governance.

2.3. Empirical Literature Review

2.3.1. Stock Market Conditions and Stock Returns

The relationship between market conditions and stock returns has been widely examined in the financial literature. General market movements influence investor expectations, investment decisions, and the valuation of securities. In favorable market environments, increased investor confidence may support demand for shares and contribute to positive returns. Conversely, unfavorable market conditions may weaken market sentiment and negatively affect stock valuations.

Research on initial public offerings has also highlighted the importance of distinguishing between short-term and long-term stock market performance. Ritter (1991) documents the long-run underperformance of initial public offerings, while Loughran and Ritter (1995) examine the long-term performance of newly issued securities. These studies demonstrate that favorable initial market reactions do not necessarily translate into sustained long-term returns.

Evidence from Morocco also illustrates the importance of examining IPO performance within the specific characteristics of the national financial market. Ziky and El Hamidi (2022) investigate short-term underpricing and long-term underperformance among Moroccan IPOs using an event-study approach. Belqasmi (2021) similarly examines the medium- and long-term stock market performance of Moroccan companies financed by private equity before their listing.

More recently, Zougarh and Gharnit (2024) investigate the post-IPO evolution of several economic, commercial, and financial indicators for Moroccan listed companies. Salhi and Ouakil (2025) examine the macroeconomic determinants of IPO activity on the Casablanca Stock Exchange, highlighting the importance of market-related and macroeconomic factors in companies' decisions to go public.

Although these studies provide useful evidence on the Moroccan market, their research questions differ from the present investigation. The current study focuses specifically on the relationship between general market conditions and the realized stock returns of listed family firms.

2.3.2. Stock Liquidity and Returns

Liquidity is a fundamental characteristic of financial markets because it determines the ease with which investors can trade securities. The literature identifies several mechanisms through

which liquidity may influence stock returns.
Amihud and Mendelson (1986) establish a relationship between transaction costs and expected returns, arguing that investors require compensation for holding less liquid securities. Pastor and Stambaugh (2003) further demonstrate that liquidity risk constitutes an important factor in asset pricing.
However, the relationship between liquidity and realized stock returns may differ from the theoretical relationship between illiquidity and expected returns. Higher trading activity can facilitate transactions, improve price formation, and support the incorporation of information into market prices. These mechanisms may be particularly relevant in emerging financial markets, where differences in trading activity can influence the behavior of individual securities.
Consequently, examining stock liquidity in relation to realized returns provides an opportunity to assess whether greater trading activity is associated with stronger stock market performance among listed Moroccan family firms.

2.3.3. Stock Price Volatility and Returns

Stock price volatility represents another important dimension of financial market behavior. It reflects uncertainty surrounding future price movements and may influence investors' willingness to hold particular securities.
Higher volatility is generally associated with greater uncertainty and exposure to market risk. It can also result from changes in investor expectations, the arrival of new information, or variations in market sentiment. In such circumstances, substantial price fluctuations may weaken investor confidence and generate less sTable stock market performance.
The relationship between volatility and returns is nevertheless complex. Higher risk may be associated with higher expected returns in asset-pricing models, whereas increased volatility may coincide with negative realized returns during periods of adverse market conditions. Therefore, the expected relationship depends on the distinction between risk compensation and the observed evolution of share prices.
In the context of listed family firms, examining volatility is particularly relevant because investors may consider both the financial characteristics of companies and the uncertainty associated with their securities. The present study investigates whether greater stock price fluctuations are negatively associated with realized returns on the Casablanca Stock Exchange.

2.4. Development of Research Hypotheses

Drawing on the theoretical foundations and empirical evidence discussed above, three hypotheses are developed to examine the relationships between market conditions, stock liquidity, stock price volatility, and the stock returns of Moroccan listed family firms.

2.4.1. Market Conditions and Stock Returns

Market conditions influence the general environment in which securities are traded. Favorable market movements may strengthen investor confidence, increase demand for shares, and contribute to higher stock returns. Signaling theory and market efficiency theory suggest that market information and changes in investor expectations may be reflected in security prices.
Accordingly, the following hypothesis is proposed:
H1: Favorable stock market conditions are positively associated with the stock returns of listed family firms.

2.4.2. Stock Liquidity and Returns

Liquidity facilitates transactions and allows investors to buy and sell securities more easily. Higher trading activity may improve market participation and contribute to more efficient price formation. Although the asset-pricing literature identifies an illiquidity premium in expected

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returns, the relationship between liquidity and realized returns may differ depending on market conditions and trading mechanisms.
In this study, the focus is on the relationship between observed trading activity and realized stock returns. Therefore, the following hypothesis is proposed:
H2: Stock liquidity is positively associated with the stock returns of listed family firms.

2.4.3. Stock Price Volatility and Returns

Stock price volatility reflects the degree of uncertainty associated with a security. Greater fluctuations may indicate unsTable market conditions and increase the uncertainty perceived by investors. In periods of adverse market developments, higher volatility may be accompanied by declining share prices and weaker realized returns.
Based on this reasoning, the following hypothesis is proposed:
H3: Stock price volatility is negatively associated with the stock returns of listed family firms.

2.4.4. Conceptual Research Framework

The conceptual framework summarizes the relationships examined in this study. It identifies stock returns as the dependent variable and three market-related indicators as explanatory variables.
Independent variables:

- Market conditions (H1: positive relationship).
- Stock liquidity (H2: positive relationship).
- Stock price volatility (H3: negative relationship).

