

**The Short Run and the Long Run Performance of an
IPO: A Case Analysis of Maroc Telecom in the
Casablanca Stock Market**

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ABSTRACT

This study examines the short and long run performance of the IPO by Maroc Telecom listed on the Casablanca Stock Exchange during the period 2004-2019. The study uses the event study methodology to analyze the impact of the IPO announcement on the stock price for 180 days of short run period and for 5 years of long run period following the first trading day. The empirical results show that there is empirical evidence for underpricing, and short run and long run underperformance in line with the findings found in both developed and developing markets.

Keywords: initial public offering, short run, long run, performance, event study

ÖZ

Bu çalışma, 2004-2019 döneminde Kazablanka Borsası'nda listelenen Maroc Telecom'un halka arzının kısa ve uzun vadeli performansını incelemektedir. Çalışmada, olay çalışması metodolojisini kullanılarak, Maroc Telecom'un halka arz duyurusunun hisse senedi fiyatı üzerindeki etkisini 180 günlük kısa vadeli dönem ve ilk işlem gününü takip eden 5 yıllık uzun vadeli dönem için analiz edilmektedir. Ampirik sonuçlar hem gelişmiş hem de gelişmekte olan pazarlarda bulunan bulgularla örtüşen, düşük fiyatlandırma, kısa ve uzun vadeli düşük performans olduğunu göstermektedir.

Anahtar Kelimeler: ilk halka arz, kısa dönem, uzun dönem, performans, olay çalışması

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Chapter 1

INTRODUCTION

1.1 Study Background

A plethora of work has been done on observational studies using various variables and tested various theories to explore the reasons and the effects of IPOs' (initial public offering, IPO hereafter) short-run and long-run performance (Ikram, & Nugroho, 2014; Ooi, Mori, & Wong, 2019; Kim, Kim, Lee, & Tang, 2020; Kolari, Pynnonen, & Tuncez, 2020). From the past few decades, it could be observed that economic growth is the product of dynamic transformation that all governments seek to control without always achieving it. A nation can only develop to the degree that it has adequate resources and affects them wisely. To what extent the economy needs capital requires a funding mechanism adapted to the requirements of a modern context. A modern stock market that can work as a gathering place for a long-term supply of capital is the need of the time because we are facing a situation characterized by a weakening of household assets, a lack of corporate financial structure and an imbalance in public finances (Allen et al., 2002; Piper, & Weinhold, 1982).

The economic and strategic functions that the financial market perform includes but not limited to instrument of economic liberalization, mobilizing savings, facilitating the transformation of output systems by purchasing assets or taking ownership of them (Duisenberg, 2001; Aregbeshola, 2016; Baily, & Elliott, 2013). Other enterprises that can be funded without calling on the company's cash flow by issuing securities:

distribution of company capital: via IPOs (company capital becomes mobile) and the issuance of shares in cash (for the next savings set, the company will count on the new shareholders). Intending to fulfill their financial needs worldwide, many businesses sell their shares to the public to collect money (Alfred, & Sirower, 1999).

When a private corporation needs money and decides to sell shares to the general public for the first, is known as Initial Public Offering (IPO), in the language of finance. Debt or equity may constitute securities. Companies typically start operating by collecting funds from private investors without a liquid market. If a business thrives and requires additional capital, it finds it advantageous to go public by selling shares to the general public at some point. Improving liquidity and collecting more funds from diversified investors is the reason for going to the public. To examine the effectiveness of the issuance of IPO both in the short-run and in the long-run, various studies have been conducted so far (Zhang, & Zhang, 2020; Chahine, & Filatotchev, 2008; Killins, 2019; Kolari, et al., 2020). Studies find that in the long run, an IPO has a very high return, but results in a negative return in the short-run (Sadaqat et al., 2011; Van Heerden, & Alagidede, 2012; Wei Leong, & Sundarassen, 2015). Studies maintain that the effect of IPO over-performance or underpricing in the short-run and under-performance or over-pricing in the long-run remain a puzzle for decades (Gounopoulos et al., 2007; Mumtaz et al., 2016; AlShiab, 2018). Now if Morocco is blessed with a stock exchange, whose organization and rules of operation converge to the best international standards, it still suffers from its narrowness because of the limited number of companies listed there. A large number of family businesses in Morocco have agreed to be listed on the stock exchange for certain reasons. For instance, to guarantee financial capital for the growth of the company or to give their shareholders the ability to sell their shares if they prefer to liquidate them.

Selecting one company was linked to the fact that multiple companies can lead to significantly biased, overstated standard errors and less accurate coefficient estimates in those kinds of analyses (Hakala, S. (2017)), and also, we picked one firm in order to have a proper study, which is why I chose Maroc Telecom because it is one of the largest IPOs in Morocco and also the main telecommunications company in Morocco.

The purpose of this thesis is to examine the long-run and short-run impact of IPOs on the performance of companies listed on the Moroccan stock exchange by calculating the daily stock market returns.

1.2 Objectives of the Study

Generally, this study is aimed to analyze Maroc Telecom's short and long-term performance on the Casablanca stock exchange from 13 December 2004 to 13 December 2019. More specifically, this study has set out the objectives.

1. To explore the evidence of the company's underpricing
2. To analyze the company's initial and short-term results
3. To examine Maroc telecom's long-term performance following the listing.

1.3 Thesis Structure

The first chapter of the thesis introduce the purpose of the analysis and discuss the research method briefly. A brief literature review focusing on IPO performance trends and theories/propositions that describe short-term underpricing and long-term underperformance phenomena are presented in the second chapter of the study. The third chapter of the study provides an overview of the Casablanca Stock Exchange and its IPO process. The analysis of Maroc Telecom's IPO, and results discussion are provided in chapter four, while chapter five concludes the study and provides some policy outcomes.

Chapter 2

LITERATURE REVIEW

2.1 Companies Often Go Public. But Why?

In order to render a company into an IPO, the acquisition of money pertaining the growth of business is essential factor as articulated by Bancel and Mitto (2009). Moreover, the capability of a company to hike the equity capital, a stock market also made by IPO, in which the business runners along with other stakeholders can turn a few amounts of their resources into money at imminent period by giving permission to the public in order to sell the concerning share of company (Ritter and Welch, 2002).

That is why, it proposes an escape path for the starting founders along with the investors of venture with the integration of funding (Jenkinson and Ljungqvist, 2001). Bancel and Mitto (2009) utter the solely modest assistance for the exit strategy theories. This is also in conformity with Black and Gilson (1998), who thinks the prevailing stock market, with an IPO is inevitable, in order to survive in a lively venture capital market nevertheless, the IPO's is a more exit for the venture capitalist as compared to the entrepreneur because they reclaim control of venture capitalist in the companies having venture capital backed during an IPO.

The companies can yearn for the substantial outcomes while moving to public. Moreover, to the financing for the hiking or growth purposes, the factors of enhanced visibility, respect, and prestige with the incorporation of flexibility about the finance

are formidable to all companies and countries, which they unveiled as described by Bancel and Mittoo (2009). There may be divergence about the perception across the firms. The main result was that the motives for an IPO substantially across the firms, organization and the regulatory environment while the dependence upon the structure of ownership, size, age, and region. The major support and help were incorporated in the survey for hypothesis by the financial and strategic factors like improved competency, credibility and prestige, as proposed by Bancel and Mittoo (2009). In contrast, the Ritter and Welch (2002) discovered that the reasons and the causes which are not financial have a minute role for the majority of the organizations and companies, debating that if the funding is not charged, businessmen will not contribute to the intermingled public market mechanism. There are also many implications for the organization of consenting to go to the public because it unveils the firms in terms of improved transparency and the regulatory standards pertaining stock market as well as the undeniable investor and media critical evaluation of media (Bancel and Mittoo, 2009). The constraints and benefits of going to public have identified by the authors while consenting that the respondent at the CFO deliberated the benefits in order to outweigh the incurred cost of going to public substantially. The author also integrates the fact of conversion of many private owned firms into public firms.

The concern related to the question why the IPO,s is the best available way for the entrepreneur to mountain the capital is still prevailing (Ritter and Welch, 2002). Organizations' policies and regulations on the conversion of a public company and why, in some situations or at times, the opportunity to do an IPO is still important relative to others.

Ritter and Welch (2002) notice that concerns remain as to whether IPOs are the surest option for entrepreneurs to collect money, taking into account the tight laws and regulations relating to the conversion of a publicly traded corporation and why, in some cases or at times, the desire doing an IPO is higher than in others.

2.2 The Short-run Performance of an IPO and the Informational Asymmetry Hypothesis

Many businesses which are publicly going, do the same with initial public offering (IPO) of the shares of investor. The issue related to underpricing at the IPO has been an important area of scrutiny in the domains of financial community, especially to over the last decade. For several decades, the trend of underpricing has prompted heavily interest among the financial economists while some of the scholars and researchers in the early days also focuses on some common aspects about the underpricing case.

