



Reversal of Stock Market Trends: Contrarian Strategies in the Moroccan Context

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Abstract: This study aims to test the profitability of the contrarian strategy in the Moroccan stock market. This counter-trend strategy involves buying losing stocks and selling winning ones. The underlying intuition is to take advantage of the trend reversal that will occur to correct the discrepancies between stock prices and their fundamental values, caused by an overreaction of the market. This leads us to compare the profitability of this strategy with that of the Momentum strategy. The trend reversal was analyzed using 76 Moroccan stocks over a one-year period, divided into a formation period and a holding period. Our study found that one-third of the stocks listed on the Casablanca Stock Exchange exhibit a price reversal behavior.

Keywords: Behavioral Finance; Investment Strategy; Stock Market; Market Overreaction; Price Reversal.

Résumé: Ce travail cherche à tester la profitabilité de la stratégie *Contrarian* sur le marché boursier marocain. Cette stratégie, dite contre-courant, consiste à acheter les actions perdantes et à vendre celles gagnantes. L'intuition derrière est de profiter du retournement de tendance qui surviendra pour corriger les écarts entre les cours boursiers et leurs valeurs fondamentales, induits par une réaction excessive du marché. Cela nous pousse à étudier la profitabilité de cette stratégie comparativement celle *Momentum*.

Ce renversement des tendances a été analysé des 76 titres marocains cotés sur une période totale d'une année scindés en deux (une période de formation et une période de détention). Notre étude a montré que le tiers des titres cotés sur la Bourse de Casablanca présente un comportement d'inversion des cours.

Mots Clés: Finance comportementale ; Stratégie *Contrarian* ; Marché Boursier ; Réaction du Marché ; Inversion des Cours.

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1 Introduction

The paradigm of market efficiency has largely dominated financial theory. Its proponents suggest that the informational efficiency of financial markets stems from economic fundamentals and from agents' rational expectations about the state and prospects of the economy. According to Fama (1965), "A market is efficient if and only if all the information concerning each asset quoted on that market is immediately incorporated into the price of that asset." He proposed three hypotheses for the efficiency of financial markets: the rapid dissemination of information at low cost, investors reacting immediately to the information they receive, and the price of a security following a random path. These assumptions imply perfect rationality on the part of investors (Von Neumann and Morgenstern, 1947). In an efficient market, share prices are always maintained at levels in line with their "fundamental" values.

Simultaneously, Jensen (1987) introduced the notion of arbitrage into the definition of market efficiency. Thus, an efficient market is where an investor cannot buy or sell assets for a profit greater than the transaction costs. While Jensen is one of the leading authors of the classical paradigm, his conception contradicts the principles outlined by Fama (1970), namely the exclusion of transaction costs in asset prices and the absence of deviations between prices and their fundamental values. Consequently, a knowledge contradiction has emerged within this paradigm. The advent of financial crashes shook the theoretical foundations of financial theory. The dramatic losses suffered by stock markets in 1987 called into question the famous paradigm of market efficiency. The recognition of market inefficiency, accentuated by market anomalies, paved the way for behavioral finance. This new financial theory introduces the psychological aspect to financial markets, recognizing that investors are first and foremost human beings whose irrational behavior is omnipresent. It marks a transition from "Homo-economicus" to "Homo sapiens," the irrational agent.

Behavioral finance emerged in the 1980s and developed further during the 1990s. It introduces aspects of psychology, sociology, and anthropology as behavioral biases impacting the decision-making process of investors, leading to irrational choices and suboptimal portfolio management. Discrepancies between stock prices and their fundamental values generate excess profits in financial markets. To take advantage of this, investors resort to contrarian investment strategies.

Our research question thus revolves around: "Are contrarian strategies detectable in the Moroccan stock market?" The associated hypotheses are:

- H1: The reversal of stock price returns indicates that the contrarian strategy is profitable.
- H2: Persistent stock price performance is observed in the presence of the momentum effect.
- H3: Both return reversals and performance persistence coexist, making both strategies profitable.

