IPO LOCKUP EXPIRATION IN THE MIDDLE EAST AND NORTH AFRICA REGION

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Abstract

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This study examines stock price reaction to IPO lockup expiration in the Middle East and North Africa (MENA). A lockup is the period of time following an IPO during which founders and insiders are not allowed to sell their shares. Lockups in the MENA region are generally longer and more varied than those in the United States, providing an opportunity to study the relationship between their duration and market reaction. I test whether, as in the United States, there is an abnormal increase in trading volume and negative abnormal return around the unlock date, and find that contrary to the United States there is no noticeable reaction. I provide evidence that the difference in market reactions of U.S. and MENA companies is partly attributable to the laws in the MENA region, which dampens or more strongly restricts selling by insiders during the IPO period.

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1. Introduction

There is growing international interest in the Middle Eastern and North African (MENA) financial markets. The reputation of the region's markets is improving and attracting investors from around the world, thanks to recent alliances with international bourses, an increasing number of listed companies, reduced foreign ownership restrictions, and improved corporate governance practices ("Foreigners Flock to Mideast Markets," 2008). Up until 2008, the MENA region was the strongest initial public offering market in the world. It raised approximately US$13.2 billion through 53 IPOs in 10 different countries. The shares offered were oversubscribed at an average of 14.9 times, raising an average amount of US$148.1 billion (Global Investment House, 2009).

An important component of initial public offerings is the lockup: the period during which founders and owners are not allowed to sell their shares. The lockup begins on the first day that the IPO trades and lasts an average of six months. It is a post-IPO tool to control insiders from exploiting outside investors, helping to ensure that their interests are aligned (Kryzanowski and Liang, 2008).

Although lockups in the United States are voluntary and their duration mutually agreed upon by issuers and their underwriters, they are expected by potential investors (often very influential) who are willing to buy into the IPO. In most MENA countries lockups are required by law for periods ranging from six months to five years.

This study analyzes market reaction at lockup expiration in the MENA region with a comparison of its similarities and differences with that observed in the United States. Family ownership is common and venture backing rare in the MENA region,

whereas venture capitalist is a mainstay of firms in the United States. A distinction is therefore made between family firms and non-family firms to determine whether they respond differently and influence the overall market reaction.

Research on IPOs in the United States finds depressed returns and increased trading volume upon lockup expiration, and this has been interpreted as the reaction of investors anxious that insiders may sell off their holdings (Field and Hanka, 2001). I find that MENA lockups expire without such a reaction and that, also unlike the United States, IPO underpricing is positively related to lockup duration (cf. Mohan and Chen, 2001; Brav and Gompers, 2003).

The paper is organized as follows: Section 2 reviews the literature on IPO underpricing, share lockups, venture capitalists, family firms, and describes the MENA region countries covered in the study and their respective lockup laws. Sections 3 discusses the data collection. Section 4 explores the different hypotheses tested and the methods used in the analyses. Section 5 reports and interprets the results. Section 6 summarizes and concludes the thesis.

2. Background

2.1 IPO Underpricing

An initial public offering refers to the first time that a firm's stock is offered to the public. The IPO is the firm's official transition from private to public status. In this process, firms create new shares, or founders offer to sell a certain percentage of their own

shares. These stocks are first sold on the primary market, and then on the listing date, on the secondary market.

Reasons for going public vary. The most obvious ones are to raise new capital, or to increase liquidity which will allow owners to convert easily their wealth into cash. Black and Gilson (1998) suggest that through the IPO, founders and owners regain control from venture capitalists who exit (as cited by Ritter and Welch, 2002, p.1798). On the other hand, Zingales (1995) argues that the IPO helps owners with selling prospects maximize their gains by creating a bargaining advantage through changes in the ownership structure. Specifically, a target company that is publicly traded has many shareholders other than the founders which will make it harder to potential acquirers to impose price concessions (as cited by Ritter and Welch, 2002, p.1798).

IPOs are underpriced. Between 1960 and 1969, shares sold in IPOs on the U.S. Stock exchanges witnessed an initial performance of 11.4 percent (Ibbotson, 1975). In the 1980s, Ritter (1984) found a first day mean return of 48.4 percent. These initial returns appear to change across time and industry. During the internet bubble, 1999-2000, mean return at the end of the first day of trading was 65 percent; it then dropped to 12 percent in 2001-2003 (Loughran and Ritter, 2004). Underpricing has been observed in Malaysia, the Netherlands, the United Kingdom, and Canada, among others, where the average return ranges from less than 10 percent to a high of 80 percent (Loughran, Ritter and Rydqvist, 1994).

There are a number of possible motives for underpricing an IPO. The quality of the firm at the IPO is reflected by the degree of underpricing. Welch (1989) suggests that

high quality firms undervalue their issued shares at IPO to eventually issue seasoned equity offerings (SEO) at a more reasonable price (as cited by Ritter and Welch, 2002, p.1803). Underpriced shares are typically oversubscribed[1] therefore their allocation is decided by issuers. Brennan and Franks (1997) explain IPO underpricing as a way to reduces monitoring because issuers will discriminate large applicants in favor of small ones. They also find a negative relation between the degree of underpricing and the size of large blocks after the IPO thus a negative relation between the degree of underpricing and monitoring (Brennan and Franks, 1997). In contrast, Stoughton and Zechner (1998) believe that IPO underpricing will attract large investors because during the negotiation process, issuers will not be the ones with the upper-hand thus giving better treatment to potential blockholders. Accordingly, the presence of large investors will lead to more monitoring. Lastly, underpricing the IPO could be seen as a substitute for marketing expenditures. Habib and Ljungqvist (2001) found that one dollar invested in promoting the firm increases the offer price by one dollar. Furthermore, as conjectured by Loughran and Ritter (1999), the money left on the table is not as important as direct costs (cited by Habib and Ljungqvist, 2001, p.455). This means that issuer would prefer to underprice the IPO rather than having to pay for the firm's promotion.

2.2 Lockups

Once a firm is publicly listed, owners and founders can sell their shares more easily, and at a strategic time — the first trading day. This is why share lockup agreement

[1] An issue is considered to be oversubscribed when the demand for a stock before its official listing exceeds the number of shares issued or supplied. This situation occurs when the issue is underpriced or in great demand due to favorable growth prospects (www.zawya.com).

features in most IPOs, preventing, as Bartlett(1995) argues, founders and owners from trading in their shares and avoiding an increase in supply that might depress the firm's value (as cited Brav and Gompers, 2003, p.3). The agreement prohibits insiders[2] from selling any of their shares for a specific period starting on the listing date (Field and Hanka, 2001). The lockup is a device that signals to the public a common interest between insiders and new shareholders (Ofek and Richardson, 2000). It is therefore a "form of commitment overcoming moral hazard problems after the IPO" (Brav and Gompers, 2003, p. 26).

In the United States, the duration of lockups is not prescribed by law or regulations of the Securities and Exchange Commission or state securities regulators. Instead, the issuing firm and the underwriter decide the lockup period and include it in the underwriter's agreement[3]. The underwriter can at any time, and without notice, release the shares that are locked under the agreement. The typical lockup is 180 days. However, 90-, 270-, and 365-day period can also be observed in the United States (Field and Hanka, 2001). The length of the lockup is negatively related to the firm's transparency as measured by size, industry classification, and third-party certification such as investment prestige (Brau, Lambson, and McQueen, 2005).

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[2] Insiders include founding members, owners, directors, and officers.

[3] According to Bartlett (1995), the underwriter agreement consists of a covenant such as: "The Selling Security holders agree that, without your (the investment bank's) prior written consent, the Selling Security holders will not, directly or indirectly, sell, offer, contract to sell, make any short sale, pledge or otherwise dispose of any shares of Common Stock or any securities convertible into or exercisable for or any rights to purchase or acquire Common Stock for a period of 180 days following the commencement of the public offering of the Stock by the Underwriters" (as cited in Brav & Gompers, 2003, p.3).

Even though lockup duration appears in the prospectus, investors may still be apprehensive as expiration nears, fearing a sell-off by insiders. Field and Hanka (2001) report a 40 percent increase in trading volume and a three-day abnormal return of -1.5 percent around the unlock date. Similar results were found for Canadian high-tech firms, with significant negative cumulative abnormal returns and abnormal trading volume around IPO escrow[4] expirations (Kryzanowski and Liang, 2008).

2.3 Venture Capitalists

Venture-backed firms experience a market reaction around the unlock date that is three times stronger than that of non-venture-backed firms (Field and Hanka, 2001). According to Jeng and Wells (1998), venture capitals are successful at backing companies. However, venture backing is relatively new to the MENA region. The Gulf Venture Capital Association was founded in the first quarter of 2004 to enlighten the investment community on the venture capital and private equity industry and to promote its growth in the Arabian Gulf.[5] The 2006 report on *Private Equity and Venture Capital in the MENA region* describes changes in companies' performance when they receive equity or venture capital funds, which support Jeng and Wells' views on the matter (KPMG, 2006). However, according to Ahmad Al-Sari (Conference Chairman of Gulf Venture Capital) in an interview with Paul McNamara, the venture capital industry is not well developed in the MENA region because of the regulatory environment, the legal environment, the lack of data, and the lack of government policies to encourage development (McNamara, 2005).

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[4] Escrow agreements are similar to lockup agreements in which certain shares cannot be traded or transferred for a specified time; however, these shares are usually held by a third party in trust.

[5] See http://www.gulfvca.org/

This thesis does not examine venture capitals in connection with lockups in the MENA region due to lack of data.

2.4 Family Firms and Ownership

A family firm is defined by Villalonga and Amit (2006) as a firm where the founder or a family member is an officer, a director, or the owner of at least five percent of the firm's equity, individually or as a group. In the MENA region, family firms represent 90 percent of the businesses, with the next generation taking control within the next five to ten years (Remo-Listana, 2008 and Al Kady, 2008). Those family firms are now worth more than US $1 trillion. The structure of family firms in the Gulf Cooperation Council is such that executive positions are held by family members with full ownership. The conditions imposed on those undergoing an IPO, such as giving up unlimited control and being subjected to more rigorous accountability standards imposed by the different Capital Market Authorities, are not very attractive and are reasons for the reluctance of family firms to go public (Remo-Listana, 2008).

But those that do may benefit from diversifying their financing sources, bringing in new shareholders or improving the company's image (Marchisio and Ravasi, 2001). Future Pipes Industries Group's owners, the Makhzoumi family, who have industries in the MENA region, revealed in an interview that their objectives in going public were to derive more growth and raise their profile (Remo-Listana, 2008).[6]

[6] Future Pipes Industries Group canceled their IPO on May 1st, 2008 due adverse market conditions (Press Release, 2008).

To maintain control, families in the MENA region establish a mother or holding company, whereas in the western countries a trust might be established. A holding company does not have the same control tools as a trust (Saddi et al., 2009) (see Table 1). A holding company owns a majority of voting stock in a firm to control its management and its operations and to elect its Board of Directors. A trust holds shares transferred by the shareholder to benefit the members of the family where the purpose is to relocate the assets to the trust so that they are not owned by one person but by the whole family, thus keeping control over the assets in question.