The renowned scholars and researchers such as Logue (1973) and Ibbotson (1975) have articulated that the IPO shares appear to be underpriced when the pertaining business of the firm or organization go to the public for the provocation of curtailing the share price on initial day of trading. If we elaborate this fact, when the investor which purchases a contemporary issue at the price of the bid and sells these issues at the selling price on the first day of listing will prompt a substantial large return. The trend during the first day, relevant stocks of IPO companies obtain good amount of positive returns is renowned and has been noted with diligence and reported. The outcome, after the critical evaluation of 38 diverse IPO authors Jenkinson and Ljungqvist (2001b) recorded underpricing on 36-country markets, except those of the tendering deals in the UK. After Ibbotson (1975) first expressed the anomaly in question, the underpricing mechanism has been studied exclusively. In 1960's, he

noted an initial return of an average of 11.4% for the stocks of American which are going to be public. Ibbotson and Jaffe (1975) used a greater model for the same time duration and uttered an initial return of 16.8% on average. Some scholars like Ibbotson, Sindelar and Ritter (1988) proposed the positive initial returns of the initial public offerings and noted the initial returns of 16.4% on average by evaluating 8,668 IPO's between the 1960-87. The fact that the underpricing is linked with the initial public offering rendered which it produces abnormal returns in the short run is articulated by the researchers. Many other researchers like Ibbotson, Sindelar and Ritter (1988) proposed that underpricing is a common trend linked with organizations which are conducting the stock market launch. The difference between the sales price and closing price on the first day is called the underpricing. The most important theory along with empirical evidence shows that IPO underpricing prompts due to asymmetry of linked with information.

The most widely studied and developed models based on one type of asymmetric knowledge (Ljungqvist and Wilhelm, 2005). They presume one of an IPO transaction's main agents are better informed than the other(s). The group, which is accessed to substantial information and data, is known as agent and this will have to be depending on the agent, which is called the principal (Woloszyn and Zarzecki 2013).

Agent-principal information frictions illustrate the permanent existence of underpricing. Ljungqvist and Wilhelm (2005) provide clear proof that these frictions are an interpretation of at least part of the well-known phenomenon. There are various theories and hypotheses focused on information asymmetry to describe the short-term underpricing of IPOs. Rock (1986) explained the most important principle is the disparity in the presence of the information between different groups of investors,

well-informed and underinformed. The investors which are informed supposes the rationing and subscribe to IPO while let the investor know and buy those shares with minute reasonable value in issuance.

It rendered the uninformed investors as “winner’s scourge.” IPO must be offered at a smaller price than the fair price in order to maintain the uninformed investors in the market because none of the available group and classes of investors has resources which are in conformity to dissolve the initial public offer. Some models which are theoretical are made on the basis of “signaling hypothesis”, as suggested and advised by Welch (1989) along with many others, a signaling model having the domain that high-quality firms and organizations are exploiting their IPO’s underpricing to pave the ways of their substantial valuations to the market (Agathee et al., 2012). The asymmetry in the information prevails between the proposing of the organization which is better informed and the investors. As proposer has a firm know-how pertaining to the valuation of the firm in this phenomenon, the rational investors are afraid of “lemon problems”.

The aspect as debated and proposed by Allen and Faulhaber (1989) is that underpricing can have positive outcomes for a product of the company. The high-quality business can yearn to position itself as such by underpricing their starting issue of shares, while knowing that the investors have good and critical knowledge about the fact that the best companies will maintain and recover the expenditure of the underpricing signal by obtaining a substantial price in subsequent offers as proposed by (Welch, 1989). The writer realized that the higher the degree of underpricing results in the greater probability of higher price organizational and company.

As suggested and proposed by Ritter and Welch (2002) that, if someone is leaving the money at IPO is also a way of articulating the investors of good quality but, it prompts a question whether, it has more potential to influence the investors than other available ways of not paying heed to the money, as a sign of high-quality business.

The theory of Book-Building which is also called as the market feedback hypothesis, is the final interpretation of underpricing coming from the hypothesis of knowledge which is not symmetrical as integrated in the discussion. The above-mentioned theory was advised by (Spindt, 1989) after (Benveniste and Wilhelm, 1990) and (Spatt and Srivastava, 1991), as said by Ritter and Welch (2002). The book-building method is comprising of a method which force and compel the investor to unveil the information pertaining the issuing company by uttering them that it is best for them (Ljungqvist, 2007). While the Rock (1986) has a perception that some investors have firm and inevitable knowledge of the issuing firms, as described in the segment on the winner curse concept. One of the formidable duty of underwriters to seek information for the setting and maintain of good price of the bid while proposing the company as public (Ljungqvist, 2007). The building books will contribute and assist a lot the underwriter in order to seek information from investors who have good knowledge as said by Ritter and Welch (2002).

Underwriters and issuers conduct marketing strategies (roadshows) with book building to advertise their business to potential investors (Kulendran and Perera, s.d.), before fixing the price of their shares. Roadshow helps to assess demand as potential investor viewpoints and signs of interest are canvassed (Ritter and Welch, 2002). It's evident that the release of this clue, in the non-appearance of recompense by underpricing, may not be in the investor's benefit because this may lead to higher prices for the bid.

Much worse, there would be an opportunity for investors with superior information to offer false information (Ljungqvist, 2007).

In addition, in many countries, the stern pro-rata allocation principles on which the concept of Rock (1986) is based have been replaced by book construction, the latter enabling the underwriter to decide solely on allocations (Ljungqvist, 2007). Investment bankers use book building to reward investors who disclose favorable information with a relatively large allocation of the (underpriced) security, in addition to underpricing (Ljungqvist, 2007).

2.3 The Long-run Performance of an IPO and Explanatory Hypothesis

It is one of the most argued and discussed problem for the researchers and scholars. It is not like the short-term IPO results; underperformance or overpricing is concerned with the long-term performance at IPO's. The scholars and researchers have proposed plenty of theoretical interpretation pertaining to long-term performance at IPO's and have conceded the fact that IPO stocks keep performing badly in first to 5 years after they have rendered as public. In contrast to the seeing the underpricing phenomenon, the concept of underperformance has also been questioned because the results and outcomes have greater inclination and dependence on the methods and standards being used in long-term performance analysis and consequently, prompting the inaccurate and debatable outcomes. So, the proof is not as important as was considered for the short-term results.

The earliest one who articulated below-average U.S. market outcomes throughout the initial 4 years after converting of those markets into public was Ibbotson (1975). The

proposed yields were not in conformity statistically because of the increased benchmarks of standard deviations and minimum size of sample. The results are greatly articulated and tracked around the markets and across times. The scholars like Ritter (1991), with other scholars has also proposed that in the long-term, aftermarket, IPO's are greatly underperforming. The results have also confirmed by many scholars and researchers of US. The availability of underperformance can be considered firm and competent, as minimal works has prompted the same results. Despite the researchers while exploiting the other available methodologies and methods of statistics as remarked by Saleh and Mashal (2008). The latter problem has also been extremely debated in the long-term performance literature, as Brav et al. (2000), as well as many others, have uttered that perhaps the influence of selected approach has a substantial influence over measurement of performance.

The scholars like Gajewski and Gresse (2006) have discovered that no degree of underperformance was gauged in Europe in the same way as the US stock markets. In order to conclude this point, the previous studies are also integrated, while over performance is seen in Sweden and Greece and underpricing is encountered in France and Switzerland. The trend was, however, also proposed with a sufficient number of Europe countries. The outcomes from Gajewski and Gresse (2006) for the market debated in the prevailing study and are summarized in Table 2.2. All the studies and information has confirmed negative, long-term abnormal returns having range between -2.80% in Portugal and -32.80% in Germany.

Country	Authors	Period	Sample size	Methodology	Time Horizon	Mean abnormal performance
France	Brounen and Eichholtz (2002)	1984-1999	17	CAR	1	-12.62%
	Chahine (2004a)	1996-1998	168	BHAR	2	-9.94%
	Leleux and Muzyka (1997)	Nov. '87 - Mar. '91	56	CAR	3	-29.2%
Germany	Jaskiewicz et al. (2005)	1990-2000	-	BHAR	3	-32.8%
	Ljungqvist (1997)	1970-1993	180	BHAR	3	-12.11%
	Sapusek (1998)	1983-1993	142	CAR	3	-20%
	Stehle et al. (2000)	1960-1992	187	BHAR	3	-6%
Portugal	Duque and Almeida (2000)	1992-1998	21	CAR	1	-2.80%
United-Kingdom	Brounen and Eichholtz (2002)	1984-1999	24	CAR	1	-4.53%
				BHAR		-5.83%
	Khurshed et al. (1999)	1991-1995	240	BHAR	3	-17.81%
	Leleux and Muzyka (1997)	Nov. '87-Mar. '91	220	CAR	3	-21.8%
	Levis (1993)	1980-1988	483	CAR	3	From -8.31% to -22.96% according to the benchmark

Source: Entirely focused on Gajewski and Gresse's Table 14 (2006).

2.3.1 The Quality and Prospect Hypotheses

The researchers Perera and Kotalawala (2014) points out an intermingled trend among underpricing and post-IPO performance while in long term. Scholars have also proposed the same theoretical hypothesis for both of the findings, which are empirical. As discussed above, a greater degree of underpricing is leveraged as a quality signal by the issuing companies. Grinblatt and Hwang (1989) also focus that good-quality organizations keep progressing best in the long run. The statement is that these types of companies issue only a minimal share of their available stock and willing to vend the residual equity costlier in the second marketplace when the buyers have unveiled and validated the original quality.