To answer our question, we test the profitability of the contrarian strategy on the Moroccan stock market using 76 listed securities, with the MASI as the benchmark index.

The rest of the article is structured as follows: The first part provides a theoretical and empirical comparison of the foundations of behavioral theory. The second part discusses the detection of contrarian strategies in international stock markets. The third part is dedicated to an empirical study within the Moroccan context.

2 Emergence of Behavioral Finance vs. Market Efficiency

Behavioral finance's challenge to the theory of efficient financial markets and the assumption that there is no additional profit to be gained in markets has prompted finance researchers to rethink investment strategies that can increase portfolio returns by accounting for investors' irrationality and behavioral biases. To predict share price movements, investors typically adopt two strategies: buying and selling stocks. The first strategy involves buying losing stocks and selling winning ones, known as the contrarian strategy. For a contrarian investor, earning extra returns means acting against the current market trend. The second strategy, known as momentum, involves buying more of the best-performing stocks and selling the worst performers.

The contrarian strategy on a financial market refers to taking long or short positions against the prevailing sentiment. Proponents of this strategy assume that financial markets are driven by herd behavior, with individuals constantly copying each other. This behavior can lead to the mispricing of shares. Thus, in the presence of widespread pessimism (optimism) in a market, investors may underestimate (overestimate) the profitability and potential of equities. Therefore, buying these distressed stocks and selling them after the market recovers can generate superior returns, and vice versa.

Singh (2018) and Dreman (1982) refer to contrarian investors as "value investors." They buy at low prices and sell at high prices, often using stock market indicators such as the Earnings-to-Price Ratio. These investors are constantly on the lookout for stocks whose historical performance is underestimated in order to sell them later at their intrinsic value (Singh, 2018). Wouassom (2016) also describes the contrarian investor as a "value investor," noting that they derive their gains from the "value premium." This premium will be positive as long as the losing indices generate higher returns than the winning or increasing indices over a given period.

2.1 Overreaction Hypothesis and Value Premium

Market inefficiency underlies the value premium received by contrarian investors as compensation for the excessive risks they bear. According to Fama and French (1993, 1995, 1996), the magnitude of this premium is influenced by the relative riskiness of contrarian investments. Conversely, Lakonishok et al. (1994) argue that these risks do not justify a value premium, attributing it instead to the exploitation of investors' suboptimal behaviors.

Investors' irrational decision-making manifests in two reactions driven by behavioral biases: under-reaction and overreaction to information. The overreaction hypothesis posits that investors tend to react disproportionately to new information, causing prices to surge too high and subsequently plummet too low. This behavior is often influenced by cognitive and emotional biases that lead investors away from rationality and concrete data (Daoudim, 2020).

Hong and Stein (1999) have identified two types of investors contributing to market overreaction. "Newswatchers" make price forecasts based on private signals related to stock fundamentals, while "momentum investors" naively rely on historical price trends. Their research suggests that the herd behavior of momentum investors perpetuates long-term overreaction.

Additionally, Barberis et al. (1998) found that investors tend to overvalue private information compared to publicly available data, a phenomenon explained by conservatism bias, which contributes to under-reaction to fundamental information such as corporate earnings announcements. These biases can lead to perceptual errors, prompting investors to overreact to new information.

Earlier studies, such as those by De Bondt and Thaler (1985), demonstrated that past stock returns of losers outperform winners over a three to five-year horizon after portfolio formation. Contrarian investors capitalize on these patterns to ensure profitability in the market, illustrating the phenomenon of financial market overreaction. Grossman and Shiller (1980) examined excessive price volatility based on the price-dividend ratio, suggesting that fluctuations in future dividends fail to explain observed stock price variability. In contrast, Kleidon (1981) observed a strong correlation between stock price movements and changes in next year's earnings, highlighting investor overreaction despite dividend trends, reflecting disproportionate short-term economic developments.