Table 1. Differences between a Trust and a Holding Company

	Trust	*Holding*
Mode of Formation	Shareholders' shares from different companies transferred to the trust to be held by the trustees on their behalf.	Acquisition of a majority of shares of subsidiary companies.
Management	Board of trustees manages the trust and nominates the directors of the constituents.	Shareholders of holding company elect the board of directors who manages the holding.
Relationship	Constituent units are dependent.	Subsidiaries are independent.
Stability	Trust agreement are not easily closed and are for long periods.	Easily closed by the sale of share of the subsidiary company in the open market.
Sharing profits	Profits shared by all constituent units.	Profits are not shared with the subsidiary company but with the shareholders of the holding company.

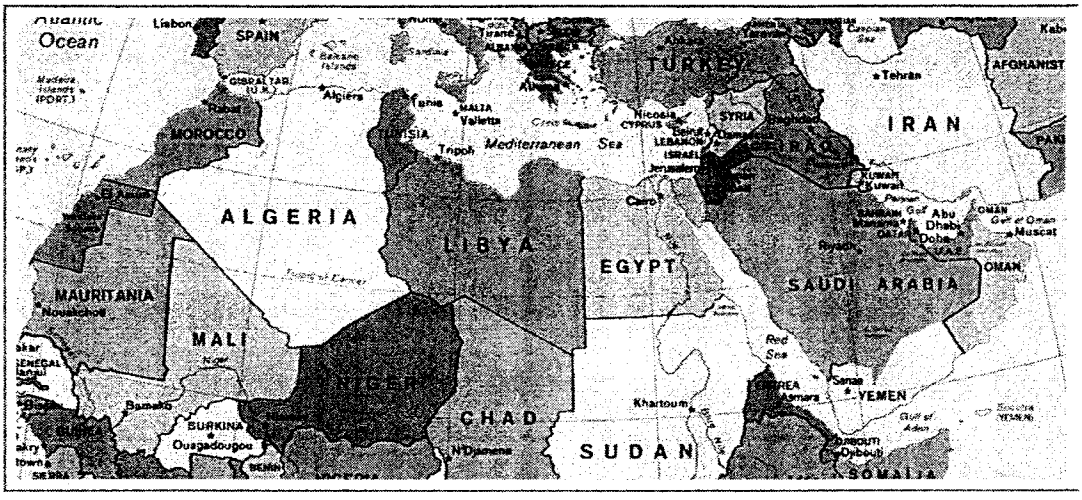
Source: http://www.freemba.in/articlesread.php?artcode=206&substcode=13&stcode=8

2.5 MENA Countries and Their Stock Exchanges

The MENA region includes the Persian plateau, Mesopotamia, the Arabian Peninsula, the Levant, the Mediterranean Sea, and North Africa (Figure 1). According to the World Bank, it extends over Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, West Bank and Gaza and Yemen. It's area is almost nine million square kilometers. The population in 2008 was 324.79 million, and grew at an average annual rate of 1.9 percent. The gross domestic product in 2008 amounted to US $1,117.20 billion, up 5.8 percent from the previous year (World Bank).

The region's economic growth of the past quarter century can be attributed to the increase in the price of oil and the legacy of economic policies and structures. The economies of the MENA region countries are diverse, ranging from the oil-rich Gulf countries such as Saudi Arabia to the resource-scarce countries such as Yemen. This region was affected by the financial crisis of 2008 even though financial institutions' investments in sub-prime mortgage-backed securities were smaller than most. The region also witnessed declines in the regional market indices, weaker foreign direct investment inflows, and wider spreads on sovereign debt (World Bank).

Figure 1. Middle East North Africa Map



Source: http://www.lib.utexas.edu/maps/middle_east_and_asia/n_africa_mid_east_pol_95.jpg

The markets covered in this thesis are the most prominent in the region: Casablanca SE in Morocco, Tunis SE in Tunisia, Egypt SE in Egypt, Amman SE in Jordan, Saudi SE in Saudi Arabia, Bahrain SE in Bahrain, Doha SE in Qatar, Dubai FM and Abu Dhabi SE in the United Arab Emirates and Muscat SE in Oman. Much of the material reported in the following subsections is institutional and descriptive and hence draws heavily on the original sources.[7]

2.5.1 Morocco

The stock exchange, Casablanca SE, established in 1929, was subject to three reforms: a legal entity change in 1948, a legal and technical reorganization in 1967, and finally a legislative reform in 1993 (Abdel Shahid & El Serafie, 2002). The reason behind these reforms was to modernize the market. In 1993, companies listed on the Casablanca

[7] Kuwait SE in Kuwait is not a market that was covered because the Kuwaiti companies were removed from the sample, following the criteria described in the Data collection section (section 3.1). Nasdaq Dubai in the U.A.E is not a market studied because trading does not take place on a daily basis. The decision to remove the companies traded on Nasdaq Dubai is discussed in section 3.1.

Stock Exchange became more transparent as they were obliged to publish accounting and financial statements.[8]

The lockup periods for Casablanca SE are derived from the listing rules. Companies can be listed on the stock market in three different compartments or three different equity markets based on the conditions they meet. Each compartment's preset conditions include a fully paid-up capital, a specified minimum value for the shares outstanding, a specified minimum number of shares to be offered at IPO, and a specified minimum equity value that should match one of the preset conditions (Table 2). A company undertaking an IPO will be registered in one of the three compartments. For example, if company X wishes to go public, and becomes listed in compartment 1, it should have a fully paid capital, equity of at least 50 million dirhams (about US $6.164 million), issue at least 250,000 shares, and the shares outstanding should have a value of at least 75 million dirhams (about US $9.245 million) after IPO. Firms listed in compartments 1 and 2 are not subject to lockup. However, founders of firms in the third compartment are not allowed to trade in their shares for three years. These conditions can only be modified by an order from the Finance Minister through a notice from the board of ethics of securities proposed by the company manager (Article 14, "loi 1-93-211 relative à la bourse des valeurs"). Some companies registered in the first or second compartments have a lockup of six months to one year. It is assumed that these firms were granted exceptions for their listings in compartment 1 and 2 as they perhaps did not entirely meet the listing require-

[8] See http://www.casablanca-bourse.com/homeen.html

ments. As such, the Finance Minister who grants these exceptions imposed a shorter lockup period relative to the compartment they are listed in.[9]

Table 2. Listing Requirements in Morocco

Preliminary Requirements			
	Compartment 1 Main Market	Compartment 2 Development Market	Compartment 3 Growth Market
Company profile	Large companies	Medium-sized companies	High-growth companies
Minimum equity value	50 million Dirhams ≈ US$ 6.164 million	No Fixed Limit	No Fixed Limit
Minimum sales	No Fixed Limit	More than 50 million Dirhams (US$ 6.164 million) *	No Fixed Limit
Number of certified financial periods	3	2	1
Consolidated financial statements	Yes, for companies with subsidiaries	Optional	Optional
Additional requirements			
	Compartment 1/Main Market	Compartment 2/ Development Market	Compartment 3/Growth Market
Shares outstanding	75 million Dirhams ≈ US$ 9.245 million *	25 million Dirhams ≈ US$ 3.082 million *	10 million Dirhams ≈ US$ 1.233 million *
Minimum number of shares issued	250,000 *	100,000 *	30,000 *
Liquidity provision contract	Optional	1 year	3 years

The major conditions that a company should meet to be listed in any of the three compartments are explained above. A compartment is a market category also referred to as equity market. The Main Market is compartment 1, the Development Market is compartment 2 and the Growth Market is compartment 3. These amounts can be modified by the Finance Minister. Source: Bourse de Casablanca.

[9] The statement concerning the lockup period in the first and second compartment is an assumption. The Stock Exchange in Casablanca was questioned about this matter but there was no response to date.

2.5.2 Tunisia

The Tunis Stock Exchange was established as a public institution in 1969. In the mid 1990s, the Tunisian equity market was restructured. It underwent a series of reforms, such as the reform on the regulation and organization of the stock market, that triggered growth and development. The Financial and Stock Market Law 1994 reorganized and modernized financial institutions by setting up three bodies: the Stock Exchange, the Capital Markets Boards and a Central Depository, and STICODEVAM, the securities clearing and settlement bank.[10] The Stock Exchange consequently restructured into a limited company and its council was given jurisdiction over disclosure requirements, the guarantee of the stock exchange information and control over the transparency of the offers (Adly Bellagha, 2006).

The Tunis Stock Exchange has an "official" list and an "unofficial" list. The "official" list of the stock exchange is composed of firms that meet listing requirements imposed by the regulations of the exchange (Table 3). The "unofficial" list is called the parallel market which is reserved for the securities of firms not admitted to the official list.

The official list of the stock exchanges is in turn divided into three markets: the Principal Market, the Alternative Market and the Bond Market. The first two are crucial to this study. There are common and distinct conditions for each (Table 3). Large and high-performance companies enter the Main Market whereas the Alternative Market is reserved for small and medium companies with good prospects.

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[18] STICODEVAM is the Tunisian Central Depository and the securities clearing and settlement's central bank. (See http://www.sticodevam.com).

Unlike the Casablanca Stock Exchange, listing requirements in Tunisia do not include a lockup, and it is not a stock exchange regulation. The "Conseil du Marché Financier," which regulates the Tunis Stock Exchange, recommends a lockup of two years[11] that would ensure the new investors of the owner's good intentions. In Tunisia, most of the owners of firms undertake not to sell more than five percent of the shares they own for two years. The lockup appears in the IPO prospectuses.

[11] This information was provided by the Department Chief of Financial Information at the CMF.

Table 3. Listing Requirements in Tunisia

	Main Market	Alternative Market
Common Conditions	Certified financial statements for two financial years before the application for admission*	
	Offer of at least 10 percent of the capital in the offering	
	Presentation of a valuation report of its assets	
	Presentation the manual of procedures of organization, and the structure of internal audit	
	Presentation of forecast information for 5 years	
	Obtain the agreement of the Financial Market Council	
Specific Conditions	Profit in the two last financial years	No profit condition required
	Shares of the firm owned by at least 200 shareholders by the day of introduction	Shares of the firm owned by at least 100 shareholders or 5 institutional shareholders by the day of introduction.
	A minimum capital of 3 Million Dinars on the day of the introduction (≈ US$ 2.208 Million)	The condition of minimum capital is not required
		Admission can be requested: if a company has its capital held, for more than a year, at the level of 20 percent at least, by two institutional investors, at least and if a company is under establishment by public offering after the approval of the IPO prospectus by the Financial Market Council (announcement in this case is made by the Financial Market Council after examination of the file).
		A listing sponsor should be appointed for at least 2 years during all the period in which its securities are listed on the Alternative Market.

The major conditions that a company should meet to be listed in the main and the alternative market. * Exemptions can be granted by the stock exchange for firms with less than 2 years of operations. Source: Bourse de Tunis.