Belghitar and Dixon noted an indication of a positive long-term relationship between starting returns and performance (2012). The other prevailing hypothetical statement, which refers to the long-term performance, is Ma and Shen (2003) said the prospect principle. The theory proposes that investors tend to invest in IPOs because investors are more likely than they really are to evaluate the possibility of good yields and, in exchange, it also undermines possibility for minimum returns.

A remaining part is based on the cited behavioral theories that seem to be a detail of the long-term poor performance shown by IPO stocks, theories, which the Ritter (1988) utters. The earning management theory, brackets of opportunity theory and the divergence of opinion statement are all elaborated.

2.3.2 The Earnings Management Hypothesis

To entice the investors, the organizations first issue managers are advised to pre-IPO window-dress financial statement in order to curtail the capital cost and probability of failure or uncertainty. Teoh et al. (1998) scrutinized relationship among the firms having IPO' long-term price performance and their relevant earning control and discovered that discretionary current accruals- income management measures- are substantial during IPO relative to non-issuing companies while advising managers would actively manipulate their concerned earning before the IPO.

The forecast for the impending profitability is recognized by the investors which are indicated after three years by the earning management. As sure, when they know about the true and practical worth of an organization or company, they must adapt their portfolio, which render the stock price, plunged (Teoh et al., 1998) (Teoh et al., 1998, p. 32).

Note further within the next three years, more income-managed issuers had lower stock market returns.' The above authors divided up the companies they examined into each four intervals, based on the assertiveness of their earnings management. The companies that were in the most violent quartile performed an average of 15 to 30 worse than companies in the least offensive quartile after three years.

2.3.3 The Windows of Opportunity Hypothesis

Aggarwal and Rivoli (1990), the share prices can hike unexpectedly as compared to the fair value after being overoptimistic, proposed the fads hypothesis. The one renowned example of this case was unveiled after 10 years of the publication of their story with unnecessary expenditure during the dotcom bubble in the internet firms.

Ritter in (1991) which is based on the hypothetical statement of Fad do the formulation of the window of opportunity. The manager may select a golden chance to publicly transform their business with them. The pertaining window can be considered as the outcome of good or ideal scenario of the market. The latter one advised that the managers tend to propose an IPO when the overall business or organization's scenario is good.

The explanations of Loughran and Ritter articulate that the scenario of hot time greatly higher IPO activity also called as IPO clusters. This unveils that firm proposes their IPO perform poorly relative to other firms during these types of markets. The hypothesis of market timing in Europe has not been professionally checked or scrutinized by any study or research unlike the US.

The bracket of hypothesis that deals with opportunity is same to the positivity hypothesis of the investors where the long-term underperformance at the time of IPO is rendered because of the substantial positivity and the confidence of investor as well.

Cornelli et al. (2006) analyzed 486 IPOs within Europe realized a cost reversal was observed in the long term only for stocks with high prices on the pre-IPO market (indicating optimism), thereby supporting the optimism hypothesis of the investors.

2.3.4 The Divergence of Opinion Hypothesis

Another fascinating theory is the one Miller (1977) proposed. He argues that the security demand is originated from the minority that holds the most positive perceptions about it in a market with little or no short selling (Miller, 1977, p. 16). Investors believe the difference arises from the confusion about the expected earnings. The initial return will be decided by valuing the party of hopeful buyers. Nevertheless, these previously divergent views will continue to converge in the long term as more and more knowledge becomes accessible. This conjunction results in a fall in stock costs which explains the poor performance of IPO stocks. As in other theories, researchers are trying to find facts to support or oppose the motion. Gao et al. (2006) looked at 4,057 U.S. IPOs and found an unwanted association between long-term irregular post-IPO revenues and early return from the market transience, a proxy for a difference of opinion. In IPO, short-selling has been increasingly bounded than in non-IPO markets, this phenomenon is more pronounced. Researchers realized that the earlier is positively related to the pace of reducing the divergence views when latest data becomes accessible to public. Therefore, these observations are consistent with Miller's (1977) hypothesis.

Chapter 3

THE CASABLANCA STOCK EXCHANGE AND THE IPO PROCESS

3.1 An Overview of Casablanca Stock Exchange

Working under the supervision of the ministry of economy and finance, the Casablanca Stock Exchange is a public limited company having board of directors. Being established in 1929, it operates within the framework of specifications and obeys rules defined in general regulations. Formerly it was known as "Office de Compensation des Valeurs Mobilières" i.e. office for transferable securities clearing. Like all world stock exchanges, the Casablanca Stock Exchange is a place of trade, a regulated and structured market, where professionals meet who sell and buy shares, called shares, at a fixed price, called trade rates.

The importance of the securities market is on the rise along with implementation of exchange controls, encouraged the authorities to strengthen the operation and regulation of the stock exchange's organization (Salnazaryan, & Aramyan, 2017). However, due to market organizational failures, the attractiveness to security market is on the stack at a time when growing interest in stock exchange investment is shown by domestic investors. Given the aforementioned lack of interest by the domestic investors in security market, reforms in a well-organized legal and technical framework were undertaken in 1967. Thereafter, Morocco started structural adjustment program in 1986, which was completed in 1996 (Pfeifer, 1999).

The structural adjustment program helps the Kingdom to consolidate its fundamental balances and ease their debt and inflation problems (Pfeifer, 1999). Since 1993, the Casablanca Stock Exchange has lived a second youth following the promulgation of a body of law on financial market reform and the establishment of regulatory and technological structures that are central to its emergence. This reform has substantially modernized the market through the following initiative:

- With the objective to ensure the protection of savings, the creation of the council for the ethics of securities. Started security investment
- In order to make possible authorize transaction on listed securities, some specialized intermediaries and stock exchange companies were approved.
- For risk diversification, the initiative undertaken includes collective investments in transferable securities as well as financial intermediaries for the management of securities portfolios.

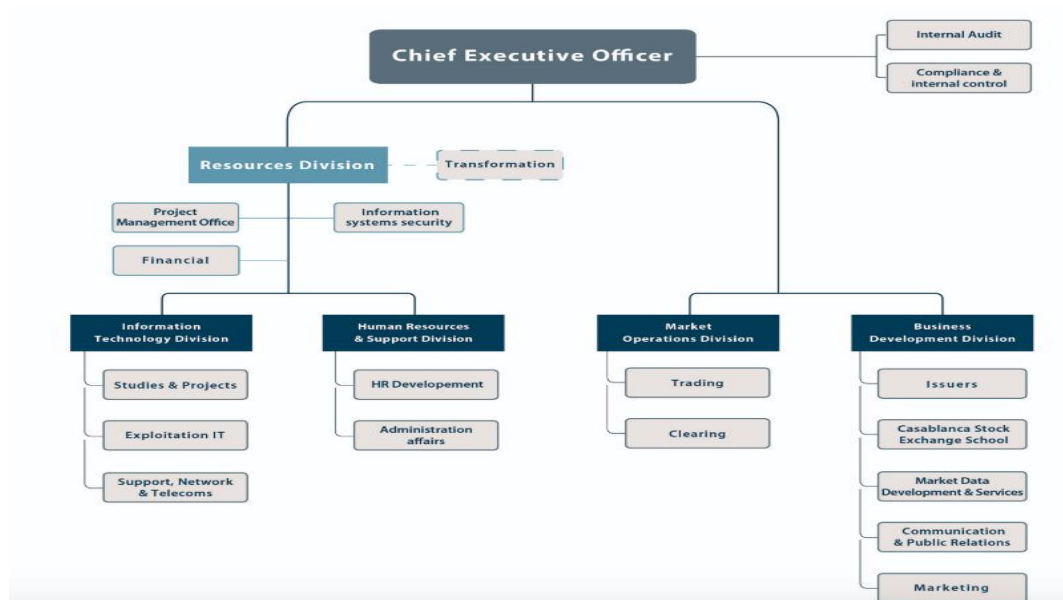


Figure 1: Organizational Chart.
Source: The Casablanca S.E.

The chief executive officer (CEO) is responsible for the management of the Casablanca Stock Exchange's operations under the oversight of the supervisory board. Moreover, he is deliberating on any related matters relating to its legal, regulatory, and legislative obligations. The CEO perform the following activities:

- Implement the strategic guidelines of the Casablanca Stock Exchange and present them as a whole, at least once a year, to the supervisory board.
- Review all questions that may be referred to it by the president. The chairman assesses, on a case-by-case basis, the advisability of a request to the management board to deliberate on a transaction.
- Examine the findings from various sources.
- Establish a quarterly management report to the attention of the supervisory board in compliance with the legislation.
- Stop annual announcements of synthesis, such as longs by law.
- Ensures the quality of the information provided to the supervisory board and to the public.

The Information technology department is responsible for managing the Casablanca Stock Exchange information system, thus ensuring its stability, sustainability, and performance.

The directorate's primary roles are as follows:

- Manage and track production process efficiently.
- Ensure whether the operating system is working properly.
- Guarantee information system accuracy (data & processing).

- Establish the necessary monitoring and maintenance procedures (hardware and software).
- Develop and maintain the intelligence system.
- Design, build and implement IT architecture.
- Organize operating device operation and reporting procedures.
- Promoting the use of computing.
- Ensure technical vigilance.