2.2 Contrarian Strategies: Between Value Metrics and Past Returns

There are two types of contrarian strategies available to investors: one based on value metrics and the other on historical stock performance. The value measurement strategy employs various ratios to assess past stock performance and anticipate future market expectations (such as earnings-to-price ratio, cash flow-to-price ratio, share price-to-book value ratio, and market value ratios). In contrast, the historical returns strategy uses past stock performance as a basis for evaluation.

Several researchers have advocated for the value measurement strategy through studies examining the relationship between earnings performance and stock returns. Their findings suggest that stocks with low earnings-to-price ratios (E/P or PER) tend to outperform those with high ratios (Williamson, 1970). However, Chan and Lakonishok (2004) note that stocks with temporarily low earnings can also fall into the low E/P category, highlighting the noise inherent in earnings data. This complexity allows E/P-based value strategies to achieve narrower spreads compared to other simple value strategies.

Regarding the strategy based on past performance, Vernier and De Belle (2009) analyzed how historical performance influences investors' financial decisions. They found that both good and poor past performance negatively impact investors' risk aversion, influencing subsequent decisions. This phenomenon is attributed to representativeness bias, where recent events are overestimated in terms of their probability. As a result, recent

successes or failures increase or decrease investor confidence respectively, which is inversely related to risk aversion.

Ultimately, the decisions made by investors are influenced by the perceived level of risk. Despite their differences, both types of contrarian strategies share the fundamental principle of going against market trends and categorizing stocks as "losers" and "winners" based on past performance.

3 Presence of Contrarian Strategies in Financial Markets

Financial studies across different stock markets have demonstrated that equity returns can be attributed to either the momentum effect, the contrarian effect, or both. The momentum effect suggests that stocks that have performed well (or poorly) in the past are likely to continue performing well (or poorly) in the future, relying on the extrapolation of past performance. Conversely, the contrarian effect posits that stocks that have performed poorly in the past will outperform those that have performed well in the future.

Numerous global stock markets have evidenced the presence of contrarian strategies within their markets.

3.1 Reversal Behavior of Returns in Stock Markets

Proponents of behavioral finance have proposed several hypotheses to explain the price rebound effect observed in markets. Drawing on behavioral psychology, Kahneman and Tversky (1982) suggest that investors' decision-making heuristics are influenced by memory, which tends to emphasize recent events and information.

Consequently, investors often base their risk assessments on vivid recent experiences rather than objective probabilities when making decisions.

Similarly, De Bondt and Thaler (1985, 1987) examined price reversal behaviors in the US stock market. They posited that investors' reactions to unexpected events or new information lead to market overreactions, resulting in stocks being mispriced relative to their fundamental values, followed by a reversion to the market mean. Over a three-year period, De Bondt and Thaler (1985) found that losing stocks outperformed winning stocks by approximately 0.694% per month. This outperformance, known as the contrarian premium, was attributed to investor overreaction. Chan et al. (1996) extended these findings, demonstrating that stock prices overreact to market information, leading both winning and losing stocks to exhibit reversal behaviors consistent with the stock market overreaction hypothesis.

Additionally, Chopra et al. (2000) constructed portfolios based on past performance over five years, revealing that the poorest-performing stocks outperformed the best-performing stocks by 5-10% annually over the subsequent five years.

Moreover, the phenomenon of return inversion can occur even over shorter periods, such as one week, as demonstrated by Lehmann (1990). Lehmann's study showed that stocks with positive returns in one week tended to experience negative returns in the following week, and vice versa.

3.2 Empirical Evidence of Contrarian Strategies in International Markets

Text, Text The first empirical evidence of the Contrarian effect was observed in the study by De Bondt and Thaler (1985) in the United States. Subsequently, Conrad and Kaul (1998) investigated the profitability of two investment strategies, Momentum and Contrarian, analyzing eight basic strategies with holding periods ranging from one week to 36 months. Their findings revealed that 55 out of 120 investment strategies generated statistically significant profits. This dual effect was also observed in the Chinese stock market during 1993-2000 (Kang et al., 2002; Wang and Zhao, 2001; Liu, 2003).