2.5.3 Egypt

The Egyptian Exchange previously called the Cairo and Alexandria Stock Exchange, includes two exchanges: Cairo Stock Exchange and Alexandria Stock Exchange. The two markets were merged in the late 1940s.

Alexandria Stock Exchange, created in 1885, is the earliest form of a futures market. Different types of cotton were traded in coffee houses. The popularity of these trades grew, and consequently, the "Association Cotonnière d'Alexandrie" was established in a building near the area where the trades were formerly made. Cairo Stock Exchange also started its operations informally; however, its growth required it to follow the footsteps of Alexandria Stock Exchange. In 1903, Cairo Stock Exchange was created with 97 listed companies.

The lockup as stated in the Commercial Law of Egypt is two financial years from the date of establishment of the company. In other words, founders cannot trade the shares they subscribed for before the publication of two balance sheets and two profit and loss statements of two consecutive financial years (with each year not to be less than 12 months) following the company's establishment date.[12] However, as an exception, the transfer of ownership of the shares subscribed for by the founders can take place between founders, from a founder to a Board of Directors' member should they be needed to be submitted to the Board as a guarantee for his seat, or from the founder's heirs to third parties, in case of death (Article 45 of Law 159 issued in 1981).

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[12] The prospectuses of the Egyptian companies in the sample suggest a six-month lockup period. Contact was made with Egypt SE and the Egyptian Financial Supervisory Authority (EFSA), but no response was forthcoming.

2.5.4 Jordan

In the early 1930s, three major companies, the Arab Bank, the Company of Tobacco and Cigarettes, and the Electricity Company were established as public shareholding companies. At the beginning, there was no official stock exchange to trade their shares. In 1976, with the ongoing increase in the number of public shareholding companies, the Amman Financial Market was officially established. January 1, 1978, marked the date of the first official trading day with 66 listed companies. In 1997, to meet international standards for arms-length dealing, the Securities Law split the exchange into three bodies: the Jordan Securities Commission, the Amman Stock Exchange, and the Security Depository Center.[13]

The Company Law of 1997 drafted by the Jordanian Ministry of Industry and Trade states in Article 100 that there is a period of two years from the date of establishment of any listed company during which the founding members may not dispose of their shares (See Table 5 in Section 2.4.10). The founders can only transfer shares to their heirs, between spouses, and among the founders themselves. Selling shares to third parties can only occur as per judicial decision.

[13] Jordan Securities Commission "develops, regulates and monitors Jordan's capital market to maintain a sound investment environment and protect investors" (See http://www.jsc.gov.jo). Amman Stock Exchange is the Jordanian stock market where public shareholding companies have their shares traded in (See http://www.ase.com.jo). The Security Depositary Center (SDC) registers, issues, safe-keeps, deposits, clears and settles securities, transfers ownership of securities, performs ownership restrictions and reports and maintain corporate actions performed by issuers (e.g. Stock split, merger...) at the SDC in an electronic format (See http://www.sdc.com.jo/).

2.5.5 Saudi Arabia

In the mid 1930s, the Arabian Automobile Company was established as the first joint stock company. By 1975, there were 14 public companies. The market was made "official" in the 1980s in an effort to better regulate it. Supervision and the development was in the hands of a ministerial committee composed of the Ministry of Finance and National Economy, the Ministry of Commerce and the Saudi Arabian Monetary Agency.[14] The Saudi Arabian Monetary Agency was the sole regulator and monitor of market activities until the creation of the Capital Market Authority in 2003, after which the role passed hands.

The Saudi Stock Exchange is also referred to as *Tadawul* which is the Arabic word for Exchange. Its listing rules allow companies to be listed only if they have been operational for at least three years. These companies have a minimum lock up of six months. The selling restriction is imposed by the Capital Market Authority on shareholders owning a majority of shares. The listing rules can be relaxed. Some companies called "Greenfield" companies are listed in the market while they are still being established. They offer their shares to the public at par (SAR 10 - US$ 2.66) before becoming operational to raise seed capital. Greenfield companies are allowed to be listed on the Exchange by Royal Decree and have varying lockup periods. It is usually at least three years before the company satisfies the original requirement for listing, but it may be as long as five years. The lockup will vary from one company to another depending on the nature of

[14] SAMA established in 1952, is the central bank of Saudi Arabia. SAMA played a very important role in the development of the Saudi Financial System and has the following functions: issuing the national currency, acts as a banker to the government, supervises commercial banks, manages the kingdom's foreign exchange reserves, conducts monetary policy to promote price and exchange rate stability, and promotes the growth and ensures the soundness of the financial system (See http://www.sama.gov.sa)

the business (Table 4). For example, telecommunication and insurance companies have three-year lockups whereas real estate companies have five. The lockup period can be increased or decreased at the Capital Market Authority's discretion.

Table 4. Lockup Periods in Saudi Arabia

Industry	*Lockup Period*
Insurance	3 years
Telecommunications	3 years
Real Estate	5 years
Petrochemical & Cement	3 years or when commercial production starts whichever is later

The lockup period imposed in Saudi Arabia by the CMA to "Greenfield" companies according to the industry they belong to is described above.

2.5.6 Bahrain

Before the mid 1980s, public shareholding companies in Bahrain were traded actively in a unofficial market called "al Jowhara Market" which can be translated as "the Jewel Market." A decree issued in 1987 established the Bahrain Stock Exchange, which started operating in 1989.

The Commercial Companies Law of Bahrain mentions a two-year lockup from the date of the final incorporation of the company for holders of in-kind[15] shares (Article 123), and one financial year on the shares' for which founders have subscribed, also starting from the date of incorporation (Article 124). The one-year restriction period can be longer. If so, the length is specified in the company's articles of association.

[22] Preferred stock that pay interest or dividends through additional bonds or preferred stock.

In case of death or bankruptcy, the in-kind shareholders' heirs or the bankruptcy trustee are allowed to sell the in-kind shares during the restriction period. The shares subscribed to by the founders may be transferred during the ban by selling them from one founder to another or from the heirs of one founder to a third party or from the bankruptcy trustee of the bankrupt founder to a third party (Ministry of Industry and Commerce, Bahrain, 2001).

2.5.7 Qatar

The Doha Securities Market started its activities in May, 1997 with 17 listed companies, traded manually but eventually becoming fully electronic. Amendments in the laws and regulations were carried out to build up the exchange's reputation among the other markets in the region. It was recently converted into a shareholding company called Qatar Exchange and is currently in partnership with NYSE Euronext (Qatar Exchange, 2010).

The Commercial Companies Law (Law No. 5 of 2002) states that founders are not allowed to dispose of their shares for two years from the date of incorporation of the company. In case of death of any founder, the heirs are not allowed to sell shares inherited during the lockup period.

2.5.8 United Arab Emirates

The United Arab Emirates has three financial markets: Abu Dhabi Stock Exchange, Dubai Financial Market and Nasdaq Dubai. This thesis covers only Abu Dhabi, established November, 2000, and Dubai, established March of the same year.[16]

The Companies Law drafted by the United Arab Emirates Ministry of Economy states in Article 173 that shares exchanged for cash and shares in-kind that are subscribed to by the founders cannot be transferred or exchanged prior to the publication of a balance sheet and profit and loss statements of two consecutive financial years from the date of its constitution. During the lockup, the transfer or sale of any shares for cash and owned by a founder can take place between founders, or another board member to be presented as guarantee for his seat on the board or by the heirs of a deceased founder to third parties (Ministry of Economy, no date available).

2.5.9 Oman

The Muscat Securities Market was established in June 1988 to regulate and control the Omani Securities Market. Following ten years of continuous growth, two royal decrees were issued to promote better functioning of the market by establishing a capital market authority.

According to the Commercial Law of Muscat (Article 77), founders cannot dispose of their shares nor withdraw from the company until the company has published two financial statements for two consecutive years as from the starting date of effective pro-

[16] Trading does not take place daily on Nasdaq Dubai.

duction or the starting date of its activities.[17] The lockup period can be extended for one additional year by a decision taken by the Minister of Commerce and Industry and at the request of the capital market authority (Minister of Commerce and Industry, 1974). Private companies that have been established prior to the introduction of their shares on the stock exchange with a good operational record could have their lockup period relaxed to six months instead of the mandatory two years. The two-year lockup is applicable to newly established companies that have not yet started their operations.[18]

2.5.10 Summary

This overview of securities laws pertaining to lockups in the different MENA markets shows that the MENA region differs from the United States in that lockups are generally mandatory (e.g., true in Amman but recommended by the capital market authority in Tunis). The average lockup in most of these countries is two years, which is longer than the average lockup in the United States and more varied. There are few exceptions where the lockup is limited to six months for special cases in Saudi Arabia and Morocco (Table 5). The longest is five years imposed on Saudi real estate companies that are newly established (Table 5). Tunis SE is the only stock exchange in the region with a voluntary lockup.

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[17] Exempted from this condition are (1) shares that are owned by the government, (2) transfer of shares between the founders, and (3) in case of inheritance.

[18] This additional information that explains the 6-month lockup period is provided by a MSM contact.

Table 5. Summary of the Lockup Durations in the MENA region

Market	*Lockup Duration*	*Voluntary/Mandatory*
Abu Dhabi SE	2 financial years starting from the date of establishment	Mandatory
Amman SE	2 years starting from the date of establishment	Mandatory
Bahrain SE	2 years from the final date of incorporation for in-kind shares.	Mandatory
	1 year from date of incorporation after the publication of the Balance Sheet, and the Profit and Loss Account of the financial year (This period could be longer as stipulated in the company's Article of Association)	
Cairo SE	2 years starting from the date of listing	Mandatory
Casablanca SE	3 years from listing date for companies matching the third compartment's requirements. No lockup period required for the firms in the other 2 compartments. But could be imposed for 6 months to 1 year for compartments 1 and 2	Mandatory
Doha SM	2 years from the date of incorporation	Mandatory
Dubai FM	2 financial years starting from the date of establishment	Mandatory
Muscat SM	2 years for newly established firms, 6 months for firms with good records and of long standing status	Mandatory
Saudi SE	6 months for companies operational for a 3-year period before the IPO; 3 years starting from the listing date for insurance and telecommunication firms; 5 years for real estate firms; 3 years or when commercial activities start whichever is the latter for petrochemical and cement firms	Mandatory
Tunis SE	2 years from the date of listing	Voluntary

3. Data

3.1 The sample

Company information, mainly scanned prospectuses, was collected, and in many instances translated from Arabic, from the Zawya database and Bloomberg. Zawya is a commercial curator and supplier of financial information in the middle east (http://www.zawya.com). Daily close-to-close stock prices, volume and market index levels were obtained from Bloomberg and from Zawya.

All companies making initial public offerings between January 1, 1999 and December 26, 2008 were identified. This resulted in a raw sample of 256 firms classified as listed, not listed, cancelled or closed, and of which 220 listed firms were kept.[19] From those, 12 were excluded because of missing information or because the firm was traded over-the-counter. The remaining 208 were then screened for specific information in the prospectuses.