The information management department is divided into three departments:

- Production department, responsible for the management and development of the production and distribution system of the stock exchange.
- System service, supposed to manage, administer and operate the electronic quotation system and other current and future systems.
- Support service, responsible for management, administration and operation of telecommunication networks (LAN local network, WAN remote network, and Internet).

The mission of market management is a business management and market growth. Its goal is to meet the needs of various market stakeholders. The attributions of this department concern the steering of the trading sessions, the management of the central counterpart, the administrative management of the quotation, the dissemination of official statistics and indices, as well as the relationship with the members of the market and the regulations (Wysocki et al., 2001).

The business development is in charge of the institution's marketing and, as such, must promote the activities of the stock exchange, while at the same time ensuring the

development and management of human and logistic resources. The development department is structured around two services, which are marketing department and general affairs.

3.2 Organization of the Casablanca Stock Exchange

There are two main markets in Casablanca Stock Exchange i.e. the central market and the block market. The solution to the imperfection in the previous organization of the market i.e. direct sales market and auction market is given by the present architecture of the Casablanca Stock Exchange, combined with the new electronic quotation system. Today, a "general regulation" established by the Casablanca Stock Exchange and published by the Minister of Finance's decree defines the rules for the functioning of the markets.

3.2.1 The Central Market

The central market has a preliminary part in the operation of the stock market insofar as the price of shares is decided in the central market as a result of the conflict of purchase and sale orders. However, equilibrium price is determined through centralized single order book comes from all stock exchange orders and confront supply and demand. Besides block transactions, all transaction in a security listed on the Casablanca Stock Exchange must pass through the central market. To summarize the Casablanca Stock Exchange is a centralized market driven by orders as opposed to the market-driven by prices.

3.2.2 The Block Markets

The block market is an over-the-counter market where large blocks of securities are traded underprice conditions from the central market. When market sheet is presented, there is lack of opposite party in a financial transaction (Grossman, & Miller, 1988). Therefore, some orders from institutional investors, cannot be fully executed on the

central market. Consequently, for immediate trading of such orders from the market, the Casablanca Stock Exchange has set up a block market. Block market operations has the following characteristics:

1. Carry on a number of securities equal to the Minimum Size of Blocks (MSB), defined by the Casablanca Stock Exchange for each security by reference to the historical volume of transactions.
2. For securities quoted on a continuous basis, be concluded at a price included in the Weighted Average Price Range (WAR) from the market sheet, each value of which is calculated automatically in real-time throughout the session continuously.
3. For securities quoted at fixing and multi-fixing, be concluded at the price quoted during the trading session (opening price) reduced or increased by a maximum margin of 1%.

3.3 The IPO Process in the Casablanca Stock Market

An IPO is an exceptional event in the history of corporate society. To complete this crucial move involves careful planning and commitment on the part of the companies in order to give themselves all the resources to succeed in this activity, both financially and in terms of bad reputation (Brau & Fawcett, 2006).

3.3.1 Legal Preparation of an IPO

Based on the compartment it decides to incorporate, the organization must follow a number of criteria and must then, respect others at all times in order to stay there. The terms and conditions of an IPO consist of the following:

- Admission to the main market (1st Compartment).

This market is targeted mainly (though not exclusively) at large and medium-sized businesses from all industries, concession firms, or public service managers.

- Introductory criteria

Companies wishing to enter this market must:

- Issue at least 75 MDH.
- Have minimum equity capital of MAD 50 million.
- Distribute at least 250,000 shares to the public.
- Consolidate their accounts for companies with subsidiaries.
- Have had the last 3 years certified.
- Admission to the development market (2nd Compartment).

This market, which has higher conditions of access, targets in particular mature and medium-sized companies in all sectors.

- Introductory criteria

To access this market, companies must:

- Issue at least 25 MDH.
- Have achieved a minimum turnover of MAD 50 million.
- Distribute at least 100,000 shares to the public.
- Have had the last 2 years certified.
- Conclude a one-year securities management agreement with a brokerage firm.
- Admission to the growth market (3rd Compartment).

The growth market targets companies, even the youngest, with high development potential, which need to finance their growth.

- Introductory criteria

To access the growth market, companies must:

- Issue at least 10 MDH.
- Distribute at least 30,000 shares to the public.
- Have had the last exercise certified.
- Conclude a 3-year facilitation agreement with a brokerage firm.

In the particular case of companies which are part of the third compartment, the majority shareholders must undertake to maintain this majority for 3 years.

3.3.2 Conditions of Stay

The conditions of stay below must be observed at all times to maintain a value in the corresponding compartment.

- Main Market (1st Compartment)
 - Have a minimum capital of 50 MDH;
 - Have a minimum of 250,000 shares in circulation (floating).
- Development market (2nd Compartment)
 - The turnover for the last financial year must be at least equal to MAD 50 million;
 - Have a minimum of 100,000 shares in circulation (floating).
- Growth market (3rd Compartment)
 - Have a minimum of 30,000 shares in circulation (floating).

3.3.3 Preliminary Stage and the Choice of Obligatory Intermediaries

This is an important phase in the IPO process, it is the preparation of the operation's fundamental bases. First of all, it must continue with the shareholders' agreement on the proposed launch. The second step consists of selecting the financial intermediaries (investment banks, brokerage firms, legal and financial advisers, etc.) which will

support the company during all stages of the operation and in the drafting of the prospectus. Thus, with the aid of selected intermediaries, the organization will start the procedure by, likely, patrimonial arrangements. It must also arrange for the control of capital (holding, shareholders agreement, etc.), consolidate its accounts, reorganize itself on the legal, financial, and statutory levels, etc. It will also be used to determine the amount of the transaction, to determine the method of introduction (increase or transfer of a share of the capital) and the desired date of introduction. This phase lasts from an average of 6 months to one year, depending on the arrangements to be made by the company (Li & Masulis, 2005).

3.3.4 Processing of the Documentation Offered by the Ethics Council for Securities

The ethics council for securities known as Conseil Déontologique des Valeurs Mobilières (CDVM), as a market watchdog, is the first entity to receive an IPO application from the company. The latter contains multiple documents including a prospectus (Dalton et al., 2003).

The file must be submitted to the securities ethics council at least 2 months before the scheduled date of introduction. The Casablanca Stock Exchange must also be notified at the same time period, in order to reserve a date on the schedule of planned financial transactions, to assist in the selection of the first listing procedure, to issue the notice of approval of the transaction, and to set the final schedule of the transaction.

3.3.5 The Admission Decision

The ethics council for securities is responsible for assessing the application and ensuring that it complies with current rules. Three to four weeks on average before the scheduled date of introduction, the Casablanca Stock Exchange ensures compliance

with the conditions of entry to one of the 3 stock exchanges following the regulatory requirements, reviews the terms of incorporation and timing of the trade, and gives notice of approval. If objected, the securities ethics council shall issue a visa on the information note.

3.3.6 The Offering and Placement of Securities

After confirmation of the transaction file, the financial advisor designates the investment syndicate responsible for placing the company's shares with the public. The Casablanca Stock Exchange, on the day of the first listing, publishes the technical results of the IPO by notice in the stock exchange bulletin.

The selection group consists of:

- A leader in the picture of an orchestra leader.
- Brokerage firms and/or banks designated to collect subscriptions. Members of the investment group receive subscription bulletins during the subscription time.

The Casablanca Stock Exchange centralizes the subscriptions provided by the members of the placement syndicate and prepares the technical results which are made public. These findings describe the transaction in a thorough and informative manner, including the number of subscribers by order form, by subscriber group, by nationality and by country.

3.3.7 Listing of Securities

This is the company's actual listing, also known as the first day of listing. The company is officially listed from that moment on. It has a "Ticket," a short name for the organization, and a special code of interest. After the effective introduction of the firm,

the Casablanca Stock Exchange ensures the organization of the securities listing and the management of securities transactions.

3.3.8 The First Quote

The Casablanca Stock Exchange publishes the IPO 's technical results by notice in the stock exchange bulletin on the day of the first listing. The four first listing procedures according to the general stock exchange regulations includes, Firm Price Offer (FPO), Minimum Price Offer (MPO), Open Price Offer (OPO) and direct quotation. It is the issuer who chooses the first listing procedure in consultation with his advisor which best meets his objectives.

The firm price offer procedure is to make a number of securities available to the public by setting a firm price. Orders submitted by subscribers are compulsory at this price. While, the allocation of securities is based on a relationship between supply and demand and on a system of allocation previously stated by the managing company. The management of the stock market is granted to the Casablanca Stock Exchange, in the application of specifications approved by the minister in charge of finance).

The minimum price offer is to make a number of shares available to the public by setting a minimum selling price. The subscribers are free to submit their orders at this price or at a higher price.

The open price offer, however, make available offer to the public quantity of securities by setting a price range. The subscribers then present their orders at a budget range including the limits.

Introduction of security using the direct listing procedure is carried out under the trading conditions usually practiced on the market. The posting of a notice by the managing firm in the stock exchange bulletin is made at least five days before the first listing date. This publication announces the implementation of security according to the direct quotation process and specifies the introduction price as well as the method of listing form.