Chaoqiong Shi (2011) conducted a study examining both effects in the Chinese stock market from 2000 to 2010. Using weekly returns from winning (top 10% in returns) and losing (bottom 10% in returns) stock portfolios with overlapping holding periods of 1, 2, 4, 8, 13, 26, 39, and 52 weeks, the study concluded that the Chinese market exhibits both Momentum and Contrarian effects, with the Contrarian strategy showing greater profitability dominance.

Singh (2018) explored the presence of Contrarian and Momentum effects in the Indian stock market by analyzing daily prices and returns of 50 stocks listed on the National Stock Exchange from January 2010 to December 2017. Stocks were categorized into losing and winning portfolios based on past returns, across short-term and long-term horizons. The study revealed that Momentum effects were observed in sectors like banking, energy, construction, cement, fertilizers, media, and shipping in the short term, while the telecom sector demonstrated strong Contrarian strategy profitability in the long term. Kaur (2014) corroborated these findings,

showing profitability of Contrarian strategies in both manufacturing and service sectors, with higher premiums observed in manufacturing.

In a different context, Alonso and Rubio (1990) studied the Spanish stock market over a 3-year period, finding profitability in Contrarian strategies even after adjusting for size effects. Forner and Marhuenda (2003) further explored Momentum and Contrarian strategies in Spain across varying horizons (6, 12, 36, and 60 months). Their results indicated positive returns from Momentum strategies over 6 months and from Contrarian strategies over 36 months. However, the statistical significance of these returns varied, contradicting earlier findings by Alonso and Rubio (1990) suggesting long-term efficiency of Contrarian strategies. From these empirical findings, it is evident that investors employ various investment strategies to capitalize on international stock markets. The presence of Contrarian and Momentum strategies globally prompts exploration of Contrarian strategies among investors in the Moroccan financial market.

4 Detection of Contrarian Strategies in the Moroccan Financial Market

Contrarian strategies can yield abnormal returns by diverging from the broader financial market trends. The presence of a premium associated with these strategies has sparked significant debate and contemplation, challenging the hypothesis of market efficiency. Various explanations have been proposed to elucidate the source of abnormal returns generated by Contrarian strategies. The traditional perspective posits that this value premium compensates for the risk undertaken by Contrarian investors. However, alternative viewpoints suggest that risk alone cannot fully account for this premium, pointing instead to different financial rationales.

Behavioral finance contributes to this discourse by emphasizing the overreaction hypothesis, which underscores how cognitive biases influence financial decisions across all investors. These biases often lead to perceptual errors that manifest in reversal behaviors in stock prices within financial markets.

To investigate the presence of Contrarian strategies in the Moroccan stock market, an empirical study was conducted on a dataset comprising 76 stocks listed on the Casablanca Stock Exchange, collectively constituting the MASI index. The hypotheses associated with this reversal phenomenon are as follows:

H1: Reversals in stock price returns indicate profitability of the Contrarian strategy.

H2: Persistence in stock price performance is observed alongside the Momentum effect.

H3: Reversals in returns and persistence in performance coexist, indicating profitability of both strategies.

4.1 Stock Market Dynamics in the Moroccan Stock Market

Following the Covid-19 pandemic, global stock markets experienced subdued performance, and the Moroccan market was no exception. After a period of stagnation, the year 2023 marked a notable resurgence in stock market activity. The Moroccan All Shares Index (MASI) rose by 12.80% in 2023, signaling renewed investor confidence after a lackluster 2022, which saw the market's worst-ever performance (-19.75%). This recovery, although moderate, holds significance for a market still grappling with the aftermath of the health crisis and an increasingly inflationary macroeconomic environment.

The year 2023 commenced with disruptions in the bond market and a correction in the yield curve, adversely affecting the equity sector. However, the Central Bank's intervention to maintain its key rate stability propelled the MASI to a more than 14% increase lasting until August. This surge was followed by a correction that persisted for over two months.