Dependent variable:

- Stock returns of Moroccan listed family firms.

The family-firm dimension defines the population under investigation and provides the organizational context of the research. It is not treated as an independent explanatory variable because the sample exclusively consists of family firms.
The following section presents the data, variable measurements, and econometric methods used to test the proposed hypotheses.

3. Methodological Framework

This study examines the determinants of stock market returns among family-owned companies listed on the Casablanca Stock Exchange. It adopts a quantitative research approach based on secondary data collected from institutional and corporate sources. The data were obtained from the Casablanca Stock Exchange, the Moroccan Capital Market Authority (Autorité Marocaine du Marché des Capitaux – AMMC), and the annual reports and financial publications of the companies included in the sample.
The empirical analysis covers a sample of 20 family-owned companies that were listed on the Casablanca Stock Exchange between 1999 and 2011. The classification of a company as family-owned is based on two criteria: family control over the company's share capital and the involvement of family members in its management. These criteria are used jointly to identify companies in which the family exercises a significant influence over ownership and managerial decisions.
The selection of the sample is also conditioned by the availability of the financial and stock market information required for the analysis. Although the initial observation framework considers a five-year period following each company's initial public offering (IPO), the final dataset contains 139 firm-year observations. Consequently, the resulting panel is unbalanced, as the number of available annual observations differs across companies. This difference reflects the availability of the required information over the observation period. The exact

observation period for each company and the reasons for missing observations are reported in the sample description.

The dependent variable is stock market return (SR), which measures the annual variation in the price of a company's shares. Three explanatory variables are considered: stock market conditions (Market), share liquidity (SL), and share price volatility (SV). These variables are intended to capture the influence of general market developments and stock-specific characteristics on the returns of listed family-owned companies.

Stock market conditions are represented by the general index of the Moroccan stock market. Share liquidity is measured using the ratio of trading volume to market capitalization. Share price volatility captures the dispersion of stock returns over the relevant observation period. The definitions, measurement methods, and data sources of these variables are summarized in Table 1.

Table 1: Definitions, Measurement, and Sources of the Explanatory Variables.

Indicators	Assessment	Codes	Type
Return	(Current share price − Reference share price) / Reference share price	SR	Dependent Variable
Stock Market Conditions	General Index of the Moroccan Stock Market	Market	Independent Variable
Share Tradability	Daily Trading Volume / Total Market Capitalization of Companies	SL	
Share Liquidity	Standard Deviation of Stock Returns	SV	

Source: Authors

3.1. Variable Measurement and Econometric Model

The dependent variable in this study is stock market return (SR). It is calculated as the relative change in the share price between two consecutive observation periods:

$$SR\ it = (P\ it - P\ i,\ t-1) / P\ i,t-1$$

where (P it) represents the share price of company (i) at the end of period (t), and (P i, t-1) represents the share price at the end of the preceding period. The return is expressed as a decimal or multiplied by 100 when reported as a percentage. This measure represents an ordinary share-price return and should not be interpreted as an abnormal return adjusted for market movements or risk.

The explanatory variables are defined as follows:

Stock market conditions (Market): measured using the general index of the Moroccan stock market. This variable captures the evolution of overall stock market conditions during the observation period.

Share liquidity (SL): measured as the ratio of trading volume to the company's market capitalization. This indicator reflects the relative trading activity of the company's shares.

Share price volatility (SV): measured by the standard deviation of stock returns over the specified calculation window. It captures the degree of fluctuation in share returns and provides an indication of stock market uncertainty.

The empirical relationship between stock market returns and their explanatory factors is examined through the following panel regression model:

$$SR\ it = (P\ it - P\ i,\ t-1) / Pi,\ t-1$$

where:

- (SR it) denotes the stock market return of company (i) in year (t);
- (Market t) represents stock market conditions in year (t);
- (SL it) denotes the liquidity of company (i)'s shares;
- (SV it) represents the volatility of company (i)'s share returns;
- (alpha) is the constant term;
- (beta 1, beta 2, beta 3) are the coefficients associated with the explanatory variables;

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- (mu i) captures unobserved company-specific effects;
- (varepsilon it) is the idiosyncratic error term.

The expected signs of the coefficients are specified as follows. Stock market conditions are expected to have a positive relationship with individual stock returns ((\beta_1>0)), since favorable market developments may support the performance of listed shares. Share liquidity is also expected to be positively associated with returns ((\beta_2>0)), as greater trading activity may improve the attractiveness and tradability of shares. The expected relationship between volatility and stock returns is negative ((\beta_3<0)), reflecting the possibility that greater uncertainty may be associated with lower stock market performance.

These expected relationships constitute the theoretical assumptions examined empirically. They do not imply that the estimated coefficients will necessarily have the predicted signs.

3.2. Econometric Estimation Strategy and Diagnostic Procedures

The econometric strategy is determined by the structure of the available dataset, which consists of 20 companies and 139 firm-year observations. Given the relatively short time dimension of the panel, the empirical analysis gives priority to panel regression techniques that are compatible with a limited number of annual observations per company.

The analysis proceeds in several stages.

First, descriptive statistics are calculated for all variables. Means, standard deviations, minimum values, and maximum values are examined to describe the distribution of the data and identify potential inconsistencies in the measurement of the variables.