3.4 Advantages of Subscribing to the Stock Exchange

Being listed on the stock exchange provides advantages on several fronts. The company benefits in the same way as its shareholders, employees and partners. The company in general enjoy the following benefits.

3.4.1 Diversification of Funding Sources

Access to the new funding sources is the very first advantage of going public, no matter whatever the reasons is that might push shareholders to do so. Thus, a company that wishes to finance development projects, for example, places securities on the market, in exchange for which the new shareholders bring the capital needed. It thus diversifies its sources of financing and gives itself the means to grab the opportunities that arise.

3.4.2 Obtaining a Leadership Tag and Strengthening Notoriety

The company for being listed in the stock market and the communication it entails gives it permanent visibility, which is one of the most effective forms of advertising. A listed company is also one of the best, it is transparent, its accounts are certified, which is in itself a quality label that enhances its image capital, strengthens its leadership and its notoriety. All these gives the company greater credibility towards its customers, suppliers, financial partners and employees.

3.4.3 The Valorization of Human Resources

The majority of companies that go public reserve part of the transaction for their employees and thus give them the opportunity to become shareholders. This incentive system enables unabated mobilization and motivation of human resources. This also helps the organization to identify and retain the people important to its management in good control. A listed business typically has less difficulty recruiting high-level workers.

3.4.4 Shareholder Satisfaction

The regular quotation of the value allows shareholders to enhance their assets at any time. It also promotes liquidity of capital, which allows them to easily sell their shares on the stock market and draw attention of important business partners. The difference between actual and realized capital gains is another source of shareholder satisfaction.

3.4.5 Sustainability and Safeguarding of Corporate Control

The IPO also facilitates the sustainability of the business, especially in the case of family companies when the issue of succession arises. Also, it protects the control of the company through a limited opening of the capital or the use of adequate financial products such as shares with priority dividends. Eventually, the IPO brings about a change in the company's "corporate governance" system which involves transparency of accounts and the establishment of modern systems of internal control. These changes consolidate the strength of the company in the long term.

3.4.6 The Benefit of the Tax Exemption

Since 2001, a tax exemption of 25% to 50% of corporate tax has been granted to companies that go public. The duration of this exemption is 3 consecutive years, starting from the fiscal year of IPOs and thereafter.

3.4.7 Exclusive SME Offer

Today, the Casablanca Stock Exchange reserves for SMEs an exclusive offer by granting those who want to go public an amount of 500,000.00 Dhs to cover their costs.

Chapter 4

THE MAROC TELECOM'S IPO: THE SHORT RUN AND THE LONG RUN PERFORMANCE ANALYSIS

4.1 Company Background and its Unique IPO

The Moroccan telecommunications industry is known as one of the African region's most advanced telecommunications industries and is one of the country's most advanced economic levers (Malouche & Partow, 2019). The Moroccan telecom industry has been dominated by Maroc Telecom. After the division of the National Postal and Telecommunications Bureau, it has become the principal telecommunications firm in Morocco founded on February 3, 1998. The Maroc Telecom, also known as Itissalat Al-Maghrib (IAM), is a historical operator and to this day, it is the leading global telecommunications operator in Morocco (Malouch & Partow, 2019).

Maroc Telecom is organized in general departments around its business lines and services. Maroc Telecom ensures a national presence through a decentralized organization with eight regional offices in Rabat, Casablanca, Marrakech, Agadir, Settat, Fez, Tangier and Wajda, which guarantee responsiveness and proximity to its customers and partners with 220 offices in all of the Moroccan territory.

There are two market divisions structured in Maroc Telecom. The Mobile Segment offers individuals and companies in Morocco with mobile telecommunication services

(subscriptions, rate plans, prepaid cards, and handsets). As of June 30, 2004, Maroc Telecom had 5.52 million mobile customers and operates a GSM network covering nearly the whole population via more than 3,500 base stations. The Fixed-line and Internet division provides private, technical and business clients in Morocco with fixed-line telephone services, Internet services and data access services. It also provides public telephony services via its own public telephone network and through an independent tele-store network. Maroc Telecom provides other national and international telecommunications operators with interconnection services. The network consists of over 6,500 kilometers of intercity fiber optic cable and over 3,200 kilometers of urban fiber optic cable, fully digitized for switching. (Ibrahim, K. 2009).

Maroc Telecom had launched its IPO process on the Casablanca market after its shares have also been admitted to the primary Euronext market of the Paris Stock Exchange. Subsequent to receiving the approval (visa) issued by the Morocco's Securities Ethics Council on its preliminary information note on November 6, 2004, Maroc Telecom had published its IPO prospectus on November 21, 2004 (visa n°VI/EM/ 022/2004/D). The IPO, for a maximum of MAD 8,940 million, included an offer in Morocco intended for individuals; a global placement with institutional investors in Morocco and abroad; an offer in Morocco reserved for Maroc Telecom employees.

The Moroccan offer was launched on November 22, 2004. It closed for individuals on December 3, and for institutions, on December 7 (Moroccan and international). The price was set on December 8 after the close of subscriptions scheduled for the evening of December 3. The first listing was on the Casablanca Stock Exchange and then, on the primary Euronext market of the Paris Stock Exchange on December 13, 2004.

The main features of the Moroccan offer are as follows:

- Terms of the transaction: Deal Up to 130,985,210 shares Offer
- Selling shareholder: The Kingdom of Morocco
- Distribution: Offer to individuals in Morocco/ Moroccan and international institutional offer
- Listing Places: Casablanca Stock Exchange and Euronext Paris
- Over-allotment option: 17,085,027 shares
- Indicative price range: 54.60-68.25 dirhams per share.

Calendar of Operations:

- November 21, 2004: Approval (Visa) from the Ethics Council for Securities
- November 22, 2004: Opening of the offer in Morocco and internationally
- December 3, 2004: Close of the deal to private individuals
- December 7,2004: Close of the institutional offer
- December 8, 2004: Pricing
- December 13, 2004: First trading day.

This study uses the methodology found in studies examining the effect of an event on firm performance. In this context, the day when the Maroc Telecom was listed on the Casablanca Stock Exchange (December 13, 2004) is considered as the event. The primary goal of an event study is to quantify the abnormal or unexpected effect on securities' prices due to an economic, political or corporate event as well as to understand the short run and long run performance.

The aim is to quantify the IPO performance of Maroc Telecom in the short run as well as in long run by using the event study methodology to explore stock returns around the IPO announcement date. The approach of event study examines the behavior of firm stock price (i.e., event specific abnormal returns) around corporate or economic events such as IPO announcements (Brown, & Warner, 1985). In this study, for the short run, the sample period covers the period from 13/12/2004 to 29/08/2005, and the period from 13/12/2004 to 13/12/2019 for the long run. It should be noted again that the first day of trading in the Casablanca Stock Market is 13/12/2004.

Our data contain daily adjusted stock price of Maroc Telecom listed in the Casablanca Stock Exchange and contain the MADEX market index as the benchmark which is the Morocco most active share index. The data is obtained from the Casablanca Stock Exchange website and Eikon DataStream. The short run sample consists of 180 observations covering the period 2004-2005 (i.e., one year), and the long-term sample consists of 3,735 observations covering the period 2004-2019 (i.e., fifteen years).

4.2.1 The Short Run Performance Methodology

The first task is to determine the event date (i.e., first trading of IPO shares) and then, the event period around the event date, also known as the event window. We follow the method described in MacKinlay (1997) to determine our event and the event window. The IPO announcement day is set as $t=0$ and the days after are defined positively as there are no observable trading prices before the first day trading of the IPO. For the short run performance analysis, the sample's daily returns are computed over two separate periods. The event window, from $t=0$ to $t=20$, is the first period. The second performance from $t=21$ to $t=180$ is used as the estimation period to predict the expected stock performance in the event window. The following formula is used to compute the daily stock return and the daily market index return.

$$R_{i,t} = \frac{\ln(P_{i,t})}{\ln(P_{i,t-1})} \quad (1)$$

where $P_{i,t}$ is the adjusted price of stock i at date t , and $P_{i,t-1}$ is the adjusted price of stock i at date $t - 1$. Similarly, the market index return is calculated as follows:

$$R_{m,t} = \frac{\ln(P_{m,t})}{\ln(P_{m,t-1})} \quad (2)$$

where $P_{m,t}$ is the closing price of the benchmark market index at date t , and $P_{m,t-1}$ is the closing price at date $t - 1$.

In order to calculate the event specific IPO abnormal returns, two traditional methods are used, namely the market adjusted and the market model abnormal returns. The market adjusted abnormal return on day t can be calculated by taking the return of stock price ($R_{i,t}$) minus the return of the market index ($R_{m,t}$) which is the MADEX index return. The calculation is shown as for day t :

$$AR_t = R_{i,t} - R_{m,t} \quad (3)$$

In this study, we also use the market model abnormal return method to calculate the abnormal returns allowing the abnormal returns to be adjusted for stock's beta risk. However, the market model implies that the market return and the stock return have a consistent linear relationship. In order to estimate the market model parameters (i.e., α and β) over the estimation window period, the following regression equation is used:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \quad (4)$$

where $R_{i,t}$ is the security i return on day t and $R_{m,t}$ is the market index on day t , while $\varepsilon_{i,t}$ is the white noise error term. The α and β are the parameters of the market model where α is a constant term that calculates the part of the normal return which is independent of market performance, whereas β is the systemic risk for stock. The abnormal return ($AR_{ri,t}$) for the stock using the market model is given by:

$$AR_{ri,t} = R_{i,t} - (\alpha_i + \beta_i \times R_{m,t}) \quad (5)$$

where $AR_{ri,t}$ is the abnormal return on day t and $R_{i,t}$ is the initial return on day t . The α and β are the parameters of the market model, and $R_{m,t}$ is the market index on day t .