Throughout the year, investors navigated anticipated interest rate hikes and anticipated a shift towards accommodative monetary policies. Two key insights emerged from the Moroccan stock market in 2023. Firstly, the importance of maintaining a long-term investment perspective was underscored. The year demonstrated that attempts to time the market perfectly often falter in its unpredictable nature, whereas patience and adherence to a long-term strategy prove rewarding. Investors who sought to synchronize their investments with market fluctuations often missed optimal opportunities.

Secondly, the cycles of growth and contraction experienced by the global economy in 2023, exacerbated by fluctuations in inflation and interest rates, became pivotal considerations for financial market investments. Certain Moroccan sectors thrived notably in 2023, including real estate, construction, public works, health, and banking, outperforming even the MASI. Conversely, challenges were evident in sectors like mining, alongside individual stocks such as SNEP (Société Nationale d'Electrolyse et de Pétrochimie).

Looking ahead, forecasts maintain optimism regarding sustained performance levels in 2024, despite potential disruptors such as geopolitical developments in the Middle East and ongoing inflationary risks.

4.2 Methodology: Singh (2018)

Referring to the method of Singh (2018), the Contrarian (or Momentum) strategy in a stock market is based on the idea that share prices correct after extreme movements caused by investor overreaction. This method typically relies on the analysis of abnormal stock returns.

4.2.1 Calculation of Daily Returns

According to Singh (2018), to demonstrate the presence of the Contrarian strategy, the approach first requires the calculation of daily returns for both individual equities and the benchmark index.

Daily returns are calculated as follows:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad (1)$$

4.2.2 Calculation of Daily Abnormal Returns

Next, the stocks' abnormal returns relative to the benchmark index are calculated. Stocks with positive abnormal returns compared to the index are classified as winning stocks, while the others are considered losing stocks. The abnormal returns AR_{it} are calculated by subtracting the expected returns $E(R_{it})$ from the observed returns R_{it} :

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

The expected return can be calculated using the Capital Asset Pricing Model (CAPM):

$$E(R_{it}) = \alpha_i + \beta_i \cdot R_{mt} \quad (3)$$

Where:

- α_i is the alpha of security i ,
- β_i is the beta of security i ,
- R_{mt} is the market return on day t .

4.2.3 Calculation of Beta

The beta β_i of each stock i is calculated by regressing the stock returns R_{it} on the market returns R_{mt} :

$$\beta_i = \frac{Cov(R_{it}; R_{mt})}{Var(R_{mt})} \quad (4)$$

Where:

- $Cov(R_{it}; R_{mt})$ is the covariance between stock i returns and market returns,
- $Var(R_{mt})$ is the variance of market returns.

4.2.4 Cumulative Abnormal Returns (CAR)

An abnormal return refers to the difference between actual returns and expected returns of a security or portfolio over a specific period. The expected returns are typically estimated using an asset pricing model, often benchmarked against a long-term historical average. Abnormal returns thus indicate the risk-adjusted performance of a security or portfolio relative to the broader market.

Cumulative abnormal returns over the formation and holding periods are computed for each security as follows:

$$CAR_i = \sum_{t=1}^T AR_{it} \quad (5)$$

Here, T represents the total number of trading days in the holding period.

4.2.5 Testing the Contrarian Strategy

To test the Contrarian strategy, we assess the cumulative abnormal returns of stocks categorized as winners and losers across both the formation and holding periods. The presence of a significant reversal in abnormal returns signifies the effectiveness of the Contrarian strategy.

$$CAR > 0 \rightarrow \text{Winner Stock} \quad ; \quad CAR < 0 \rightarrow \text{Loser Stock} \quad (6)$$

During the holding period, if stocks classified as winners continue to exhibit positive returns while losers show negative returns, this indicates the presence of the Momentum strategy. Conversely, if winners display negative returns and losers show positive returns during this period, it suggests a Contrarian strategy at play.

Winning stocks, those outperforming the benchmark index, are contrasted with losing stocks, which underperform relative to the benchmark. When winners yield substantial positive returns and losers record notable negative returns over the holding period, the Momentum strategy is considered applicable. However, if a substantial reversal occurs—where winners start underperforming or losers begin outperforming—during the holding period, it suggests that the Contrarian strategy may yield superior returns.

