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Information leakage and insider trading prior to market switches in the UK

by

Angelos Synapis



Submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

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Abstract

This PhD thesis comprises three empirical studies relating to the phenomenon of market switches in the UK and more specifically the moves from the Alternative Investment Market (AIM) to the Main Market (MM) and vice versa. The AIM is a secondary, light and exchange regulated market and the MM is a main and traditional regulated market. The markets have several eligibility and ongoing regulatory differences between them. The main scope of the AIM is to act as the stepping stone to the MM and to attract small and high growth firms that cannot join the MM due its strict eligibility criteria. However, it has rapidly started to attract many firms from all over the world as well as from the MM gaining its own identity and reputation. AIM's success in attracting a large number of firms, spawned the creation of similar markets across the world, while it attracted interest from regulators in considering the establishment of decentralised regulatory markets in other countries. Some recent examples include the launch of the AIM Italia in 2008 and the Tokyo Pro Market (formerly known as Tokyo AIM) in 2009.

The first empirical chapter tests the information leakage hypothesis and explores whether firms experience abnormal stock price reactions prior to the announcement of the move from the AIM (a light regulated market) to the MM (a traditional regulated market) and vice versa. By examining 406 moves between the two markets from 1996 to 2015, I find evidence of abnormal stock returns and abnormal trading volume prior to the announcement of the switches, after controlling for rumours through media coverage and other major corporate announcements. More specifically, I find price reductions and increases in trading volume for the firms that move from the MM to the AIM, a move which is characterised as a market downgrade. On the contrary, I find price run ups and increases in trading volume for the firms that move from the AIM to the MM, a move which is deemed as a market upgrade. The abnormal stock returns on both events remain statistically significant after matching the sample firms with similar firms that did not switch markets during the same period. I further find a significant and contemporaneous relation between the abnormal stock returns and the abnormal trading volume, in line with the information leakage hypothesis.

The second empirical chapter investigates whether corporate insiders trade on their own personal accounts in order to generate profit from the abnormal stock returns triggered from the market switches. I examine insider trading activity in 352 firms that move between the two markets during the period of 1999-2015. Using time series, cross sectional and

difference in differences tests, I find abnormal insider trading activity on both events. In particular, I find increases in corporate insider sales and decreases in corporate insider purchases which translates to significant decreases in corporate insider net purchases six months prior to the official announcement of the switch from the MM to the AIM. In addition, I find insignificant increases in corporate insider purchases and significant decreases in corporate insider sales which results in significant decreases in corporate insider net purchases one year prior to the announcement of the move from the AIM to the MM.

The third empirical chapter explores whether reputable Nominated Advisers (Nomads), firms which are the regulatory body and trading monitor of the AIM, could play a role in reducing the levels of abnormal stock price activities that are documented in the first empirical chapter. By creating a reputation ranking composite variable using five different measures, I find that reputable Nomads reduce the abnormal stock price reactions 60 trading days prior to the announcement of the switches on both events from 1996 to 2015. However, the reductions decrease or even diminish when reputable Nomads simultaneously act as brokers in the respective firms, raising concerns as to whether the Nomads take the necessary safeguards in order to avoid any potential conflict of interest that might arise by having duties of two different roles within the same firm. The results are qualitatively similar after controlling for different ranking benchmarks.

In summary, the main findings of this thesis suggest that informed investors and corporate insiders take advantage of the private information they possess prior to market switches between a light regulated market and a traditional regulated market in order to generate profit. However, I argue that quality and reputable regulators/advisors can mitigate this effect by reducing the information asymmetry between insiders and outsiders. The results can be of interest to academics as I introduce a new corporate event in the information leakage and insider trading literature as well as to policy makers and to regulators as I point to a new direction which lacks focus. Finally, the results can benefit investors as they can potentially avoid market abusive behaviours during these events.