Lyon, Barber and Tsai (1999) argued that the cumulative abnormal return (CAR) approach is preferred if the goal is to calculate whether the sample consistently receives abnormal returns continuously. The CAR method assumes that a portfolio is readjusted in each cycle (i.e., in our case, every day) and then calculated by summing the abnormal returns of the respective firm in the event window over $(0, +T)$ time period. The calculation is presented as follows:

$$CAR(0, t) = AR_{i,0} + \dots + AR_{i,t} \quad (6)$$

To detect the statistical significance of the abnormal return generated by a stock's IPO announcement, the t-test is used. It is for a given performance indicator and compared to its expected distribution under the null hypothesis that abnormal performance equals to zero. If the test statistic reaches the critical value at the conventional significance levels of 10%, 5% and 1%, the null hypothesis is rejected. The t-test statistic for the both daily markets adjusted and market model abnormal returns (AR_t) are calculated as follows:

$$t\text{-statistic} = \frac{AR_t}{S(AR)} \quad (7)$$

where $S(AR)$ is the standard deviation of the abnormal returns during the estimation period/window. Similarly, the t-test statistic for CAR (t_1, t_2) is calculated as follows:

$$t = \frac{CAR_{t_1,t_2}}{S(AR) \times \sqrt{T}} \quad (8)$$

where $S(AR)$ is defined as standard deviation of the AR during the estimation period; and \sqrt{T} is the length of the event window that we are investigating and is calculated as $T = t_2 - t_1 + 1$.

4.2.2 The Long Run Performance Methodology

The measurements of abnormal returns and the statistical tests used by analytical researchers to identify long-run abnormal stock returns have major variations (Barber & Lyon, 1997). What these studies have in common, however, is that the initial step is the same as the short-term event analysis which involves determining the date of the event. To measure the post-event long run abnormal returns, studies that do similar analysis used both the cumulative abnormal return (CAR) approach and the wealth relative indicator (WR_{car}) approach together. According to Fama (1998), the daily abnormal returns using the market adjusted can be summed up as follows:

$$CAR_{t_1,t_2} = \sum_{t_1}^{t_2} (R_{i,t} - R_{m,t}) \quad (9)$$

where $R_{i,t}$ is the return of a sample firm i at time t , and $R_{m,t}$ is the return of the benchmark index at time t , where CAR_{it} is the cumulative abnormal return for (t_1, t_2) period. It should be noted that for long run performance analysis, the market adjusted abnormal returns are preferred due to the fact that the systematic risk, namely β , fluctuates in the long run and tend to mean revert to the value of 1 which is the beta of the benchmark index.

A t-test is carried out to test the null hypothesis that cumulative abnormal return for (t_1, t_2) period is equivalent to 0. The corresponding t-test statistic for CAR (t_1, t_2) is calculated as follows:

$$t = \frac{CAR_{t_1,t_2}}{S(AR) * \sqrt{T}} \quad (10)$$

where $S(AR)$ is defined as standard deviation of the AR during the estimation period; and \sqrt{T} is the length of the event window that we are investigating and is calculated as $T = t_2 - t_1 + 1$.

The WR_{car} ratio returns provides a way of tracking the response of the market to the cumulative value impact of the proposed event. It is calculated as follows:

$$WRCAR(t1, t2) = \frac{1 + (\text{Average } \sum_{t_1}^{t_2} R_{i,t})}{1 + (\text{Average } \sum_{t_1}^{t_2} R_{m,t})} \quad (11)$$

where $WRCAR$ compares the average return over the event window (t_1, t_2) for the event to the average return of the market index for the same period. If the ratio is greater than 1, it indicates outperformance relative to the market index as the benchmark whereas the ratio is less than 1, it indicates underperformance relative to the market index as the benchmark.

4.3 The Return Performance Results of Maroc Telecom

The detailed description of the research results will be described in this section. First, the short run results will be explained and then, the long run results will be discussed.

4.3.1 Short Run Performance Results

The market adjusted abnormal return (MAARs) for the event window period (+0, +20) are shown in Table 1. The table provides the MAAR for each day in the event window along with its t-statistics. Similarly, the results of the cumulative abnormal return (CAR) using the MAARs are provided in Table 2. In Table 1, for the first three trading days, the market reaction findings show that there is a statistically significant positive abnormal return on the first trading day (Day 0: 2.72%, t-stat: 3.83) and the two following days (Day 1: 4.79%, t-stat: -6.77; Day 2: 4.60%, t-stat: 6.50) revealing that the first-time trading of Maroc Telecom on the Casablanca Stock Exchange is perceived positively by the market and created positive abnormal returns on the first

three trading days. Similarly, we also find statistically significant positive abnormal returns on Day 5, 7 and 12 ((Day 5: 1.47 percent, t-stat: 2.08; Day 7: 2.47 percent, t-stat: 3.49; Day 12: 2.28 percent, t-stat: 3.22). We only detect one statistically significant negative abnormal return on Day 9 ((Day 9: -3.82 percent, t-stat: -5.41). Therefore, it is beneficial to look at the cumulative abnormal returns during the event window as shown in Table 2.

Table 1: Results of market adjusted return

Event day	Market Adjusted Abnormal Return	T-stat
0	0.027164681***	3.839159711
1	0.047923742***	6.77301899
2	0.046036456***	6.506290603
3	0.006626897	0.936573285
4	0.002758624	0.389873788
5	0.014707732**	2.078630434
6	0.007507999	1.061098648
7	0.024710842***	3.492360972
8	0.003410613	0.482018854
9	-0.038249185***	-5.40572266
10	-0.001687056	-0.23843015
11	-0.006191291	-0.87500955
12	0.022840614***	3.228043344
13	0.00747852	1.056932506
14	0.00759909	1.073972572
15	0.007080079	1.000621118
16	-0.003592896	-0.50778071
17	0.003916943	0.55357805
18	-0.008038736	-1.13610734
19	-0.009190936	-1.29894673
20	0.004205634	0.594378408

Note: * Shows 10 percent significance, ** shows 5 percent significance, whereas *** shows 1 percent significance.

Cumulative abnormal returns of the adjusted market return are shown in Table 2. There was a desirable market reaction to the cumulative abnormal return trading day (0, +1) as it hit a statistically relevant 1% level with a value of 0.07 (t-stat: 7.50). In addition,

the days (0, +3) had a statistically significant positive abnormal return with an increase of the level of CAR to reach a value of 0.12 at alpha= 1% (t-stat: 9.02), while an outperformance for the days (0, +5) and (0, +10) was seen due to the obvious positive return with a 1% significance level (t-stat: 8.37, t-stat: 6.00) while illustrating this by the increase in the values of CAR which reach the level of 0.14. After this, we also get the days (0, +15), (0, +17), (0, +19) that display a positive level of cumulative abnormal returns with at 1% significance level (t-stat: 6.34, t-stat: 5.99, t-stat: 5.15) with high level in its values. Overall, the cumulative abnormal return of the MAAR and MMAR results in Tables 2 and 4 very close to each other, and as we can notice all the values are significant at 1%.

Table 2: Results of cumulative abnormal return

	CAR (0, +1)	CAR (0, +3)	CAR (0, +5)	CAR (0, +10)	CAR (0, +15)	CAR (0, +17)	CAR (0, +20)
0							
1	0.0750***						
3		0.1277***					
5			0.1452***				
10				0.1409***			
15					0.1797***		
17 20						0.1800***	0.1670***

Note: * Shows 10 percent significance, ** shows 5 percent significance, whereas *** shows 1 percent significance.

Table 3 presents results of the market model abnormal return (MMAR) for the period (0, +20) corresponding to the announcement day (Day 0) and Table 4 shows the cumulative abnormal returns (CAR) using the MMARs. The market reaction findings suggest that there are statistically significant positive MMARs on the announcement day (Day 0: 3.82, t-stat: 5.76) and the two following days (Day 1: 5.17 percent, t-stat: 7.80; Day 2: 4.47 percent, t-stat: 6.74). Similarly, we also find statistically significant

positive abnormal returns on Day 5, 7, 12 and 14 (Day 5: 1.52 percent, t-stat: 2.29; Day 7: 2.77 percent, t-stat: 4.19; Day 12: 2.26 percent, t-stat: 3.41; Day 14: 1.12 percent, t-stat: 1.70). We only detect one statistically significant negative abnormal return on Day 9 ((Day 9: -3.75 percent, t-stat: -5.66). Overall, MAAR and MMAR give Tables 1 and 3 that are very close to each other. From here we can confirm the words of several researchers among them; Logue (1973) and Ibbotson (1975) that have articulated that the IPO shares appear to be underpriced when the pertaining business of the firm or organization go to the public.