Companies in the MENA region are not entirely transparent, and the information in prospectuses is sometimes inconsistent. The unlock dates are not always published publicly or at least not recorded. The Zawya database supplies the prospectuses of the IPOs for the region in which the lockup period and the starting date of the lockup is specified. For the early IPOs (1999 until 2003), prospectuses were not available as the markets were then new and companies were either opaque or not bound by strict laws.

[19] "Not listed" refers to companies undergoing IPOs without being listed on a specific stock exchange. This happens when there is no stock exchange in the country. The status of these companies will change to "listed" once they list on their respective stock exchanges. "Not listed" also refers to companies that were listed and then delisted later. "Cancelled" refers to companies that released a prospectus but never went through with the IPO or companies that launched an IPO and then, for various reasons, decided to cancel it by returning the money to the subscribers. "Listed" refers to companies that completed the IPO and were successfully listed on a specific stock exchange. "Closed" is a status given to companies that completed their IPO and are waiting to be listed.

About 196 prospectuses are available in the Zawya database, with lockup information available for 142. Some prospectuses did not report lockup duration, while for others the information was ambiguous.

The unlock date was calculated from the reported start date of the lockup and the lockup period. A lockup period expressed in months or years was converted to days and added to the starting date of the lockup.

$$Unlock\ Date = Start\ Date + Lockup\ Period(days) \quad (1)$$

Some companies provided two possible starting dates for the lockup or two possible unlock dates.[20] The date chosen for most was the later one, but unfortunately, many were impossible to ascertain. These uncertainties resulted in more culling and brought the sample down to 119. Another 51 companies were excluded because their unlock dates were after April, 2009, and therefore, at the time of data collection, there wasn't enough price data available following the unlock date. Companies on Nasdaq Dubai were excluded because they appeared to have low liquidity and a market index was unavailable to compute risk-adjusted returns (Fattah & Anwar, 2009). Based on all of these exclusions, the final sample was whittled down to 63 companies traded on the following stock exchanges: Abu Dhabi SE, Casablanca SE, Bahrain SE, Amman SE, Cairo SE, Doha SM, Dubai FM, Muscat SM, Saudi SE, Tunis SE.

[20] The two possible starting dates are the listing date or the date of establishment published in the newspaper. The two possible unlock dates are the date after the elapse of the lockup period or the starting date of commercial operations for newly established firms.

3.2 Family Firms

Family firms represent 90 percent of all the businesses in the MENA region (Remo-Listana, 2008). I assume that family firms are reluctant to give up a big part of their shares because they want to retain control (Remo-Listana, 2008). I therefore expect that family firms will not display the same price reaction or trading activity as non-family firms upon being unlocked. The IPO prospectuses available in the Zawya database provide lists of founders and owners. Villalonga and Amit (2006) specify how to determine whether a firms is a family firm. For this thesis, a firm is deemed to be family-owned if any of the definitions in Table 6 is satisfied.

Table 6. Definition of a Family Firm

1	One or more family members are officers, directors, or block holders
2	The family is the largest shareholder
3	The family is the largest vote-holder and has at least family officer and one family director
4	One or more family members are directors or block holders, but there are no family officers

The partial list of the different definitions of family firms specified by Villalonga and Amit (2006, p.413) is used as a guide to differentiate the types of firms in the sample.

3.3 Summary Statistics

Table 7 reports the sample size, the fraction of family firms, the mean fraction of shares offered, and lockup duration for each stock exchange for the period 2004 to 2008. The fraction of family-owned firms is around 31 percent which is relatively low as anticipated in the literature on family firms in the MENA. The mean fraction of post-IPO shares sold in the offer is about 36 percent, and is close to that reported by Field and Hanka (2001).

Saudi SE and Amman SE are the two dominant stock exchanges in the sample with 17 and 24 of the 63 firms. Table 7 also shows that lockup duration does not vary much from market to market. Most fall between six months and two years. Even though Saudi Arabia has strict lockup laws, allowing for up to five years, it has the lowest average at 278 days. (Many Saudi firms have a lockup of three to five years. Unfortunately, these firms had to be removed from the sample because their unlock dates fell after July 2009.) Cairo has the shortest with an average of 180 days; however, recall that their law stipulates that founders are not allowed to sell their shares before the end two fiscal years. Overall, most of the stock exchanges require an average lockup of two years. The average for the MENA region as a whole is 559 days, which is considerably longer than the 187 reported by Field and Hanka for the United States.

Table 7. Sample Size and Distribution of Lockup Period, by Location of IPO

Exchange	*Sample size*	*Fraction of Family Firms*	*Mean Fraction of Post-IPO shares Sold in Offer*	*Mean Fraction of Post-IPO shares Locked Up*	*Mean Lockup (days)*	*Distribution of Lockup (days)*		
						180	$180 < t \leq 720$	> 720
Abu Dhabi	3	0.00	0.41	0.59	720	0.00	1.00	0.00
Amman	17	0.29	0.34	0.66	720	0.00	1.00	0.00
Bahrain	1	1.00	0.30	0.70	360	0.00	1.00	0.00
Cairo	3	0.33	0.26	0.74	180	1.00	0.00	0.00
Casablanca	3	0.33	0.22	0.78	540	0.33	0.33	0.33
Doha	5	0.00	0.56	0.44	720	0.00	1.00	0.00
Dubai	1	0.00	0.55	0.45	720	0.00	1.00	0.00
Muscat	2	0.00	0.33	0.68	630	0.50	0.00	0.50
Saudi	24	0.42	0.32	0.68	278	0.92	0.04	0.04
Tunis	4	0.75	0.31	0.69	720	0.00	1.00	0.00
Total	63	0.31	0.36	0.64	559	0.28	0.64	0.09

Sixty-three IPOs with unlock dates from 2004 to 2008. *Mean Fraction of Post-IPO Shares Locked Up* is assumed to be equal to one minus the percentage number of shares issued.

4. Hypotheses and Methods

4.1 Hypothesis 1 — Price Reaction on Unlock Day

Previous studies have examined the price and volume reaction to lockup expiration. Field and Hanka (2001) observed a 40 percent increase in the trading volume and a three-day abnormal return of -1.5 percent on the unlock date. The cumulative three-day abnormal return is significantly negative around the unlock date. Unlike its western neighbour, lockups in the MENA region, with few exceptions, are imposed by laws set by a ministry of finance or a capital market authority. The duration of these trading restrictions is stipulated in IPO prospectuses. Will the market reaction in the MENA region be similar to that in the United States?

Null Hypothesis 1: There is no price reaction to lockup period expiration.

$$H_0 : \mu_{CAR} = 0$$

Alternative Hypothesis 1: There is a price reaction to lockup period expiration.

$$H_1 : \mu_{CAR} \neq 0$$

where μ_{CAR} is mean cumulative abnormal return across firms on unlock day. I follow Field and Hanka (2001, p. 477) and compute cumulative abnormal returns by compounding the simple daily return for firm *i* deflated by the same-day return on the market index *m* of the exchange on which the firm is listed. The three-day cumulative abnormal return straddling an event day such as an unlock day, for example, is shown in equation (2).

$$CAR_i = \left[\prod_{t=-1}^{+1} \left(\frac{1 + R_{i,t}}{1 + R_{m,t}} \right) - 1 \right] \tag{2}$$

CARs capture the influence of extraneous events on stock prices. Price reaction is then measured by the cross-sectional mean of cumulative abnormal returns for windows straddling the unlock day. A number of different windows are investigated to compensate for possible measurement error in ascertaining unlock dates. Trading volume is tracked graphically to determine whether overall market activity tells a consistent story.

4.2 A Note on Cumulative Abnormal Returns and Missing Price Data

The actual unlock day was, as mentioned previously, not always clear. Furthermore, the day recorded sometimes fell on a non-trading day. The various exchanges have different non-trading days. And finally, all of the companies had periods during which they did not trade. As the cumulative abnormal returns (and, for that matter, the abnormal trading volumes) are based on time windows of a given width, some explanation of how the data in these windows were put together is in order. All computations based on time windows started with the recorded unlock date. Most of the tests involve windows that straddle the unlock date. If the unlock day was a non-trading day for the exchange or the company itself, the next available trading day was taken as the unlock day. The requisite number of observations straddling this event date were then collected to make the window. This means, for example, that a ten-day window always had ten observations, although there might be substantial non-trading gaps between them on either side of the event date. The windows are therefore not necessarily symmetrical about the event date in calendar days. Two other methods of gathering observations for the windows were also used to ensure robustness of the results. One kept the unlock date as recorded, even if it was a non-trading day, and forced the width of the window to equal its specified number

of calendar days regardless of the number of non-trading days that fell within it. This means that a ten-day window could have far fewer observations than ten. The reason for using this method is that investors are deemed to be cognizant of the unlock day and their perception of the attractiveness of the stock may increase or diminish as the day approaches or passes regardless of whether trade was physically possible. Another approach, which is more applicable to windows that do not straddle the unlock date, took the unlock day as recorded, and expanded the window backwards if the window fell before the unlock date (for example, day -50 to day -6) and expanded forward if the window straddled the unlock date to catch the desired number of trading days (with reference to the Market's trading days as opposed to the company's trading days). In general, all methods yielded qualitatively similar results, so only the results for the first are discussed.

4.3 Hypothesis 2 — IPO Underpricing

Like the United States, there is evidence of IPO underpricing in the Gulf Cooperation Council countries represented by Saudi Arabia, Kuwait, United Arab Emirates, Qatar, Oman, and Bahrain (Amirrad, 2007). As these countries are in the MENA region and because the unlock day question exists because of IPOs, it is of interest to present evidence on possible IPO underpricing in the MENA region.

Null Hypothesis 2: MENA IPOs are not underpriced.

$$H_0 : \mu = 0$$

Alternative Hypothesis 2: MENA IPOs are underpriced.

$$H_1 : \mu > 0$$

where μ is the mean across companies of first-trading day, market-adjusted abnormal returns in (3).

$$MAAR_i = R_{i,1} - R_{m,1} \tag{3}$$

The return on stock i is the simple return computed from the closing price on the first trading day relative to the issue price of the IPO, and the return on the corresponding market is the same as that used to compute the CARs in (2).

MENA IPOs are oversubscribed, so newly issued shares are distributed to investors pro-rata, with each receiving an equal fraction (Amirrad, 2007). There is therefore an opportunity cost to investors for the money tied up, which along with transaction costs, may influence first trading day returns; Al-Hassan, Delgado and Omran (2007) contend that because of this the simple return used in (3) over-estimates the actual initial return (Amirrad, 2007, p.26). However, there is no data available on refunds to investors who are not allocated the number of shares requested, so (3) is the imperfect proxy used.