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Author's Declaration

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Printed name: Angelos Synapis

Signature: 

List of abbreviations

A&Ds	Admission and Disclosure Standards
AAR	Average Abnormal Returns
AAV	Average Abnormal Volume
AIM	Alternative Investment Market
AMEX	American Stock Exchange
AR	Abnormal Returns
ASX	Australian Securities Exchange
AV	Abnormal Volume
BHAR	Buy and Hold Abnormal Returns
CA	Concurrent Announcement
CAAR	Cumulative Average Abnormal Returns
CAAV	Cumulative Average Abnormal Volume
CAPM	Capital Asset Pricing Model
CGT	Capital Gains Tax
DiD	Difference in Difference
DoJ	Department of Justice (US)
DTR	Disclosure and Transparency Rules
EASDAQ	European Association of Securities Dealers Automated Quotation
EEA	European Economic Area
EIS	Enterprise Investment Scheme
EU	European Union
FBI	Federal Bureau of Investigation
FCA	Financial Conduct Authority
FSA	Financial Services Authority
FSMA	Financial Services and Markets Act
FT	Financial Times
FTSE	Financial Times Stock Exchange
GAAP	Generally Accepted Accounting Principles
GBP	Great Britain Pound
GDRs	Global Depositary Receipts
HGS	High Growth Segment
ICB	Industry Classification Benchmark
IFRS	International Financial Reporting Standards
IHT	Inheritance Tax
IPO	Initial Public Offering
ISA	Individual Savings Account
ISDX	Icap Securities and Derivatives Exchange
ISIN	International Securities Identification Number
LBO	Leveraged Buyout
LLP	Limited Liability Partnership
LR	Listing Rules

LSE	London Stock Exchange
LTD	Limited (Company)
M&A	Mergers and Acquisitions
M/B	Market to Book
MAD	Market Abuse Directive
MAR	Market Abuse Regulation
MBO	Management Buyout
MiFID	Markets in Financial Instruments Directive
MM	Main Market
MTF	Multilateral Trading Facility
NASDAQ	National Association of Securities Dealers Automated Quotations
NOMADS	Nominated Advisers
NSSBF	National Survey of Small Business Finances
NYSE	New York Stock Exchange
OFEX	Off Exchange
OLS	Ordinary Least Squares
OSE	Oslo Stock Exchange
OTC	Over the Counter
OTF	Organised Trading Facility
PDMR	Person Discharging Managerial Responsibilities
PLC	Public Limited Company
PRA	Prudential Regulation Authority
PSM	Professional Securities Market
QCA	Quoted Companies Alliance
R&D	Research and Development
REC	Recognised Investment Exchanges
RIS	Regulatory Information Service
ROE	Return on Equity
SEC	Securities and Exchange Commission
SEDOL	Stock Exchange Daily Official List
SEO	Seasoned Equity Offering
SFS	Special Fund Segment
SOX	Sarbanes Oxley Act
TSE	Toronto Stock Exchange
UK	United Kingdom
UKLA	United Kingdom Listing Authority
US	United States of America
USM	Unlisted Securities Market

1.Introduction

1.1 Motivation of the study

Corporate insiders usually have access to more information about the future plans of their firms than outside investors and market analysts which might not be manifested to the firm's stock price (Eckbo and Smith, 1998). In the UK, insiders are considered to be the directors of a firm, the executives and any individual that has the power to make managerial decisions, also known as Persons Discharging Managerial Responsibility (PDMRs) as well as their connected persons. According to Section 118 of the Financial Services and Markets Act 2000 (FSMA), firm insiders as well as any other individuals are strictly prohibited to trade when in possession of price sensitive information. The regulators are responsible to ensure that investors do not violate these rules as well as to reduce financial crime in the markets. The Securities and Exchange Commission (SEC), for example, states that "*Insider trading continues to be a high priority area for the SEC's enforcement program*"¹. However, distinguishing between legitimate informed trading and manipulative trading, along with convicting an individual for insider dealing or even proving insider trading is difficult (Fischel and Ross, 1991). As stated by Chris Hamilton, a spokesman of the Financial Conduct Authority (FCA), "*Insider trading cases are extremely complex and are therefore often time consuming*" (Wall Street Journal, 4 January 2014).

Prior literature has well documented that corporate insiders earn abnormal stock returns several months after their trades, outperforming the market both in the US and in the UK (e.g., Jaffe, 1974; Finnerty, 1976; Seyhun, 1986; Pope et al., 1990; Lakonishok and Lee, 2001; Fidrmuc et al., 2006). In addition, studies report that often insiders use their information advantage in order to generate profit by either actively or passively trading (refrain from trading) on their own private accounts prior to major regulatory news announcements (Korczak et al., 2010) or prior to announcements of major corporate events, such as new issue announcements (Karpoff and Lee, 1991; Kahle, 2000), leveraged buyouts (Harlow and Howe, 1993), real estate investment appraisals (Damodaran and Liu, 1993) and takeovers (Agrawal and Nasser, 2012). Another method that insiders use, is trading through other investors or selling private information for a price in order to escape detection (Keown and Pinkerton, 1981), a technique which is known as leaking information to the market or the information leakage hypothesis. Several studies illustrate price run-ups and abnormal

¹ <http://www.sec.gov/spotlight/insidertrading/cases.shtml>

trading volume many days prior to tender offers (Eyssell and Arshadi, 1993) and takeovers (Jabbour et al., 2000; King, 2009; Siganos and Papa, 2015), confirming the existence of information leakage prior to major corporate events. The price run-ups are typically generated as informed trading generally drives prices in the direction consistent with the price sensitive information, reflecting and incorporating that private information into stock prices (Kyle and Viswanathan, 2008).