As shown in Table 4, it is useful to look at the cumulative abnormal returns over the event window. Cumulative abnormal return trading days (0, +1) reached a statistically significant level of 1% (t-stat: 9.59), with a positive CAR level value of 0.08, as well as the days (0, +3) also had a statistically significant positive abnormal return at 1% level (t-stat: 10.59), with an increased level of CAR during these three days to reach a value of 0.14. Due to the positive return, the market reacted favorably on days (0, +5) and (0, +10) to reach a positive value of the level of CAR 0.16, with a significance level of 1% (t-stat: 9.99, t-stat: 7, 38). Eventually, we have the days (0, +15), (0, +17), (0, +19) that stretch high level values of cumulative abnormal return (0.20, 0.20, 0.19) which reveal an abnormal return positivity with a significance level of 1% (t-stat: 7.79, t-stat: 7.30, t-stat: 6.33).

Table 3: Results of market model return.

Event day	Market Model Return	T-stat
0	0.038166144 ***	5.7624549
1	0.051693217***	7.8048187
2	0.044700908***	6.749096
3	0.007155596	1.0803764
4	0.005204751	0.7858311
5	0.015190515**	2.293516
6	0.008213092	1.2400407
7	0.027736332***	4.1877263
8	0.002439969	0.3683949
9	-0.037481325***	-5.659059
10	-0.000784000	-0.118371
11	-0.004323543	-0.652783
12	0.022611422***	3.4139497
13	0.007563282	1.1419302
14	0.011245014*	1.6978107
15	0.007244747	1.0938367
16	-0.00583156	-0.880469
17	0.004404702	0.6650369
18	-0.008319324	-1.25608
19	-0.009697231	-1.464121
20	0.005001192	0.7550971

Note: * shows significance at 10%, ** shows significance at 5% while *** shows significance at 1%.

Table 4: CAR results from market model return

	CAR (0, +1)	CAR (0, +3)	CAR (0, +5)	CAR (0, +10)	CAR (0, +15)	CAR (0, +17)	CAR (0, +20)
0							
1	0.0898***						
3		0.1417***					
5			0.1621***				
10				0.1622***			
15					0.2065***		
17						0.2051***	
20							0.1921***

Note: * Shows 10 percent significance, ** shows 5 percent significance, whereas *** shows 1 percent significance.

As seen in Figure 2, a positive trend begins on Day 1 with a value of 0.07 until Day 2 and starts to fall down to a value of 0.15 on Day 6 which indicates an underperformance on those days, after this day it rises up to the eight-day with a value

of 0.18, then it drops down to Day 12, then the positive trend begins to rise up due to a favorable market reaction.

Additionally, the cumulative abnormal return of the market model for Figure 3 has a positive pattern from the announcement day with a value of 0.03 until day 9 and starts to fall to reach a value of 0.15 on day 11, then tends to rise, indicating a positive market reaction.

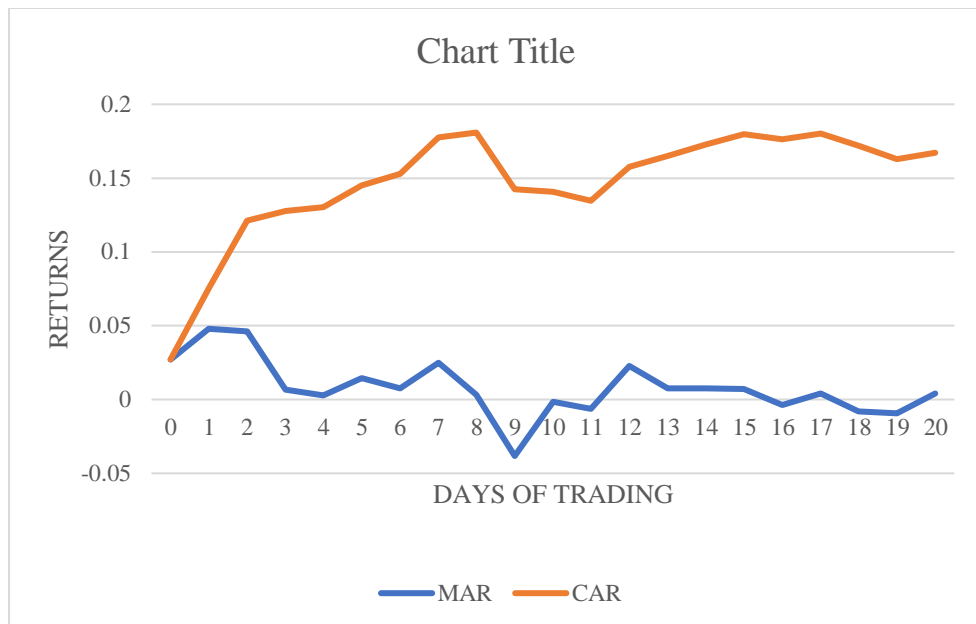


Figure 2: Graphical representation of MAR and CAR

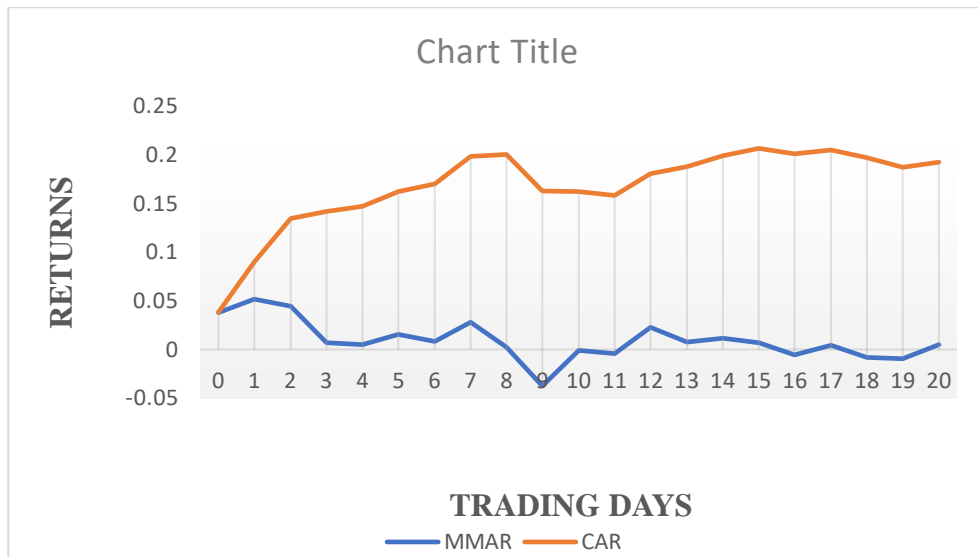


Figure 3: Graphical representation of MMAR and CAR

4.3.2 The Long Run Performance Results

Table 5 demonstrates the effect of long run CAR and WRcar performance and shows the CAR on different event windows ranging from (0, +1) year after the announcement of the introduction of Maroc telecom to the Casablanca Stock Exchange, up to (0, +19) years.

Concerning the first year (0, +1yr), it gives a positive cumulative abnormal return with a 1 percent significance level (t-stat: 7.01), indicating outperformance as well as WRcars proves these results showing an outperformance of 1.12, which is greater than 1. On the other hand, with the WRcar of 0.74, we have the years (0, +2yr) which show a statistically negative cumulative abnormal return that indicates an underperformance for this year. Furthermore, the years (0, +3) display an adverse reaction from the market due to the abnormal but statistically significant negative mean return at the 5% level (t-statistic: 2.19), thereby show an underperformance of a weighted average of less than 1 (WRcar= 0.69). In addition, we have the years (0, +4) and (0, +5) that reflect the same outcomes, statically negative abnormal returns at alpha= 1% and 5%,

with low performance as the WR_{car} is less than 1 ($WR_{car} = 0.92$, $WR_{car} = 0.78$). Finally, we have the years (0, +19) that reveal a statically insignificant negative abnormal return (t-stat= 1.34), and bad performance is also seen because the is the weighted average cumulative abnormal return is less than 1 ($WR_{car} = 0.75$). From this, over the five years, we can infer that there is underperformance, confirming these results by the findings of the scholar Ritter (1991) that has proposed that in the long-term, aftermarket, IPO's are greatly underperforming. Figure 3 of the cumulative abnormal return, which illustrates how the CAR fluctuates in relation to the market over the years, also confirms these findings.

Table 5: The long-run performance results of CAR and WR_{car}

	(0, +1yr)	(0, +2yr)	(0, +3yr)	(0, +4yr)	(0, +5yr)	(0, +19yr)
CAR	0.1231865	-0.236402635	-0.31370075	-0.05417497	-0.193005	-0.238292
WR_{car}	1.1214370	0.74045905	0.690875986	0.928952129	0.7825162	0.7558228
T-stat	7.0149028***	2.7796818***	2.1952463**	2.6581566***	2.0486980**	1.3404994

Note: * Shows 10 percent significance, ** shows 5 percent significance, whereas *** shows 1 percent significance.