4.4 Hypothesis 3 — IPO Underpricing and Lockup Duration

Courteau (1995) argues that high-quality firms signal their quality by agreeing to longer lockups, whereas insiders of low-quality firms would be unwilling to bear the cost of committing for a longer time. One motivation to signal quality is to get a higher offering price at the IPO or to get a better price at the SEO (Brav and Gompers, 2003; Welch,

1989). The IPO of a firm with a longer lockup will be less underpriced than one with a shorter lockup, all things being equal. This signaling hypothesis makes sense where lockup duration is the voluntary decision of the firm, or the firm and its underwriter, as it is in the United States. But not in the MENA region where lockups are generally set by law according to criteria that vary from market to market. Here, lockup duration can be interpreted as an explicit pronouncement of the authorities' belief as to the quality or transparency of the company. The signal is therefore the opposite of that posed by Courteau (1995). A longer lockup signals lower firm quality, necessitating more rather than less underpricing, if any. This leads to Hypothesis 3.

Null Hypothesis 3: IPO issue day returns do not depend on lockup duration.

$$H_0 : \mu_{lockup \leq 180} = \mu_{lockup > 180}$$

Alternative Hypothesis 3: Companies subject to longer lockups have higher IPO issue day returns.

$$H_0 : \mu_{lockup \leq 180} < \mu_{lockup > 180}$$

where $\mu_{length\ of\ lockup}$ is the mean *MAAR* for firms with a given lockup duration.

4.5 Hypothesis 4 — Family Firms and Trading Volume on Unlock Day

In the MENA region, family firms are relatively young, often with less than 65 years of operation (Sfakianakis, 2009). It is possible that families are not willing to give up the control of their firms despite the opportunities that an IPO may offer — a new source of funding, and according to Krips Newman (1985), an improvement in the firm's borrowing and bargaining power, which in turn reduces borrowing costs. This may be

why there have been few IPOs for family-owned firms in MENA. In the United Arab Emirates, for example, families were at one time allowed to retain only 45 percent of the total shares when going public. This was later increased to 70 percent in order to encourage public listing (Rimo-Listana, 2008). I hypothesize that family firms in an IPO will exhibit less trade activity on unlock day than non-family firms.

Null Hypothesis 4: There is no difference in mean abnormal trading volume of family and non-family firms on unlock day.

$$H_0 : \bar{V}_{family\ firms} = \bar{V}_{nonfamily\ firms}$$

Alternative Hypothesis 4: Family firms exhibit less abnormal trading volume on unlock day than non-family firms.

$$H_0 : \bar{V}_{family\ firms} = \bar{V}_{nonfamily\ firms}$$

where $\bar{V}$ is the mean 3-day abnormal trading volume (T=3), computed as in (4).

$$\bar{V}_{i,T} = \frac{V_{i,T}}{\frac{1}{45}\sum_{t=-50}^{-6} V_{i,t}} - 1 \qquad (4)$$

Here I again follow Field and Hanka (2001, p. 478). Abnormal trading volume, $\bar{V}$, on a given day is that day's volume as a fraction of mean daily volume for some prior period, such as the 45 days ending six days before the event day. Volume is a noisy proxy for this hypothesis. Trades at the bid and ask would be better but are not available. I test whether mean abnormal volume for three-, seven-, and ten-day windows straddling the unlock day are significantly different from zero using t-tests.

4.6 Regression

Pooled ordinary least squares regressions are used to explore the cross-sectional variation of three-day cumulative abnormal returns (CARs) and the natural logarithm of three-day abnormal trading volume ($\log(1+\bar{V})$).

$$\begin{aligned} \bar{CAR} = {} & \alpha + \beta_{Family\ Firm} X_{Family\ Firm} + \beta_{Size} X_{Size} + \beta_{Frac} X_{Frac} + \beta_{Run\ up} X_{Run\ up} \\ & + \beta_{Saudi} X_{Saudi} + \beta_{Amman} X_{Amman} + \beta_{Lockup\ Duration} X_{Lockup\ Duration} + \beta_{Vol} X_{Vol} + \varepsilon \end{aligned} \tag{5}$$

$$\begin{aligned} Vol = {} & \alpha + \beta_{Family\ Firm} X_{Family\ Firm} + \beta_{Size} X_{Size} + \beta_{Frac} X_{Frac} + \beta_{Run\ up} X_{Run\ up} \\ & + \beta_{Saudi} X_{Saudi} + \beta_{Amman} X_{Amman} + \beta_{Lockup\ Duration} X_{Lockup\ Duration} + \beta_{CAR} X_{CAR} + \varepsilon \end{aligned} \tag{6}$$

Family Firm is a dummy variable equal to one when the firm is designated a family firm and zero otherwise. *Size* is the common logarithm of IPO issue price times the number of shares outstanding. *Frac* is the fraction of shares locked up. *Run up* is the common logarithm of one plus the cumulative return from the IPO until day -6. *Saudi* is a dummy variable equal to one when the firm is listed on Saudi SE and zero otherwise. *Amman* is a dummy variable equal to one when the firm is listed on Amman SE and zero otherwise. Controlling for the Saudi and Amman exchanges is done because they represent more than 50 percent of the sample. *Lockup Duration* is a dummy variable equal to one when the firm has a long lockup period (more than 180 days) and zero otherwise. The short lockup duration equals 180 days.

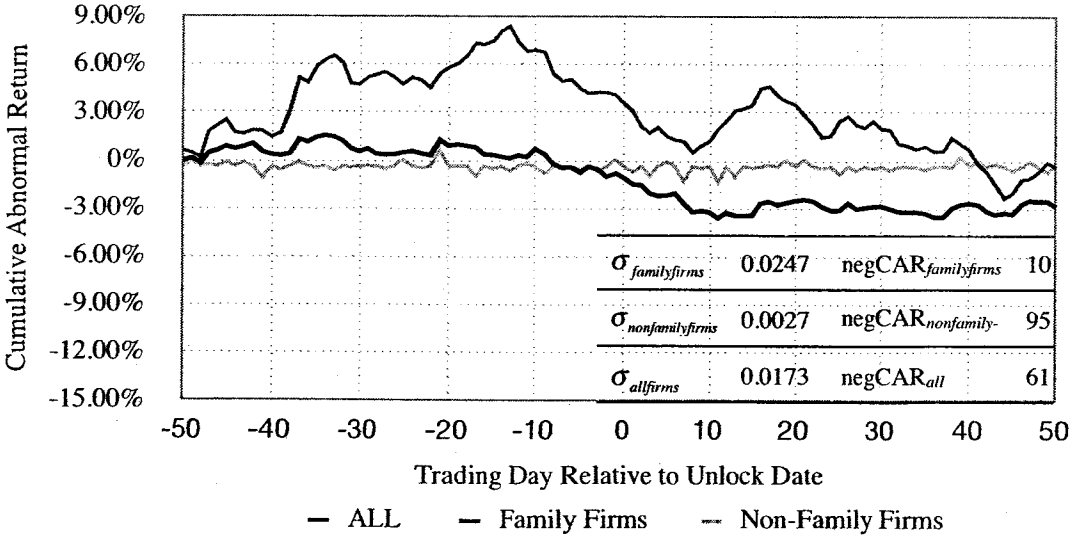
5. Results and Discussion

5.1 Visual Inspection of Time Series

I first present a visual inspection of the time series of returns to depict the variations from country to country around the unlock day, and to compare the different categories under study: the types of firms (family and non-family firms) and lockup duration (180 days and more than 180 days). I argue, as a result of this inspection, that even though the cumulative abnormal returns at the unlock date are negative (for most of the subcategories), the association between the expiration date and share price is weaker than it is in the United States.

Figure 2 shows the time series of mean cumulative abnormal returns for the entire sample of 63 companies according to family and non-family designation and with respect to their individual unlock dates (t = 0). The cumulative return fluctuates between -4 and 9 percent, and is negative on the unlock day for the overall sample (-0.0108 for the entire sample) and remains so for the rest of the period under study, until day 50. The dip below zero, extending over a 20-day period, is much smaller and smoother than that of firms in the United States as reported by Field and Hanka. There is a difference between family and non-family firms in the magnitude of cumulative returns or the number of days on which they are negative. The cumulative returns of family firms are twice as volatile as that of the sample as a whole. The volatility of the cumulative abnormal returns of family firms could be caused by the uncertainty about their future actions.

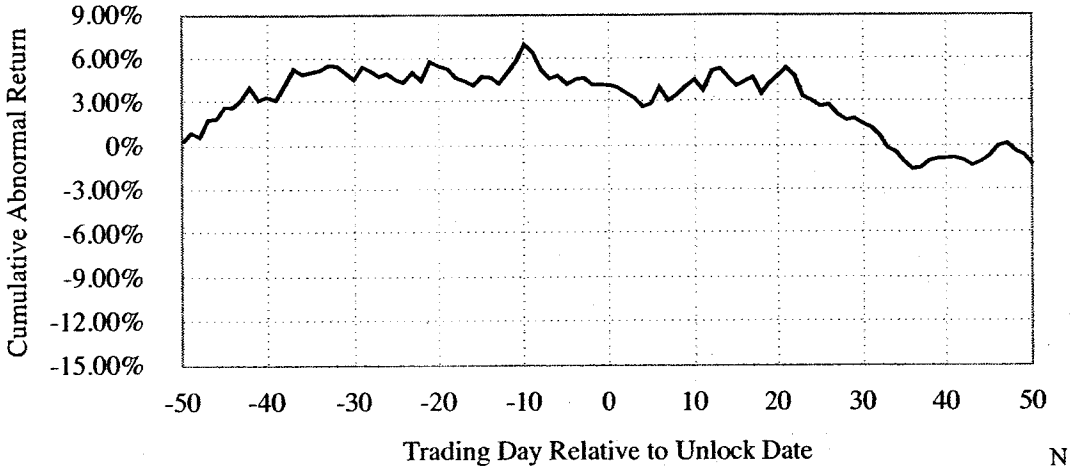
Figure 2. Mean Risk-Adjusted Returns Around the Unlock Day



Sixty-three MENA region IPOs with listing dates from 2004 to 2008. There are 22 family firms and 41 non-family firms. σ is the standard deviation and NegCAR is the frequency of negative cumulative abnormal returns.