Second, the panel structure and the variation of the explanatory variables are examined. Particular attention is paid to the stock market index, since it is common to all companies observed during a given year. Its common time variation must be taken into account when selecting the appropriate econometric specification.

Third, the relationship between stock market returns and the explanatory variables is estimated using panel regression techniques. The choice between pooled ordinary least squares, fixed effects, and random effects is based on the characteristics of the dataset and the results of the relevant specification tests. In particular, the Hausman specification test may be used to assess the suitability of fixed-effects or random-effects estimation when both estimators are applicable.

Fourth, diagnostic procedures are conducted to assess the reliability of the estimated model. These procedures include tests for serial correlation and heteroskedasticity, as well as an assessment of cross-sectional dependence where appropriate. Multicollinearity among the explanatory variables is also examined. When diagnostic tests indicate violations of the classical assumptions, appropriate robust standard errors are considered to improve statistical inference.

The short time dimension of the dataset requires caution when interpreting the results of dynamic panel procedures and panel cointegration tests. Accordingly, unit root and cointegration techniques are not treated as automatic preliminary requirements for the static panel specification. Their use would require additional justification based on the properties and effective time dimension of the available series.

Finally, the results are interpreted in terms of the direction, magnitude, and statistical significance of the estimated relationships. Given the observational nature of the data and the limited number of companies included in the sample, the findings are interpreted as empirical associations rather than definitive causal effects.

4. Empirical Results Analysis and Interpretation

4.1. Examination of the Statistical Characteristics of the Sample

This section presents the descriptive statistics of the four variables included in the study, namely stock returns, stock market conditions, share price price fluctuations, and share Trading Activity, Drawing on 139 data points. It provides the main descriptive measures, including the mean, dispersion, and distribution shape indicators, thereby offering a clearer understanding of the general characteristics of the data used in the empirical analysis.

Table 2. Summary of Descriptive Statistics

Statistical Measures	Stock Returns	Stock Market Conditions	Share Price Volatility	Share Liquidity
Mean	7.7367	5.7360	12.7317	176.8921
Median	7.7000	5.7000	12.8000	170.0000
Maximum	9.6000	7.0000	14.2000	280.0000
Minimum	6.0000	4.8000	11.6000	140.0000
Standard Deviation	0.7876	0.5487	0.5546	26.9305
Skewness	0.0609	0.8173	0.1481	1.8432
Kurtosis	2.4829	3.3889	2.3523	6.6918
Jarque-Bera	7.40	10.12	8.50	9.33
Probability	0.01	0.01	0.03	0.02
Sum	1,075.40	797.30	1,769.70	24,588.00
Sum of Squared Deviations	85.60	40.82	42.41	10,081.40
Observations	139	139	139	139

Source: Authors

The descriptive statistics provide an overview of the four variables included in the empirical analysis. The average stock return is 7.74, indicating a positive average return for the shares of the family-owned companies included in the sample. The average value of stock market conditions is 5.74, with a standard deviation of 0.55, indicating limited dispersion around the mean.

Regarding share price volatility, its average value is 12.73, with a standard deviation of 0.55, suggesting relatively limited dispersion across observations. Share liquidity records an average value of 176.89 and a standard deviation of 26.93, indicating greater dispersion compared with the other variables. Its positive skewness (1.84) suggests a right-skewed distribution, with some observations exhibiting considerably higher liquidity values than the sample average.

The normality of the variables is assessed using the Jarque-Bera test. However, the reported Jarque-Bera statistics and their associated probabilities should be verified for consistency with the skewness and kurtosis values before drawing conclusions regarding the distribution of the variables.

4.2. Panel Unit Root Tests

This section presents the results of the panel data stationarity tests (ADF and Phillips–Perron) applied to the study variables, both in levels and in first differences. These tests make it possible to establish the stationarity properties of the variables and assess their statistical stationarity.

The panel unit root tests were conducted using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) procedures based on Fisher's chi-square statistics. The results reported in Table 3 indicate that stock returns, share liquidity, and stock market conditions are non-stationary at level, as their associated p-values exceed the 5% significance threshold in both tests. However, these variables become stationary after first differencing, with statistically significant p-values.

For share price volatility, the results are less conclusive. The ADF test rejects the unit root hypothesis at level ($p = 0.0003$), suggesting that the variable is stationary in its original form.

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In contrast, the PP test does not reject the unit root hypothesis at level (p = 0.1287), although both tests indicate stationarity after first differencing. This difference between the ADF and PP results suggests that the integration order of share price volatility requires further examination. Overall, the results indicate that stock returns, share liquidity, and stock market conditions are integrated of order one, I(1), while share price volatility exhibits mixed evidence regarding its integration order. Importantly, none of the variables appears to be integrated of order two, I(2). These findings provide a basis for selecting an econometric methodology capable of accommodating a combination of I(0) and I(1) variables and examining both short-run dynamics and long-run relationships.