4.3 Analysis of Results on the Moroccan Stock Market

To detect Contrarian and Momentum strategies on the Moroccan stock market, we applied Singh's (2018) methodology to 76 stocks listed on the Casablanca Stock Exchange, using the MASI as our benchmark index. Our analysis spanned the year 2023, covering a total of 249 trading days, divided into a six-month formation period and a six-month holding period.

The Contrarian and Momentum strategies were identified based on the average returns of winning and losing portfolios:

- Contrarian strategy: Observed when winning portfolios underperform and losers outperform.
- Momentum strategy: Observed when winning portfolios continue to outperform and losers underperform.

Tables 1 (winning stocks) and 2 (losing stocks) present the Beta calculated from the MASI index return, along with cumulative abnormal returns (CAR), for the 74 stocks observed across 249 trading days (totaling 18,426 observations). These tables provide a summary of CARs per stock at the end of each period (June 30 and December 31, 2023) for clarity and reference.

Table 1. Return Trends of Winning Stocks.

Stock	Sector	Beta	CAR (%)		Investment Strategy
			Formation Period	Holding Period	
Afric Industries	Construction	0,18936	4,465432	-5,40755	Contrarian
Akdital	Health	0,484182	19,99785	34,65594	Momentum
Alliances	Real Estate	1,058389	42,44672	34,17774	Momentum
Aradei Capital	Real Estate	0,448641	2,033993	-1,09871	Contrarian
AWB	Banking	1,088341	16,13751	4,049866	Momentum
AutoHall	Retail	0,52709	11,44573	-11,3965	Contrarian
BCP	Banking	1,231218	6,514183	-0,941628	Contrarian
BMCI	Banking	1,204084	26,04111	14,50942	Momentum
CDM	Banking	0,642347	20,2912	5,177807	Momentum
CIH	Banking	0,808926	14,30898	-5,56089	Contrarian
Ciments Maroc	Construction	1,191967	10,60576	6,303647	Momentum
Delta Holding	Holding	0,660293	26,67822	12,90141	Momentum
Disway	Technology	0,335221	11,0675	-9,41515	Contrarian

Stock	Sector	Beta	CAR (%)		Investment Strategy
			Formation Period	Holding Period	
Addoha	Real Estate	1,027397	40,47523	38,52675	Momentum
Ennaki	Retail	0,161069	3,079621	-2,14883	Contrarian
EQDOM	Finance	0,241235	14,4614	3,542056	Momentum
Immoyente Invest	Real Estate	0,137179	0,240112	-2,745	Contrarian
Jet Constructors	Construction	0,666119	0,610063	16,65046	Momentum
Lafarge Maroc	Construction	1,481573	15,26747	2,383773	Momentum
Lesieur Cristal	Agri-food	0,409898	2,010113	6,971925	Momentum
MaghreBail	Finance	-0,02297	5,206545	-2,21997	Contrarian
Maroc Leasing	Finance	-0,01926	1,488236	2,001176	Momentum
Minière Touissit	Mining	0,804712	2,48484	-49,2744	Contrarian
Mutandis SCA	Agri-food	0,720969	2,086297	5,2477	Momentum
Oulmès	Beverages	0,178665	1,528673	-16,5014	Contrarian
Résidence Saada	Real Estate	0,754864	1,20169	24,69715	Momentum
RISMA	Hospitality	0,35264	38,07277	23,63542	Momentum
Sanlam Maroc	Insurance	0,613644	3,25744	24,90878	Momentum
Boissons Maroc	Beverages	0,71558	2,389695	-13,0476	Contrarian
Marsa Maroc	Transportation	1,086112	8,552299	5,561222	Momentum
SONASID	Construction	0,902251	9,006951	11,32126	Momentum
TGCC SA	Construction	0,667038	13,0103	22,04878	Momentum
Timar	Transportation	-0,25584	103,7166	47,00784	Momentum
Unimer	Agri-food	0,008865	1,796253	10,77344	Momentum
Wafa Assurance	Insurance	0,901679	4,469458	-5,54703	Contrarian
Zellidja	Holding	-0,0921	16,3116	-21,2308	Contrarian

Table 2. Return Trends of Losing Stocks.