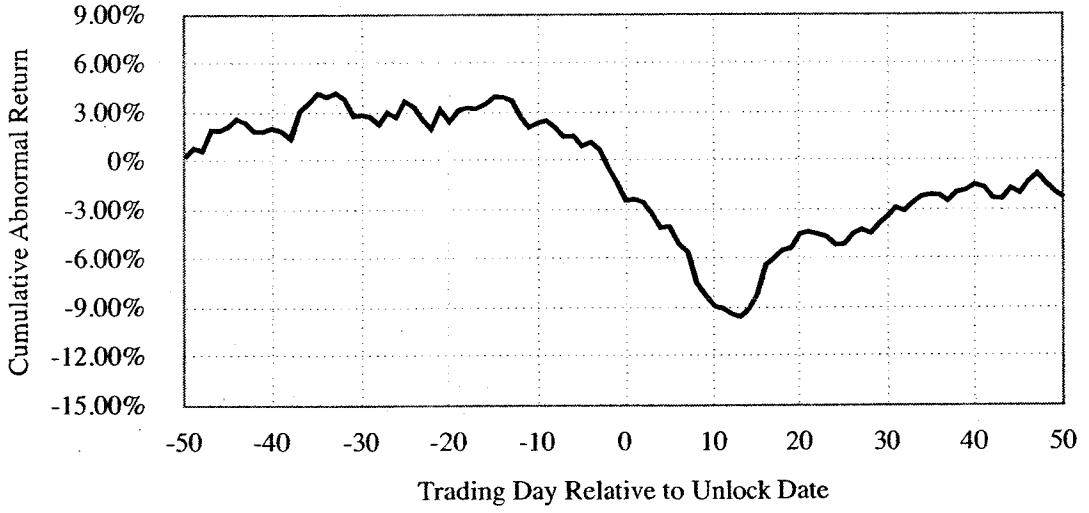
Half of the sample is made up of Saudi and Jordanian (the Amman exchange) companies. It is therefore important to confirm whether, in light of different market regulations from country to country, the returns of these two or possibly a small number of firms within them are driving the time series of the entire sample. Figures 3 and 4 on the next page show the series for Saudi Arabia and Jordan. The cumulative returns of firms listed in Saudi Arabia is mostly positive, specially around the unlock day. However, firms listed in Jordan reveals a smooth dip to minus nine percent around day 14 followed by a six percent increase in mean cumulative abnormal returns until day 50, and this cannot be attributed to a single company or small number of companies. The removal of Saudi Arabia and Jordan from the sample would leave mean cumulative abnormal returns negative at -0.05 and declining; but overall, there is no indication that the Saudi and Jordan subsamples are driving the observed results.

Figure 3. Mean Abnormal Returns Around the Unlock Day for Saudi IPOs



N = 24 companies with listing dates from 2004 to 2008.

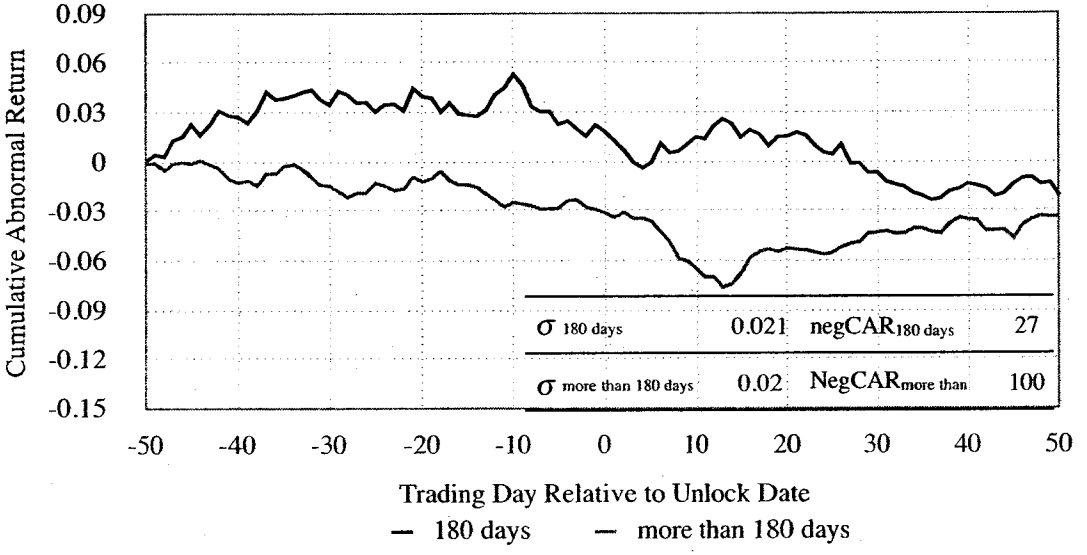
Figure 4. Mean Abnormal Returns Around the Unlock Day for Jordanian IPOs (Amman)



N = 17 companies with listing dates from 2004 to 2008.

Figure 5 presents the time series of mean cumulative abnormal returns around the unlock day for lockups of 180 days and those that are longer. The mean cumulative abnormal return for firms with a lockup of more than 180 is negative at the unlock date but that for firms with shorter lockups is positive and decreasing.

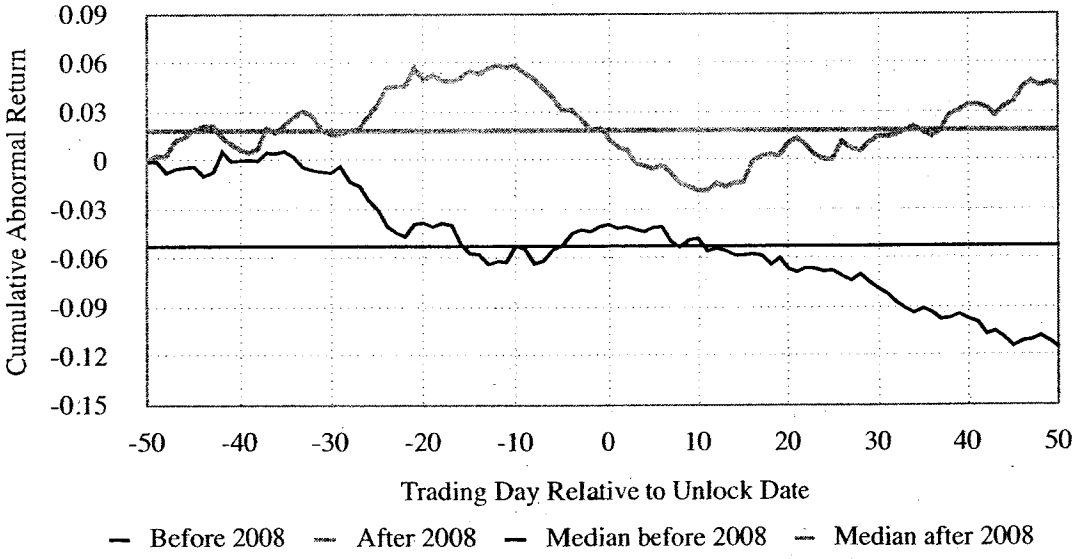
Figure 5. Mean Risk-Adjusted Returns By Lockup Duration



Twenty-six firms with a short lockup (180 days) and 37 firms with a long lockup (more than 180 days). σ is the standard deviation and NegCAR is the frequency of negative cumulative abnormal returns of each sample.

Most of the IPOs in this study took place in 2008 during the sub-prime loan crisis. Even though banks and financial companies of the region apparently did not hold large amounts of sub-prime mortgage-backed securities and most countries of the Gulf had strong financial positions to overcome the outflow of short-term capital, the financial crisis still had an impact on the financial outlook in the region (World Bank, 2009). Figure 6 charts mean cumulative abnormal returns for unlock dates before and after 2008. There are apparent systematic differences however they don't suggest that the crises affected the cumulative abnormal returns of the companies in this sample. The cumulative returns of firms with an unlock date before 2008 is lower than that of firms with an unlock date after 2008 and is decreasing.

Figure 6. Mean Abnormal Returns Around the Unlock Day: Pre- and Post-2008



Sixty-three MENA region IPOs, 29 with unlock dates before 2008 and 34 with unlock dates after.

In the United States, cumulative abnormal returns have stable positive variations pre-unlock and negative variations post-unlock following the dip that occurs at t=0

whereas in the MENA, cumulative abnormal returns have smoother decreasing variations throughout the period under study.

5.2 Cumulative Abnormal Returns

The mean and median cumulative abnormal returns for various windows straddling the unlock day are reported in Table 8. Fifty-six percent of the companies experience negative three-day CARs with a mean of -0.0049 and a median of -0.0077.[21] However, consistent with the preceding graphical analysis, it cannot be concluded that the mean is significantly different from zero for any of the event windows. MENA IPOs do not exhibit the negative price reaction on unlock day that IPOs in the United States do.

When the tests of three-, seven- and ten-day CARs are applied separately to the subsamples of 180-day lockups and those that are longer, it is found that, like Field and Hanka, that CARs for the longer lockups are insignificantly negative. However, the ten-day CAR for firms with short lockups period is significantly negative at the ten percent level (mean = 0.0313 and a t-value = -1.8202). The three- and seven-day CARs are however insignificant. The significance of the ten-day CAR shows that the 63 companies in the sample experienced an event over the ten-day period that might not be related to the unlock date. The graphical analysis of figure 2 unlike the time series for cumulative abnormal returns in Field and Hanka's study (2001), doesn't depict a single drop that would suggest a single similar event but five dips that could be interpreted as five different

[21] The first "other" method described in section 4.2 yields significantly negative seven- and ten-day CARs at a five percent confidence level.

events. Therefore, these results cannot lead to any conclusion about a specific reaction to the unlock date.

Table 8. Cumulative Abnormal Return Around the Unlock Day

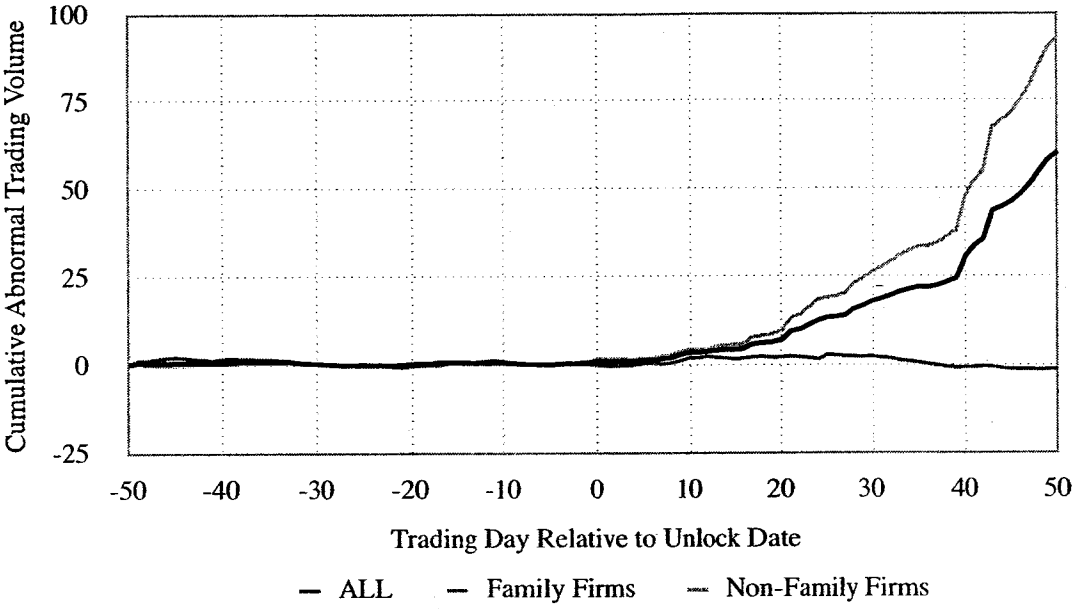
	CAR x 100	
Period	*Mean*	*Median*
Day -50 to -6	0.0014 (0.0519)	-0.0383
Day -5	-0.0032 (-0.8953)	0.0003
Day -4	0.0036 (1.0723)	0.0029
Day -3	-0.0017 (-0.5366)	-0.0032
Day -2	-0.0045 (-1.3075)	-0.0058
Day -1	0.0021 (0.5690)	-0.0018
Day 0	-0.0028 (-0.9161)	-0.0051
Day +1	-0.0039 (-1.3421)	-0.0042
Day -1 to +1	-0.0049 (-1.1408)	-0.0077
Day -5 to +1	-0.0101 (-1.0696)	-0.0109
Day -5 to +5	-0.0165 (-1.3675)	-0.0117
Day +2 to 10	-0.0163 (-1.4196)	-0.0201
Day +11 to +50	0.0079 (0.2967)	-0.0249
Fraction with negative CAR for Days -1 to +1	56.45%	

Sample is 63 MENA IPOs with lockup periods of 6 months to 5 years. The CAR for each firm is computed as in equation (2). T-statistics are in parenthesis.