Table 3. Panel Unit Root Test Results (Fisher-ADF and Fisher-PP Tests)

Varibales	Tests	Level (Fisher χ^2)	p-value	First Difference (Fisher χ^2)	p-value
Stock Returns	ADF	10.932	0.3121	64.329	0.0000***
	PP	10.678	0.2113	35.789	0.0000***
Share Price Volatility	ADF	5.998	0.0003***	12.665	0.0341**
	PP	7.564	0.1287	12.345	0.0214**
Share Liquidity	ADF	3.875	0.5581	21.225	0.0041***
	PP	22.897	0.1204	39.876	0.0000***
Stock Market Conditions	ADF	7.567	0.2341	29.876	0.0004***
	PP	6.432	0.5323	34.123	0.0000***

Source: Authors

4.3. Panel Cointegration Tests

This section presents the results of Pedroni's panel cointegration test, which examines whether a long-run equilibrium relationship exists among the variables under investigation. The test relies on several panel and group statistics to assess the null hypothesis of no cointegration.

Table 4. Pedroni Panel Cointegration Test Results.

Test Statistic	Panel statistic	p-value	Weighted Value	p-value
Panel v	-1.276	0.1014	-1.098	0.1221
Panel rho	-2.765***	0.0052	-2.983***	0.0023
Panel PP	-3.987***	0.0001	-3.655***	0.0003
Panel ADF	-2.843***	0.0045	-2.567***	0.0067
	Panel statistic	P-value		
Group rho	-1.134	0.2175		
Group PP	-3.456***	0.0006		
Group ADF	-2.489***	0.0078		

Source : Authors

Table 5. Kao Panel Cointegration Test Results.

Test	Test statistic	p-value
Augmented Dickey-Fuller (ADF)	-2.035**	0.0213

Source : Authors

The Pedroni panel cointegration test was conducted to examine the existence of long-run relationships among the variables. The null hypothesis (H_0) states that there is no cointegration among the variables, whereas the alternative hypothesis (H_1) indicates the presence of a cointegrating relationship.

As reported in Table 4, the results provide mixed evidence of cointegration. Among the panel statistics, the Panel v-statistic is not statistically significant (p = 0.1014), whereas the Panel rho-statistic (p = 0.0052), Panel PP-statistic (p = 0.0001), and Panel ADF-statistic (p = 0.0045) are significant at the 1% level. The corresponding weighted statistics also reject the null hypothesis at the 1% significance level. Regarding the group statistics, the Group rho-statistic is not

statistically significant (p = 0.2175), while the Group PP-statistic (p = 0.0006) and Group ADF-statistic (p = 0.0078) are significant at the 1% level.

To further examine the long-run relationship, the Kao residual-based panel cointegration test was also applied. As reported in Table 5, the Augmented Dickey-Fuller statistic is −2.035, with a p-value of 0.0213. This result leads to the rejection of the null hypothesis of no cointegration at the 5% significance level, providing additional evidence of a long-run relationship among the variables.

Taken together, the Pedroni and Kao test results support the existence of a long-run cointegrating relationship among the variables, although the evidence from the Pedroni test is not unanimous. These findings provide a basis for examining long-run relationships in the subsequent econometric estimations.

4.4. Econometric Results in the Long and Short Term.

The empirical analysis examines the relationships between stock market conditions, share liquidity, share price volatility, and the stock returns of Moroccan family-owned firms listed on the Casablanca Stock Exchange. Table 6 presents the estimated long-run and short-run coefficients obtained using the OLS and CS-ARDL specifications. These estimates provide insights into the associations between stock market indicators and the stock returns of listed family-owned firms.

Table 6. Long-Run and Short-Run Estimates of the Determinants of Stock Return.

Variable	OLS	CS-ARDL
Long-run estimates		
Stock Market Conditions	0.045***	0.039***
Share Liquidity	7.110***	4.212***
Share Price Volatility	−0.027***	−0.032***
Short-run estimates		
Error Correction Term (-1)	0.600***	0.920***
Δ Stock Market Conditions	5.450**	6.810***
Δ Share Liquidity	0.081**	0.075**
Δ Share Price Volatility	−0.045**	−0.049**

Source : Authors

4.4.1. Long-Run Econometric Results

The long-run estimates reveal a positive and statistically significant relationship between stock market conditions and stock returns. The estimated coefficients are 0.045 under OLS and 0.039 under CS-ARDL. These findings suggest that favourable developments in the overall stock market environment are associated with higher stock returns among listed family-owned firms. This result is consistent with the theoretical contributions of Fama and French (1993), which emphasize the importance of systematic market factors in explaining stock returns.

Share liquidity also exhibits a positive and statistically significant relationship with stock returns, with estimated coefficients of 7.110 under OLS and 4.212 under CS-ARDL. This finding indicates that higher share liquidity is associated with higher stock returns in the sample. However, this positive relationship should be interpreted with caution. The asset pricing literature, particularly Amihud and Mendelson (1986) and Pastor and Stambaugh (2003), emphasizes that illiquidity may be associated with higher expected returns as compensation for liquidity costs or liquidity risk. Therefore, the positive association observed in this study does not directly confirm the traditional liquidity premium argument. It may instead reflect contemporaneous interactions between trading activity and stock returns, as well as potential reverse causality. Accordingly, the results identify a positive empirical association without establishing that greater liquidity necessarily causes higher returns.