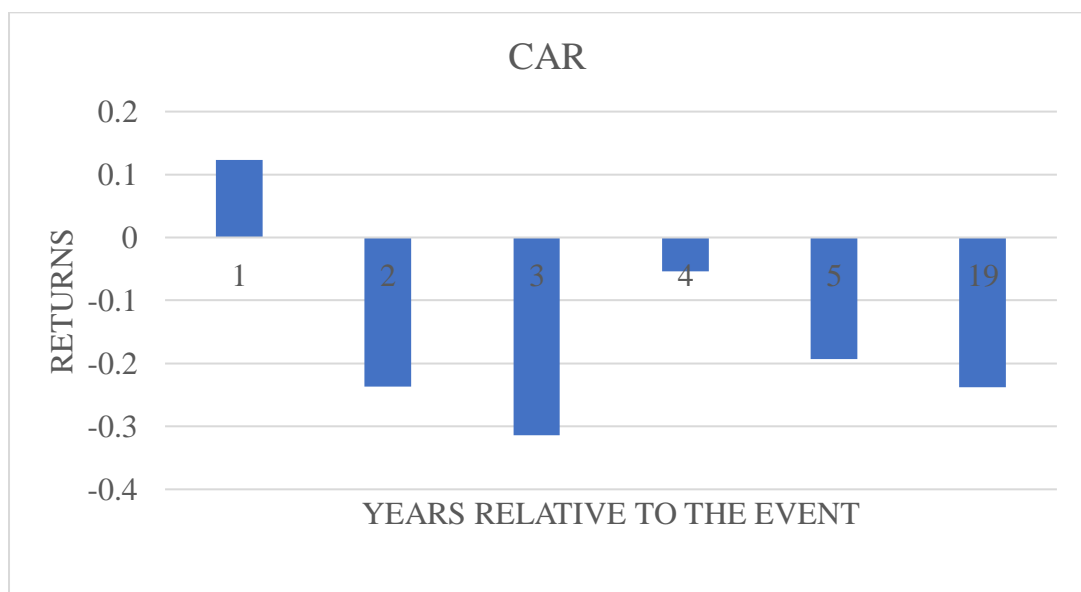


Figure 3: Graphical representation of the compounding CAR

The results of the cumulative abnormal return over five years (Year1, Year2) to (Year5, Year19) are listed in Table 6. (Year1, Year2) has a negative cumulative abnormal return with a significance level of 10% (t-stat= 1.81), as we can see in our table, indicating that there was no performance in this year relevant to the weighted average cumulative abnormal return as its value is less than 1 (WRcar= 0.38). For (Year 2, Year3) it expresses the same result with a significance level of 1% (t-stat= 4.33), and WRcar less than 1 which shows that even this year did not perform well. Whereas our comparable year (Year3, Year4) reports a statically significant positive abnormal return at alpha= 1 percent, indicating that this year was perceived favorably by the market, the WRcar confirms these findings, showing outperformance of stocks with a value of 1.47 that is more than 1. Finally, we have the years (Year4, Year 5) and (Year5, Year 19) that display a statically negative abnormal return at the 1% and 5% levels, which indicates that there was no performance in those years, as their WRcar is less than 1 (WRcar (Year4, Year 5) = 0.90, WRcar (Year5, Year 19) = 0.83). We can affirm these results from many scholars and researchers who have said that IPOs continue to perform poorly for the first five years after their release. Figure 4 supports these outputs, mainly showing the changes in cumulative abnormal performance over these years.

Table 6: The long-run performance results of CAR and WRcar

	(Y1, Y2)	(Y2, Y3)	(Y3, +Y4)	(Y4, Y5)	(Y5, Y19)
CAR	-0.357838012	-0.100550787	0.261819358	-0.140267804	-0.035973438
WRcar	0.384917638	0.729758126	1.472984305	0.900875536	0.837501078
T-stat	1.812776988*	4.336830049***	9.738457304***	5.826330984***	2.018368729**

Note: * Shows 10 percent significance, ** shows 5 percent significance, whereas *** shows 1 percent significance.

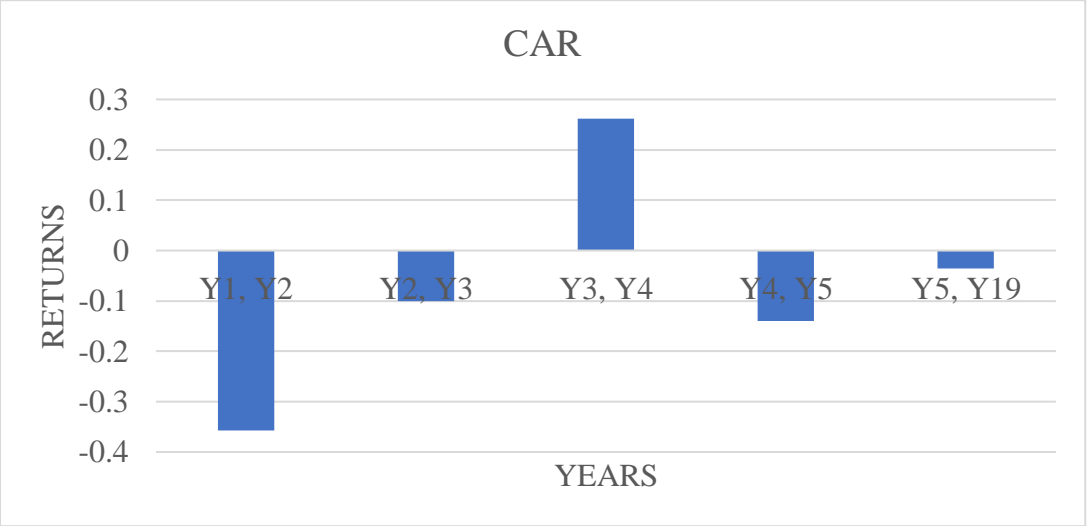


Figure 5: Cumulative abnormal returns over event time

Chapter 5

CONCLUSIONS

This study examines the long and short run abnormal returns for the IPO of Maroc telecommunication company between the period 2004 and 2019. In order to achieve this goal, we apply the event study on the daily return of the company in question for the period 2004 until 2019. In the previous chapter, we analyzed a well-specified and effective tool used to recognize abnormal performance while performing event studies, showing that short run IPO performance is positive, showing that abnormal performances are instigated by events occurring during the IPO process.

The results of the short-term Maroc telecom IPO suggest that this analysis showed significant short-run underpricing of IPOs on the Casablanca Stock Exchange from 2004 to 2005 using the adjusted market return and the market model to evaluate the short-run and long-run performances, with 180 trading days showing the greatest initial returns, with a successive increase in cumulative abnormal returns in the first 20 trading days as shown in our previous output. We may therefore infer that the market is responding favorably to the introduction of Maroc Telecom on the stock exchange.

These findings are obtained to be consistent with the previous study; that, if they purchase the share from the primary market and keep it for a time, investors will receive a substantial positive abnormal return. The study found that on a short-run

basis, the performance of this model is conducted in accordance with the market-adjusted model, describing that the Maroc telecom IPO gives investors positive abnormal returns on a short-run basis. In general, the underpricing of the IPO is primarily explained by the difference in the availability of information, well-informed, and under-informed, between the various investors. According to that, those shares with a fair minute value in issuance are purchased by the investors that are informed (Rock ,1986).

Initially, for the Maroc telecom IPO company, the research demonstrates evidence of the long-run returns, and also the relation among post-listing returns and initial underpricing. The long-run evidence indicates that in the following five years, IPOs underperform, with underperformance not restricted to any of the first five years after listing.

Providing two methods which are cumulative abnormal return (CAR) and weighted average abnormal return (WRcar) as price-value indicators, the long-term performance of the model IPO of maroc telecom is calculated for a period up to five years from the date of listing. We notice that the first trading year was outperforming, and this can be seen by the weighted cumulative abnormal return which exceeds 1, as well as the level of the cumulative abnormal return which was the only one to have a positive value (0.12). On the other hand, the remaining years survived a negative decline in their values as can be seen in the second year for example (-0.23) or, in other words, they underperformed during these years whatever the methodology considered.

With these findings, I can assert that there is a long-run underperformance of the Maroc telecom IPO company, which shows evidence of long-run returns. The long-

run statistics show that the IPO of Maroc telecom is underperforming in the following five years, with underperformance not restricted to any of the first five years after listing, and that this may be partly related to the long-term underperformance of IPOs mainly due to the fact that the high growth perceptions implied in the initial valuation on average do not happen (over-optimistic) Purnanandam and Swaminathan (2004).

To fulfill the conditions needed by the theory, it seems very important for long-term investors to be cautious before investing, namely to reduce the varying opinions that result in lower share prices and underperformance, and also over-optimism should also be reduced during hot emission periods in order not to negatively impact long-term performance, and in order to reduce the chance of failure of long term IPO managers must seek a window of opportunity to start an IPO, that shares would be highly-priced, which mitigates the cost of initial underpricing.

We can notice that the results of short-term underpricing and long-term underperformance coordinate with the empirical theories that we have found in several articles and journals in the Literature section.

Given the complexity of evaluating these theories without substantial temporal variance in market conditions. In addition, the weak long-term performance of this Maroc telecom IPO is abnormal in terms of market efficiency, indicating that more analytical and empirical research is required.

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