5.3 Abnormal Volume

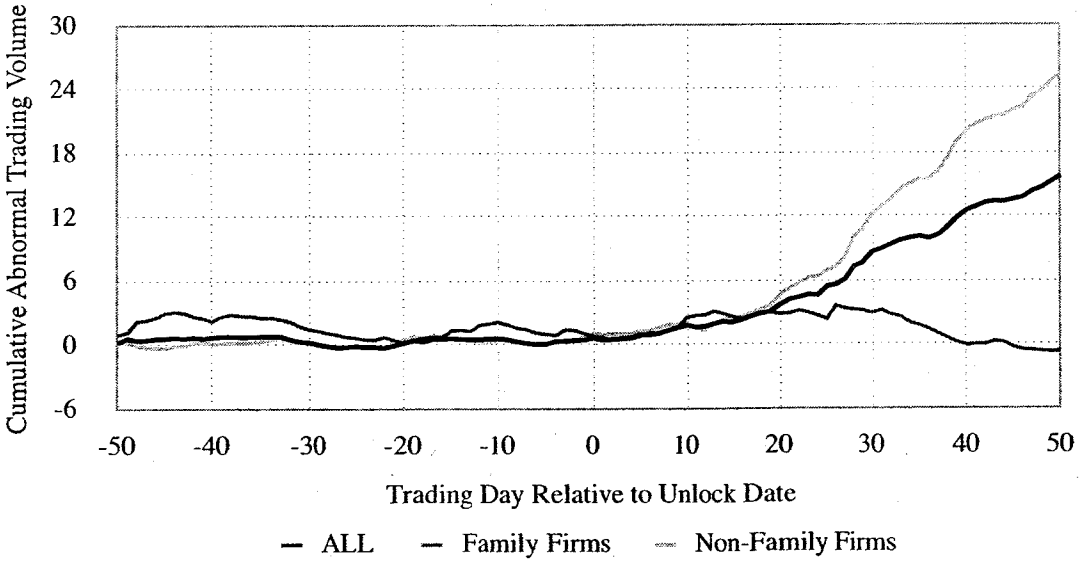
Figure 7 shows time series of mean daily abnormal trading volume where it can be seen that volume increases for non-family but not family firms and spikes a little more than a month after unlock day. Figure 8 shows the same after the removal of two Jordanian outliers, Tuhama for Financial Investment (a non-family firm) and Housing Loan Insurance Company (a non-family firm), whose cumulative abnormal trading volumes were 3.5 times the volume of any other company in the sample. Again, neither family nor non-family firms display a distinct change in volume close to unlock day, but the volume of family firms is higher than that of non-family firms throughout most of the pre-unlock period.

Figure 7. Cumulative Abnormal Trading Volume Around the Unlock Day



Volume is measured relative to each firm's mean volume over days -50 to -6 according to equation (4). The sample is 63 MENA IPOs with listing dates 2004 to 2008, 22 family firms and 41 non-family firms.

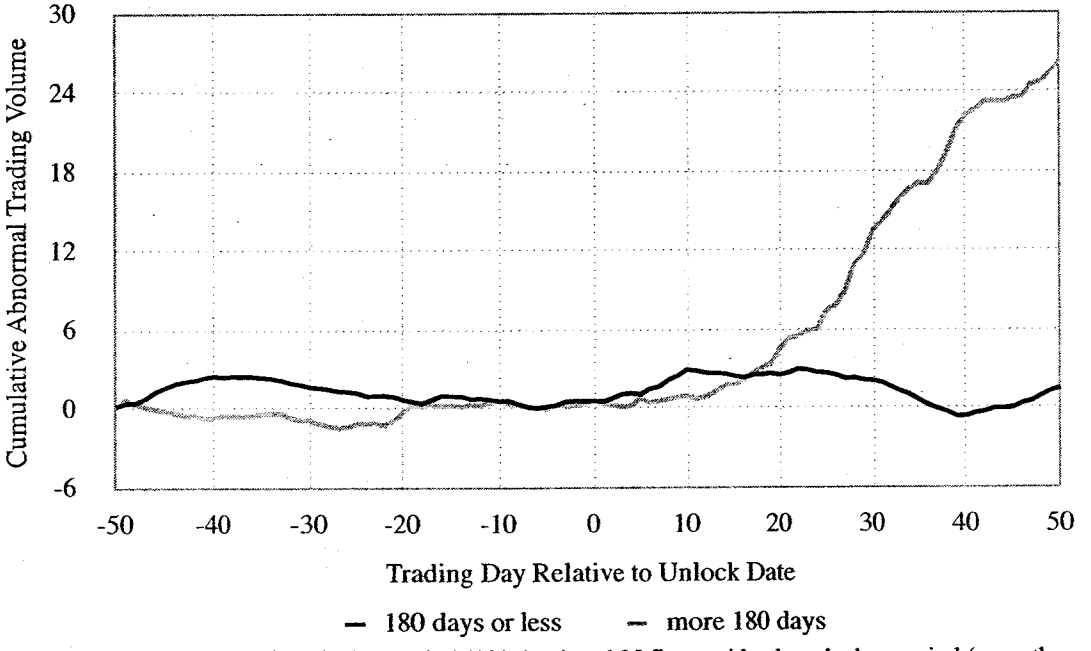
Figure 8. Cumulative Abnormal Trading Volume Around the Unlock Day with Outliers Removed



Abnormal volume is measured relative to each firm's mean volume over days -50 to -6 according to equation (4). The sample is 61 MENA IPOs with listing dates 2004 to 2008. Two outliers, Tuhama for Financial Investment and Housing Loan Insurance Company (non-family firms listed on Amman SE), are removed. There are 22 family firms and 39 non-family firms.

Figure 9 breaks down cumulative abnormal volume by lockup duration. The mean volume of firms with long lockups is higher and more variable, beginning about day 12. Non-family firms (Figure 8) have long lockup periods as the plots of their respective mean cumulative abnormal volume follow a similar tendency. Low cumulative abnormal volume for firms with short lockup periods is not only driven by family firms but by a mixture of both family and non-family firms.

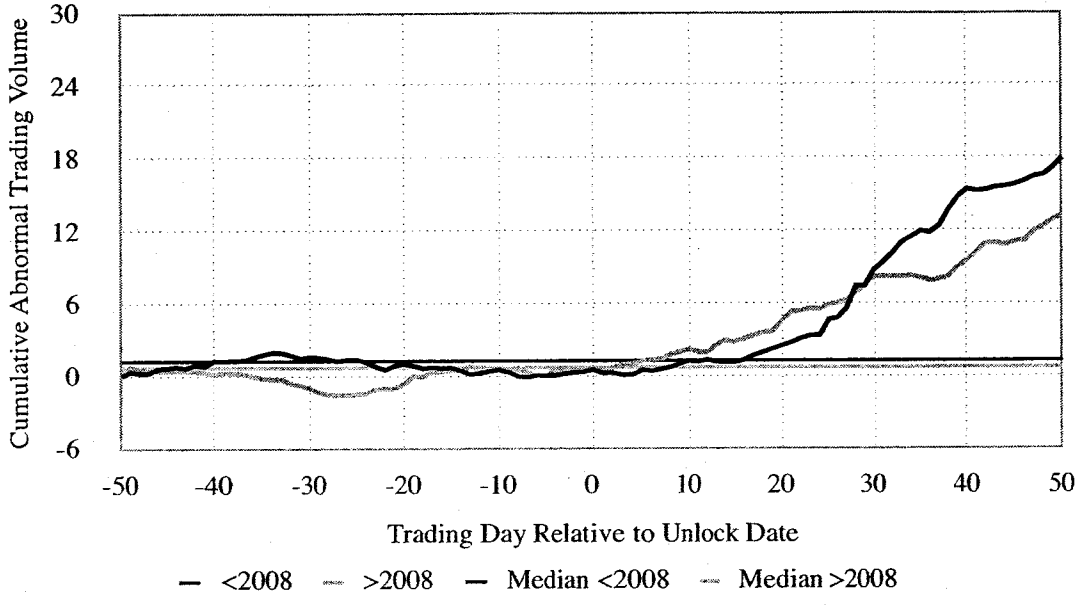
Figure 9. Cumulative Abnormal Trading Volume Around the Unlock Day by Lockup Duration



There are 26 firms with a short lockup period (180 days) and 35 firms with a long lockup period (more than 180 days or more).

Figure 10 presents cumulative abnormal volume for unlock dates before and after 2008. There are no striking differences in cumulative trading volume for firms with unlock dates before and after 2008 suggesting that the crisis didn't affect the activity of the stock market.

Figure 10. Cumulative Abnormal Trading Volume Around the Unlock Day: Pre- and Post 2008



Volume is measured relative to each firm's mean volume over days -50 to -6. Sample is 61 MENA IPOs with listing dates over the period 2004 to 2008. There are 29 firms with unlock dates before 2008 and 32 firms with unlock dates after.

The analysis of the daily volume in all the different categories shows that contrary to the United States that witnesses a striking 40 percent increase at the unlock date, the percentage change in the mean abnormal volume in the MENA does not vary much. The difference between the market reaction in the United States and the MENA could be due to the type of lockups used. In the MENA, the lockups might not be valued as much as in

the United States because it is mandatory and a law rather than voluntary and an agreement.

5.4 OLS Regression Results

The regression results are reported in Table 9. Few independent variables affect significantly the dependent variables. Unlike previous findings, the log (1+ abnormal volume) is not determined by the run-up, inconsistent with Field and Hanka (2001), Odean (1998), Shefrin and Statman (1985), and Ferris, Haugen, and Makhija (1988) (as cited in Field and Hanka, 2001, p. 483). The dummy variable for family firms is not significant. It means that there is no additional impact on the cumulative abnormal return and volume when the company is a family firm. Companies trading in Amman stock exchange have a lower abnormal volume than the other firms listed in the other markets; $Log(1+\bar{V})$ decreases by around 35.23 percent for the whole sample, 56.58 percent for family firms and 29.85 percent for non-family firms. Family firms listed in the Saudi stock exchange have a higher CAR (a CAR increase by 4.23 percent) than the firms listed in other exchanges. The fraction of shares locked up post-IPO and the CAR of family firms have a significant positive relation. All in all, no conclusion can be drawn from the results of the OLS regression. There should be other undetermined factors not accounted for that would affect the abnormal return and volume.