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Conversely, share price volatility exhibits a negative and statistically significant relationship with stock returns. The estimated coefficients are −0.027 under OLS and −0.032 under CS-ARDL. This finding suggests that higher share price volatility is associated with lower stock returns in the sample. Although traditional risk-return models generally associate higher expected risk with higher expected returns, the relationship between volatility and realized returns may be more complex. Black (1976) discusses the leverage effect, whereby negative stock returns may be associated with increases in volatility. Furthermore, French et al. (1987) distinguish between expected and unexpected changes in volatility, highlighting the importance of this distinction when examining stock returns. In the present study, the negative coefficient should therefore be interpreted as an empirical association rather than evidence that higher risk systematically reduces expected returns. Its interpretation also depends on how share price volatility is measured and whether its calculation overlaps with the period used to compute stock returns.

Overall, the long-run estimates indicate that stock market conditions and share liquidity are positively associated with stock returns, whereas share price volatility exhibits a negative association. These findings describe the long-run relationships observed among the sampled listed family-owned firms.

4.4.2. Short-Run Econometric Results

The short-run estimates also reveal statistically significant relationships between the selected stock market indicators and stock returns.

Changes in stock market conditions have a positive and statistically significant relationship with stock returns, with estimated coefficients of 5.450 under OLS and 6.810 under CS-ARDL. This finding suggests that short-term developments in the overall stock market environment are associated with changes in the stock returns of family-owned firms.

Similarly, changes in share liquidity have a positive and statistically significant relationship with stock returns. The estimated coefficients are 0.081 under OLS and 0.075 under CS-ARDL. These results suggest that changes in trading activity are positively associated with short-term stock returns.

In contrast, changes in share price volatility have a negative and statistically significant relationship with stock returns, with coefficients of −0.045 under OLS and −0.049 under CS-ARDL. This finding indicates that increases in share price fluctuations are associated with lower short-term stock returns.

Regarding the error correction term (ECT), the reported coefficients are positive, amounting to 0.600 under OLS and 0.920 under CS-ARDL. These positive estimates do not support the conventional interpretation of a convergent adjustment mechanism. In a conventional error correction model, a negative and statistically significant Error Correction Term (ECT) coefficient is generally expected to indicate convergence towards long-run equilibrium. Consequently, the reported positive coefficients do not allow us to conclude that 60% or 92% of the previous period's disequilibrium is corrected. The specification and calculation of the error correction term therefore require further examination before any conclusion can be drawn regarding the adjustment process.

4.4.3. Overall Discussion

Taken together, the estimates provide empirical evidence of significant relationships between stock market conditions, share liquidity, share price volatility, and the stock returns of Moroccan family-owned firms listed on the Casablanca Stock Exchange. The positive relationships observed for stock market conditions and share liquidity suggest that the overall market environment and trading activity are relevant factors associated with stock returns.

Conversely, the negative relationship between share price volatility and stock returns highlights the association between price fluctuations and equity performance.

These findings underline the importance of improving market transparency, strengthening investor relations, and enhancing the trading conditions of listed shares. They also highlight the potential benefits of transparent financial communication and effective corporate governance in maintaining investor confidence and supporting the attractiveness of family-owned firms on the stock market.

Importantly, these results concern the relationships between stock market indicators and stock returns during the observation period. They should not be interpreted as evidence of the causal effect of initial public offerings on the stock market performance of family-owned firms.

4.5. Estimation of the Generalized Linear Model (GLM)

The GLM estimation results examine the relationships between stock market conditions, share liquidity, share price volatility, and equity returns among the Moroccan family-owned firms included in the sample. Table 7 reports the estimated coefficients, standard errors, z-statistics, and p-values, providing an assessment of the direction and statistical significance of these relationships.

Table 7. Generalized Linear Model (GLM) Estimation Results.

Dependent Variable	Coefficient Estimate	Standard Error	z-statistic	p-value
Stock Market Conditions	1.440712	0.111806	12.88583	0.0000
Share Liquidity	0.004343	0.001657	2.620752	0.0098
Share Price Volatility	−0.474760	0.112962	−4.202837	0.0000
Constant (C)	4.748969	0.988812	4.802701	0.0000

Source : Authors

4.5.1. Interpretation of the GLM Estimation Results

The GLM estimation results presented in Table 7 reveal statistically significant relationships between the explanatory variables and stock returns. The estimated coefficients indicate that stock market conditions and share liquidity are positively associated with stock returns, whereas share price volatility exhibits a negative association.

Stock market conditions display a positive and statistically significant coefficient of 1.440712 ($z = 12.88583$; $p < 0.001$). This result suggests that favourable stock market conditions are associated with higher stock returns among the family-owned firms included in the sample. It highlights the importance of general market developments in explaining variations in stock returns, in line with the importance attributed to market-related factors in the asset pricing literature, particularly by Fama and French (1993).

Share liquidity also has a positive and statistically significant coefficient of 0.004343 ($z = 2.620752$; $p = 0.0098$). This result indicates a positive association between share liquidity and stock returns. Nevertheless, this finding should be interpreted cautiously in light of the traditional liquidity premium literature. Amihud and Mendelson (1986) and Pastor and Stambaugh (2003) suggest that illiquidity and liquidity risk may be associated with higher expected returns. The positive relationship observed in this study therefore does not directly support the conventional liquidity premium explanation. It may reflect contemporaneous interactions between trading volume and returns or possible reverse causality. The GLM results consequently establish a statistically significant association but do not demonstrate a causal effect of liquidity on stock returns.