Stock	Sector	Beta	CAR (%)		Investment Strategy
			Formation Period	Holding Period	
AFMA	Insurance	0,093314	-8,21013	0,45578	Contrarian
Afriquia Gaz	Oil & Gas	1,000831	-16,5584	-6,88257	Momentum
AGMA	Insurance	0,069081	-1,12242	7,678475	Contrarian
Aluminium MA	Construction	0,495046	-6,69929	1,241935	Contrarian
Atlanta Sanad	Insurance	0,326771	-0,48011	2,509367	Contrarian
Auto Nejma	Retail	-0,04433	-6,51037	39,28301	Contrarian

Stock	Sector	Beta	CAR (%)		Investment Strategy
			Formation Period	Holding Period	
Balima	Real Estate	0,052424	-6,27914	18,15138	Contrarian
Bank Of Africa	Banking	0,77965	-2,50008	-1,37966	Momentum
Cartier Saada	Agri-food	0,186282	-5,07658	-7,26195	Momentum
Colorado	Construction	0,188759	-4,83511	8,915907	Contrarian
Cosumar	Agri-food	1,234386	-2,52808	-4,58031	Momentum
CTM	Transportation	-0,01772	-6,78668	-7,6144	Momentum
Dari Couspate	Agri-food	-0,00223	-4,71804	-14,7923	Momentum
Delattre Levivier	Industrial	0,096421	-7,61169	-0,44048	Momentum
Disty Techno	Technology	0,405896	-1,59191	-7,811331	Momentum
Fenie Brossette	Retail	0,477348	-15,6517	-13,019	Momentum
HPS	Technology	0,972308	-13,6392	-89,5461	Momentum
IB Maroc.com	Technology	-0,08922	-21,2045	-14,3538	Momentum
Involys	Technology	-0,16066	-6,29132	-5,08278	Momentum
IAM	Telecommunications	1,358596	-11,661	-0,00638	Momentum
Label Vie	Retail	0,743407	-4,05222	-11,1544	Momentum
M2M group	Technology	0,016535	-4,02723	-12,5054	Momentum
MaghrebOxygène	Chemistry	0,163969	-10,1128	7,463362	Contrarian
MANAGEM	Mining	0,654296	-27,8917	-12,016	Momentum
Med Paper	Sylviculture	0,450078	-13,5578	-18,9571	Momentum
MicroData	Informatique	0,226732	-2,72161	13,78314	Contrarian
Promo Pharm	Pharmaceuticals	-0,04668	-11,0755	7,483753	Contrarian
RéalisationsMéca	Distribution	0,096029	-0,33536	-23,9672	Momentum
Rebab Company	Mining	0,097466	-19,520359	-10,628072	Momentum
Salafin	Finance	0,275237	-3,61067	-4,02222	Momentum
S.M Monétique	Technology	0,051551	-18,684	9,245091	Contrarian
SMI	Mining	-0,31511	-16,4959	12,46225	Contrarian
SNEP	Chemistry	0,888214	-22,7928	-6,58152	Momentum
SOTHEMA	Pharmaceuticals	0,332556	-11,8458	-18,5412	Momentum
Stokvis NordAfri	retail	0,271128	-29,607	-3,33336	Momentum
Stroc Industrie	Industrial	0,184084	-10,2433	-14,0784	Momentum
TAQA Morocco	Electricity	0,995702	-11,948	6,461309	Contrarian
Total Energies	Oil & Gas	0,732846	-2,75011	-12,2028	Momentum

An analysis of the sensitivity of stocks to market risk shows that Lafarge Holcim Maroc is the most sensitive to market fluctuations, with a beta of 1.48. On the other hand, Unimer is the least sensitive, with a beta of 0.008. However, this degree of sensitivity does not necessarily indicate a trend reversal or the presence of Contrarian effects. To better detect the Contrarian (or Momentum) effect, cumulative abnormal returns (CARs) are more decisive.