Table 9. Pooled OLS Models of Abnormal Returns and Volume Around the Unlock Day

	CAR			$Log(1+\bar{V})$		
Dependent Variable	*All*	*Family Firms*	*Non-Family Firms*	*All*	*Family Firms*	*Non-Family Firms*
Intercept	-0.0145 (-0.30)	-0.1048 (-1.02)	-0.0376 (-0.71)	-0.4434 (-0.94)	-0.9661 (-1.46)	-0.1206 (-0.17)
Family Firm	-0.0085 (-0.83)	-	-	-0.0819 (-0.82)	-	-
Size	0.0018 (0.36)	-0.0095 (-1.01)	0.0062 (1.10)	0.0580 (1.18)	0.0457 (0.71)	-0.0211 (-0.28)
Fract	0.0001 (0.29)	0.0023** (2.19)	-0.0001 (-0.34)	-0.0003 (-0.10)	0.0059 (0.74)	0.0002 (0.06)
Saudi	-0.0021 (-0.19)	0.0423* (1.77)	-0.0142 (-1.26)	-0.0976 (-0.91)	0.0704 (0.40)	-0.1441 (-0.96)
Amman	-0.0137 (-1.06)	-0.0434 (-1.30)	-0.0096 (-0.77)	-0.3523** (-2.98)	-0.5658** (-3.11)	-0.2985* (-1.91)
Run-up	-0.0127 (-0.82)	-0.0479 (-1.60)	-0.0093 (-0.56)	0.0144 (0.10)	0.0483 (0.22)	-0.1407 (-0.65)
Lockup Duration	-0.0048 (-0.52)	0.0069 (0.37)	-0.0069 (-0.70)	-0.0566 (-0.62)	0.0602 (0.49)	-0.1144 (-0.88)
$Log(1+\bar{V})$	0.0192 (1.37)	-0.0173 (-0.44)	0.0151 (1.13)	-	-	-
CAR	-	-	-	1.8050 (1.37)	-0.7734 (-0.44)	2.5956 (1.13)
N	61	22	39	61	22	39
Adjusted R^2	0.0149	0.1864	-0.0181	0.1621	0.4010	0.0421

Ordinary Least Square regression from equation (5) and (6). Sample is 61 lockup expiration days in the period 2004 to 2008. Abnormal returns and volume are measured over days -1 to +1. Abnormal return is measured relative to the market specific value-weighted index. Abnormal volume is relative to each firm's average three-day trading volume in days -50 to -6. Frac is the fraction of post-IPO shares locked up which is equal to the percentage of shares not offered in the IPO. T-statistics are in parentheses. *, ** significantly different from zero at the 10 percent level and at the 5 percent respectively (two-tailed t test).

5.5 Initial IPO Returns and Lockup Duration

Table 10 reports descriptive statistics for IPO returns on the first trading day after issuance. The returns are computed according to equation (3) and with respect to Hypothesis 2. It can be seen that mean abnormal return is significantly positive for the sample as a whole, and is in turn attributable to 46 companies on five exchanges, Saudi SE, Doha SE, Abu Dhabi SE, Muscat SM, and Amman SE. The samples for a number of the exchanges are too small to yield significant statistics despite their seemingly large positive means. Only two of the exchanges have companies with negative mean returns, and these represent just four of the 61 companies. Overall, the evidence is consistent with IPO underpricing.

Table 10. IPO Returns on First Trading Day

A. Whole sample

	Mean	*Std. Dev.*	*t-value*	*N*
	1.309	1.984	5.1510**	61

B. By exchange

Market	*Mean*	*Std. Dev.*	*t-value*	*N*
Saudi SE	0.929	1.322	3.6987**	24
Doha SE	4.301	3.782	2.5289*	5
Egypt SE	1.063	1.287	1.4302	3
Dubai FM	1.867	-	-	1
Abu Dhabi SE	4.922	1.601	5.3244**	3
Bahrain SE	-0.157	-	-	1
Muscat SM	0.877	0.017	71.417**	2
Morocco SE	-0.187	0.624	-0.5192	3
Tunis SE	0.168	0.198	1.3418	4
Amman SE	0.967	1.349	2.7777**	15

Returns are market-adjusted abnormal returns from equation (3). Two-tailed t-tests for significant difference from zero at the 10 percent (*) and 5 percent levels (**).

Table 11 reports the results of tests of Hypothesis 3, which poses that IPO underpricing will be greater the longer the lockup because a lockup imposed by the authorities is a signal of perceived quality and stability of the firm. However, as discussed in Section 2 and, in particular, Table 5, lockups are not mandatory in all of the countries, and even in those for which they are, some do not vary in their duration. Lockup duration will therefore be a noisy signal of firm quality. The first two rows of Panel A of Table 11 reports the mean market-adjusted initial IPO returns for companies with lockups of 180 days and

for those whose lockups are longer, without controlling for whether the lockups are mandatory or whether authorities in the countries vary their duration according to firm characteristics. It can be see that mean abnormal returns for both shorter and longer lockups are significantly positive, consistent with IPO underpricing, and that the underpricing is greater for longer lockups. The third row confirms that the difference in mean abnormal returns is significant.

The test is repeated in the next pair of rows in Panel B but this time with all companies for which lockups are voluntary removed. Consistent with Hypothesis 3, removal of voluntary lockups makes the duration signal less ambiguous and the difference in underpricing between short and long lockup firms is increased. Panel C drops countries whose lockups are mandatory but do not vary according to firm characteristics. Here, contrary to duration as a signal becoming less ambiguous, the difference between short and long lockup firms narrows rather than widens and the difference is insignificant. However, the weakness of this last result may be due to the small number of highly variable observations for the long lockups. I conclude that IPO underpricing is positively related to lockup duration and the specificity of firm characteristics. These results are consistent with mandatory lockups signaling firm quality.

Table 11. Initial IPO Returns and Lockup Duration

	Lockup period	*Mean*	*Std. Dev.*	*t-value*	*N*
	All lockups, 180 days (1)	0.724	0.998	3.7002*	26
A	All lockups, more than 180 days (2)	1.743	2.421	4.297*	35
	Difference in means = (1) - (2)	-1.019	-	-2.262*	-
	Mandatory lockups only, 180 days (3)	0.724	0.998	3.7002*	26
B	Mandatory lockups only, more than 180 days (4)	1.946	2.484	4.36*	31
	Difference in means = (3) - (4)	-1.222	-	-2.512*	-
	Mandatory variable lockups only, 180 days (5)	0.724	0.998	3.7002*	26
C	Mandatory variable lockups only, more than 180 days (6)	1.309	2.062	1.5548	6
	Difference in means = (5) - (6)	-0.585	-	-0.6765	-

Descriptive statistics for market-adjusted abnormal returns in equation (3) on the first day of trading after IPO issuance. Lockups are classified as to their duration, whether they are mandatory, and whether they are mandatory and variable within a country. * denotes statistical significance at the 5 percent level (two-tailed t tests). Tests for differences in means are unpaired.

5.6 Family Firms and Market Activity Around Unlock Day

Table 12 summarizes market activity for family and non-family firms around the unlock. At expiration day, family firms are not expected to sell out their shares. Therefore, around the unlock date family firms should display lower trading volumes than non-family firms but their returns and volatility of those returns is less clear. Unlike venture capitalists who exist at the unlock date (Field and Hanka, 2001), family firms who are initially reluctant to give up control of their firms are expected to exhibit less trading activity. The graphical analysis shows that returns of family firms are more volatile than non-family firms. The tests below report an insignificant reaction at the unlock date for

both family and non-family firms, and the differences between the CARs and the abnormal volume are insignificant as well.[22]

The abnormal volumes' insignificant test for family firms may suggest that in fact these firms want to keep control. However, the other two tests including the difference between the abnormal volume of both categories are insignificant. Therefore, hypothesis 4 cannot be confirmed and is rejected due to inconclusive results.

Table 12. Market Activity for Family and Non-family Firms

	Mean	*Std. Dev.*	*t-value*	*N*
A. CAR				
Family Firms (1)	-0.0119	0.0439	-1.2706	22
Non-family firms (2)	0.0001	0.0285	0.0313	39
Difference (1) - (2)	-0.0164	-	-0.7489	-
B. Abnormal Volume ($\bar{V}$)				
Family Firms (3)	-0.2095	0.5938	-1.6551	22
Non-family firms (4)	0.1410	1.2033	0.7322	39
Difference (3) - (4)	-0.3506	-	-1.5208	-

Mean three-day cumulative abnormal returns from equation (2) and mean three-day abnormal volume from equation (4), both straddling the unlock day. Tests of differences in means are unpaired.

[22] The same tests were performed for seven- and ten-day CAR and seven- and ten-day Abnormal Volume. The results are also insignificant.

6. Conclusion

The unlocking of a firm's shares is an event that may alarm shareholders and has become of interest to researchers because of the way investors would react at known expiration dates. One of the few studies on lockup expiration has shown a 40 percent increase in trading volume and a 1.5 percent decrease in the three-day abnormal return in the United States between 1988 and 1997 (Field & Hanka, 2001).

This study focused on a region that has received little attention perhaps because of the paucity of data and real or perceived lack of transparency of its firms. Markets in the MENA region are still very much developing. They are highly influenced by the practices of the West and at the same time they diverge from them. With respect to IPOs, some of the major differences are in longer lockups, the legal requirement to lockup (generally mandatory in the MENA, voluntary in the United States) and the types of firms that play an important role in the economy (family firms in the MENA versus venture-backed firms in the United States).

The MENA region does not display the same market reaction as the United States to the unlocking of shares. The lockup expiration in the MENA region passes "almost" uneventfully, perhaps due to the mandatory nature of the lockup. Family firms do not witness unusual differences in price or in trading volume.

MENA IPOs are underpriced just like the IPOs of its Western counterpart. The signaling hypothesis adapted to the region under study presents interesting results. Indeed, in the MENA, the IPO of a firm with a long lockup period is found to be more underpriced than one with a shorter lockup period. Firms with long lockup periods are

likely deemed as a riskier investment by authorities. Therefore, the offer price of the IPO firms is underpriced as a compensation for the risk incurred in the investment. These markets are still fragile. One of the roles of market authorities in the MENA region is to protect investors by assessing the viability of firms undergoing an IPO, they also play the part of the underwriter in imposing the lockup period. Even though the results show that investors in the MENA region do not anticipate the expiration date, the length of the lockup reflects the firm's quality in countries with mandatory and varied lockup laws.

Five years from now, the MENA region markets may be more transparent and more efficient to enable them to attract more capital. Perhaps lockup laws might be transformed into voluntary agreements in an attempt to follow the footsteps of mature Western markets.

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