Conversely, share price volatility exhibits a negative and statistically significant coefficient of −0.474760 ($z = −4.202837$; $p < 0.001$). This result indicates that higher volatility is associated with lower stock returns in the sample. However, this relationship should not be interpreted as contradicting all risk-return theories. The relationship between volatility and realized returns may differ from the relationship between expected risk and expected returns. Black (1976)

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discusses the leverage effect, while French et al. (1987) distinguish between expected and unexpected volatility. Moreover, if volatility is calculated using returns from the same observation period, a degree of mechanical association between the two variables may arise. These considerations suggest that the negative coefficient should be interpreted cautiously and do not establish that increased volatility necessarily causes lower expected returns.

Finally, the constant term is positive and statistically significant (4.748969; $p < 0.001$). It represents the estimated value of stock returns when all explanatory variables are equal to zero, although its economic interpretation depends on the scale and specification of the model.

Overall, the GLM results identify significant associations between stock market conditions, share liquidity, share price volatility, and stock returns among the Moroccan family-owned firms included in the sample. The findings therefore describe the relationships observed within this specific group of listed family firms. However, they do not demonstrate that family ownership itself has a specific effect on stock returns, as the empirical model does not directly examine family ownership as an explanatory variable or compare family-owned firms with non-family-owned firms. Similarly, the results should not be interpreted as evidence of a causal effect of initial public offerings on stock market performance, since the analysis does not identify the causal consequences of the listing event.

4.6. Summary of Hypothesis Testing

The following Table summarizes the empirical findings in relation to the three research hypotheses. It presents the expected relationships, the results obtained from the GLM estimation, and the corresponding decisions regarding each hypothesis. The results indicate that H1 is supported, as stock market conditions are positively and significantly associated with stock returns. Similarly, H2 is supported, since share liquidity exhibits a positive and statistically significant relationship with stock returns. Finally, H3 is also supported, as share price volatility is negatively and significantly associated with stock returns. Overall, the GLM findings are consistent with the expected relationships formulated in the three research hypotheses.

4.7. Discussion, Implications and Limitations

The findings of this study contribute to the understanding of stock return determinants among Moroccan family-owned firms listed on the Casablanca Stock Exchange. Rather than identifying the causal effects of initial public offerings or the specific impact of family ownership, the analysis examines the relationships between selected stock market indicators and stock returns within a sample of listed family-owned firms. The contribution of the study therefore lies in examining these relationships in the context of an emerging financial market.

The findings can be discussed in relation to previous research on stock return determinants. Regarding stock market conditions, the results are consistent with the asset pricing literature, particularly Fama and French (1993), which emphasizes the importance of systematic market factors in explaining stock returns. Concerning share liquidity, the positive association identified in this study differs from the conventional liquidity premium perspective developed by Amihud and Mendelson (1986) and Pastor and Stambaugh (2003), according to which illiquidity or exposure to liquidity risk may be associated with higher expected returns. This difference highlights the importance of distinguishing between expected and realized returns and considering potential interactions between trading activity and stock returns. Similarly, the negative association involving share price volatility should be interpreted in light of the distinction between expected risk and realized returns discussed in the literature, notably by Black (1976) and French et al. (1987). These comparisons provide a theoretical context for interpreting the findings, although the cited studies do not all examine the same market conditions or sample characteristics.

Several limitations should be acknowledged. First, the sample includes only family-owned listed firms and does not contain a comparison group of non-family-owned companies. Consequently, the analysis cannot establish whether family ownership produces a specific effect on stock returns. Second, the empirical framework does not isolate the initial public offering event or examine the evolution of returns according to the time elapsed since listing. Third, potential endogeneity and reverse causality between stock returns, share liquidity, and share price volatility may affect the estimated relationships. The econometric specifications used in this study do not necessarily eliminate these issues.

Furthermore, the analysis does not include alternative measures of liquidity and volatility or additional robustness checks based on sub-periods and the treatment of extreme observations. These limitations should be considered when assessing the stability and generalizability of the findings. Future research could extend the analysis by incorporating non-family-owned firms, examining pre- and post-IPO performance, using alternative measures of liquidity and volatility, and applying instrumental-variable or GMM approaches to investigate potential endogeneity.

4.8. Diagnostic Tests

4.8.1. Wooldridge Test (Serial Correlation)

The analysis of panel data may be affected by serial correlation, which occurs when the error terms of a given firm are correlated across different periods. This issue can affect the reliability of statistical inference and the estimated standard errors. To examine the presence of first-order serial correlation, the Wooldridge test for panel data is employed. The null hypothesis assumes the absence of first-order serial correlation.

Table 8. Wooldridge Test for Serial Correlation in Panel Data

Indicator	Result
Test	Wooldridge test
F-statistic	1.994
Degrees of freedom	(1, 10)
p-value	0.1891
Decision at 5%	Do not reject the null hypothesis

Source: Authors

The Wooldridge test yields an F-statistic of 1.994 and a p-value of 0.1891. Since the p-value exceeds the 5% significance level, the null hypothesis of no first-order serial correlation cannot be rejected. Thus, the test does not provide sufficient statistical evidence of first-order serial correlation in the panel used for this diagnostic. The degrees of freedom, F(1,10), indicate that the test was conducted on a sample of 11 groups. This diagnostic sample must therefore be distinguished from the initial sample of 20 firms, and the reasons for the difference in sample size must be documented.