The values of the abnormal returns calculated over the formation period classified 36 stocks as winners and 38 stocks as losers. It should be noted that two stocks (SAMIR and DIAC SALAF) recorded no movement during the year of our study (2023).

In terms of trend reversal, 14 of the 36 winning stocks exhibited a Contrarian effect, while the other stocks showed a Momentum effect. Additionally, 13 of the losing stocks reversed their trend to become winners. The total number of stocks showing a Contrarian effect is 26, representing approximately one-third of the sample. The Contrarian effect is present across various sectors, notably the banking sector (CIH and BCP), the mining sector, insurance, construction, IT companies, as well as the pharmaceutical industry, distribution, and property investment companies.

On the other hand, the oil and gas, agri-food, transport, and telecoms sectors exhibited a Momentum effect, indicating a persistence of price trends over the year 2023.

The mixed presence of Contrarian and Momentum strategies on the Moroccan stock market contradicts Fama's (1970) Efficient Market Hypothesis (EMH). According to Fama (1970), asset prices reflect all available information, and market anomalies such as Contrarian and Momentum effects should not persist. However, the results of this study show a significant presence of these effects, suggesting that the Moroccan market may not be entirely efficient.

The Contrarian Strategy, where asset returns reverse, is often explained by investors overreacting to information. According to De Bondt and Thaler (1985), investors tend to overreact to new information, leading to subsequent price corrections. Conversely, the Momentum strategy, which stands out for the persistence of return trends, is often attributed to behavioral inertia and the slow adaptation of investors to new information. Jegadeesh and Titman (1993) have shown that Momentum strategies can generate abnormal returns due to price inertia.

At the same time, behavioral finance offers explanations that complement those of modern finance by integrating behavioral biases and emotions into investors' decision-making processes. Shefrin and Statman (1985) have pointed out that loss aversion and pride can lead to either regression to the mean (the Contrarian effect) or persistence (the Momentum effect). Consequently, the presence of Contrarian and Momentum strategies can be explained by:

- **Overreaction bias:** Investors overreact to new information, leading to subsequent corrections and the Contrarian effect.
- **Underreaction bias:** Investors are slow to adapt their expectations to new information, leading to persistent trends and the Momentum effect.
- **Loss aversion:** Investors are more affected by losses than by equivalent gains, which can influence asset price trends.

5 Conclusion

An analysis of abnormal returns on the Moroccan stock market reveals the presence of both Contrarian and Momentum strategies. Only a third of the stocks studied exhibited a Contrarian effect, suggesting inefficiency and investor overreaction. On the other hand, two-thirds of the stocks showed trend persistence, consistent with the Momentum effect.

The results of our empirical study confirmed the existence of Contrarian and Momentum strategies on the Moroccan stock market. Of the three hypotheses initially formulated, the results refute H0 and H1 and accept H2, indicating that a reversal of returns and persistence of performance coexist. Consequently, the Moroccan stock market, like other international markets, is characterized by the presence of both Contrarian and Momentum investment strategies. It is also possible to identify which strategy will offer the best results for each sector. The presence of these effects indicates a certain irrationality among Moroccan investors, influenced by behavioral biases, reviving the debate on behavioral finance versus the theory of efficient markets.

Unquestionably, behavioral finance has enriched the field of market finance by integrating observed facts such as the psychological, sociological, or anthropological factors it adopts. The integration of the psychological approach into this theory has led to a better understanding of the causes of investor irrationality and even to the possibility of adjusting to it. Obviously, irrationality has direct repercussions on the stock markets, as it can bias financial decisions and the optimality of portfolio management. As a result, stock prices can rise far above their fundamental values. To take advantage of the irrationality present in the stock market, some investors opt for the Contrarian strategy to maximize their profits. The gap between market value and fundamental value cannot last forever, as the financial market eventually corrects stock prices. This is why a Contrarian investor sells when others buy and buys when others sell, to earn the correction premium.

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