4.8.2. Testing for Heteroscedasticity

This stage involves examining the stability of the dispersion of residual terms across the different statistical units included in the sample. To this end, we conduct diagnostic tests to determine whether the random disturbances exhibit a constant or varying variance. The null hypothesis underlying this assessment assumes that the error terms have an identical variance, indicating a situation of homoscedasticity. The statistical decision is based on the p-value obtained from each procedure.

In practical terms, this assessment relies on two Stata commands: xttest3, used after estimating specifications incorporating fixed individual effects, and estat hettest, applied to the specification based on random components. The outcomes of these various diagnostic tests indicate summarised in the following Table.

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Table 9. Summary of the tests relating to error variance in the study.

Econometric specification	Verification procedure	Chi-square (degrees of freedom)	Prob > chi2	Result
Fixed individual-effects model	Wald procedure for detecting group-specific variance differences.	3.10×10^{0}	7.82×10^{-2}	The assumption of constant error variance remains valid, as the statistical findings do not reveal any significant variation in residual dispersion.

Source: Authors

The application of the adjusted Wald procedure yields a chi-square statistic of 3.10, associated with a p-value of 0.0782. Since this value exceeds the conventional 5% significance level, there is insufficient statistical evidence to reject the null hypothesis of constant residual variance. Consequently, no substantial variation in the variability of the residual's terms across the units under study is detected, providing support for the reliability of the estimates obtained.

4.9. Recommendations and Policy Implications

The empirical findings provide several implications for listed family-owned firms and market participants. Since the analysis identifies associations rather than causal effects, the following recommendations should be interpreted as practical considerations consistent with the observed relationships.

First, listed family-owned firms should pay particular attention to the quality and timeliness of their financial disclosure. Providing reliable information about financial performance, strategic decisions, and corporate developments may help investors assess listed securities and make more informed investment decisions.

Second, companies may strengthen their communication with investors by improving the accessibility of financial information and maintaining regular communication with market participants. Such practices may contribute to a better understanding of company-specific developments and the factors associated with stock returns.

Third, market participants should consider both general stock market conditions and stock-specific indicators when assessing equity returns. The findings suggest that investment analysis should not rely exclusively on individual company characteristics but should also take broader market developments and share price fluctuations into account.

Finally, regulators and market institutions may continue to promote transparency, investor information, and the quality of market disclosure. These measures represent general policy considerations consistent with the importance of market information and trading conditions, although their effects are not directly evaluated in the present study.

These recommendations remain within the scope of the empirical analysis. More specific proposals concerning tax incentives, exchange-traded funds, derivatives markets, sectoral diversification, or corporate governance reforms would require additional evidence and dedicated research.

5. Conclusion

This study examined the determinants of stock returns among Moroccan family-owned firms listed on the Casablanca Stock Exchange. Rather than assessing the causal impact of initial public offerings (IPOs) on corporate performance, the research focused on the relationships between stock market conditions, share liquidity, share price volatility, and stock returns. The empirical analysis covered 20 family-owned firms initially listed between 1999 and 2011 and was based on 139 annual observations. OLS, CS-ARDL, and GLM estimations were employed to examine these relationships from complementary econometric perspectives.

The empirical findings reveal three main results. First, stock market conditions exhibit a positive and statistically significant relationship with stock returns. The long-run coefficients amount to 0.045 under OLS and 0.039 under CS-ARDL, while the GLM coefficient reaches 1.440712 ($p < 0.001$). These results highlight the association between developments in the overall market environment and the stock returns of the sampled family-owned firms.

Second, share liquidity displays a positive and statistically significant relationship with stock returns. The estimated long-run coefficients are 7.110 under OLS and 4.212 under CS-ARDL, while the GLM coefficient is 0.004343 ($p = 0.0098$). This positive association suggests that trading activity is an important dimension to consider when examining the stock market performance of listed family-owned firms. However, it should not be interpreted as evidence that greater liquidity necessarily causes higher returns, particularly in light of the liquidity premium literature and the possibility of reverse causality.

Third, share price volatility exhibits a negative and statistically significant relationship with stock returns. The long-run coefficients are −0.027 under OLS and −0.032 under CS-ARDL, while the GLM coefficient is −0.474760 ($p < 0.001$). This finding indicates that higher price volatility is associated with lower stock returns within the sample. Nevertheless, the distinction between expected risk and realized returns, as well as potential measurement overlap between volatility and returns, should be considered when interpreting this relationship.

The short-run estimates generally confirm the direction of these relationships. Changes in stock market conditions and share liquidity are positively associated with stock returns, with respective CS-ARDL coefficients of 6.810 and 0.075. Conversely, changes in share price volatility exhibit a negative association, with a coefficient of −0.049. These results provide complementary evidence regarding the short-run relationships between the selected market indicators and stock returns. However, the positive error correction coefficients require further examination and do not provide evidence of conventional convergence towards long-run equilibrium.

From a scientific perspective, this study contributes to the literature by examining the determinants of stock returns in the specific context of family-owned listed firms in an emerging financial market. It provides empirical evidence on the relationships between market conditions, share liquidity, and price volatility using complementary econometric approaches. It also contributes to the discussion of liquidity and volatility by highlighting the importance of distinguishing between empirical associations, expected returns, and realized stock returns.

From a managerial and practical perspective, the findings suggest that investors and managers of listed family-owned firms should pay particular attention to general market developments, trading activity, and share price fluctuations. Strengthening financial disclosure, improving investor communication, and developing appropriate risk monitoring practices may help firms maintain transparent relationships with market participants. For investors, considering liquidity conditions and price volatility alongside general market information may provide a more comprehensive basis for assessing listed shares. These implications should nevertheless be understood as recommendations informed by the observed relationships rather than as causal effects established by the empirical analysis.

Several limitations should be acknowledged. First, the sample is restricted to 20 Moroccan family-owned listed firms, which limits the generalizability of the findings to other companies and financial markets. Second, the analysis does not include a comparison group of non-family-owned firms and therefore cannot identify a specific effect of family ownership on stock returns. Third, although the sample covers 139 annual observations, the companies were initially listed between 1999 and 2011, meaning that the findings reflect a historical period of the Moroccan stock market and may not fully capture more recent market developments. Fourth, potential endogeneity and reverse causality between stock returns, share liquidity, and price volatility may affect the estimated relationships. The econometric specifications

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employed do not necessarily eliminate these issues. Finally, the measurement of liquidity and volatility, the possible overlap between volatility and realized returns, and the absence of additional robustness checks represent further limitations. The positive error correction coefficients also require additional methodological investigation before any conclusion can be drawn regarding the adjustment towards long-run equilibrium.

Future research could extend this analysis in several directions. An event-study approach based on abnormal returns could examine the stock market reaction surrounding IPO dates and provide a more direct assessment of listing-related effects. Comparative studies involving family-owned and non-family-owned firms could help investigate the role of ownership structure in stock market performance. Further research could also incorporate ownership concentration, family involvement in management, and corporate governance indicators to examine their relationships with stock returns. Extending the observation period to include more recent listings after 2011 and conducting comparisons with other emerging financial markets, particularly in the North African region, would improve the temporal and geographical scope of the evidence. Finally, alternative liquidity and volatility measures, together with instrumental-variable techniques or GMM estimations where appropriate, could help investigate potential endogeneity and assess the robustness of the relationships identified in this study.

Overall, this research provides empirical evidence on the relationships between stock market conditions, share liquidity, share price volatility, and stock returns among Moroccan family-owned listed firms. Its findings contribute to a better understanding of the stock market determinants associated with these companies, without claiming to establish the causal effects of IPOs or family ownership on stock market performance.

Références :

(1). Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. Journal of Financial Economics, 17(2), 223–249.
(2). Anderson, R. C., & Reeb, D. M. (2003). Founding-family ownership and firm performance: Evidence from the S&P 500. The Journal of Finance, 58(3), 1301–1328.
(3). Belqasmi, S. (2021). Descriptive analysis of medium and long-run performance of IPOs: Case of firms funded by private equity in Morocco. Revue Internationale du Chercheur, 2(2), 730–748.
(4). Black, F. (1976). Studies of stock price volatility changes. Proceedings of the 1976 Meetings of the American Statistical Association, Business and Economic Statistics Section, 177–181.
(5). Bollerslev, T. (1986). Generalized autoregressive conditional heteroscedasticity. Journal of Econometrics, 31(3), 307–327.
(6). Campbell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). The econometrics of financial markets. Princeton University Press.
(7). Engle, R. F. (1982). Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation. Econometrica, 50(4), 987–1007.
(8). Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. The Journal of Finance, 25(2), 383–417.
(9). Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. Journal of Financial Economics, 33(1), 3–56.
(10). French, K. R., Schwert, G. W., & Stambaugh, R. F. (1987). Expected stock returns and volatility. Journal of Financial Economics, 19(1), 3–29.
(11). Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305–360.

(12). Kao, C. (1999). Spurious regression and residual-based tests for cointegration in panel data. Journal of Econometrics, 90(1), 1–44.
(13). Loughran, T., & Ritter, J. R. (1995). The new issues puzzle. The Journal of Finance, 50(1), 23–51.
(14). Pastor, L., & Stambaugh, R. F. (2003). Liquidity risk and expected stock returns. Journal of Political Economy, 111(3), 642–685.
(15). Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors. Oxford Bulletin of Economics and Statistics, 61(S1), 653–670.
(16). Pedroni, P. (2004). Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. Econometric Theory, 20(3), 597–625.
(17). Pesaran, M. H. (2021). General diagnostic tests for cross-sectional dependence in panels. Empirical Economics, 60(1), 13–50.
(18). Ritter, J. R. (1991). The long-run performance of initial public offerings. The Journal of Finance, 46(1), 3–27.
(19). Salhi, Z., & Ouakil, H. (2025). External factors of going public in the Casablanca Stock Exchange. Afro-Asian Journal of Finance and Accounting, 15(6), 689–706.
(20). Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. The Journal of Finance, 52(2), 737–783.
(21). Villalonga, B., & Amit, R. (2006). How do family ownership, control and management affect firm value? Journal of Financial Economics, 80(2), 385–417.
(22). Wooldridge, J. M. (2010). Econometric analysis of cross section and panel data (2nd ed.). MIT Press.
(23). Ziky, M., & El Hamidi, N. (2022). The performance of Moroccan IPOs: An analysis by event studies. International Journal of Accounting, Finance, Auditing, Management and Economics, 3(5-2), 731–754.
(24). Zougarh, M., & Gharnit, S. (2024). The impact of stock introduction on companies' performance: Case of Casablanca Stock Exchange. Archives of Business Research, 12(10), 185–197.