In an attempt to measure the insider trading activity in the UK markets, the FCA (formerly known as Financial Service Authority or FSA) has introduced in their annual reports the “*market cleanliness statistic*” which constitutes an indicator that reports whether the markets are clean from market abusive behaviours and insider trading (Dubow and Monteiro, 2006; Monteiro, 2007; Goldman et al., 2014). This statistic essentially examines abnormal stock price reactions two days prior to major trading announcements and takeovers that take place on firms included in the FTSE 350. However, the results of the statistics are extrapolated for the entire London Stock Exchange (LSE) markets, creating concerns over the coverage of this measure². In addition, approximately 70% of the criminal sanctions related to insider trading in the UK between 2009 and 2016 are due to insider dealing prior to takeovers³, indicating that the UK regulators put a significant amount of their efforts on takeovers⁴ (some examples of insider dealing cases in the UK are presented in Appendix 1).

So far, both the literature and regulators focus mostly on takeovers or other famous (and notorious for insider trading) corporate events when they attempt to measure or examine insider trading activities. Albeit takeovers are events widely known to greatly affect stock valuations (Jarrell and Poulsen, 1989a; Servaes, 1991; Kaplan and Weisbach, 1992), this behaviour and centred attention could leave space for insiders to engage in market abusive activities in other less popular but equally profitable corporate events. A recent event that has been reported to exhibit abnormal announcement stock returns is the UK market switches, and more specifically the switches between the Alternative Investment Market (AIM), a light and decentralised regulated market, and the Main Market (MM), a traditional regulated market. A move from the MM to the AIM is characterised as negative news and a

² The FCA recognises the weakness of the “*market cleanliness statistic*” in their Annual Report and Accounts 2017/18 and report that they intend to create additional indicators to better evaluate market cleanliness in the UK markets.

³ A total of 12 cases out of the 17 are related to insider trading prior to takeovers. The other cases were related to market moving purchases, forthcoming transactions and joint ventures among others.

⁴ In a similar vein, the US studies report a high percentage of illegal insider trading cases prosecuted by the SEC based on takeovers. For example, 51% of Ahern (2017) and approximately 80% of Meulbroek (1992) samples of illegal insider trading prosecuted by the SEC are prior to takeovers.

market downgrade, triggering negative abnormal announcement stock returns while a move from the AIM to the MM is considered to be positive news and a market upgrade, triggering positive abnormal announcement stock returns (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014). The abnormal announcement stock returns of the market switches could create incentives for investors and insiders to engage in market abusive techniques in order to generate a quick profit by trading on the information of the forthcoming firm transition between the two markets. Hence, this thesis strives to examine whether corporate insider or other investors take advantage of their information privilege by leaking inside information or by engaging in insider trading prior the public announcement of these events during the period of 1996-2015.

The UK provides two listing choices in order to facilitate the different needs that companies may have. The first listing option is the MM, the oldest and prestigious UK market that attracts medium and large firms that are already fully developed. A listing in the MM provides a large and knowledgeable investor pool as well as prestige to the listed firms. However, a listing in the MM also requires commitment to its strict regulatory standards (London Stock Exchange, 2010). The second listing option is the AIM, which was established in 1995 in order to attract small and high growth firms in need of finance. Hence, firms that could not join a traditional regulated market such as the MM due to its high admission, annual and compliance costs would prefer to choose another option such as the AIM (London Stock Exchange, 2015b). The AIM is a light regulated market, with minimum eligibility criteria and ongoing obligations. Initially, it was considered to be a stepping stone to the MM. However, it rapidly started to attract numerous firms from all over the world as well as from the MM (Michie 1999, p. 614-636).

The AIM and the MM have many regulatory differences between them, both on the eligibility criteria and on the ongoing obligations. For instance, the admission criteria for the MM are stricter, imposing a minimum percentage of float of 25%, a minimum of three years of audited financial statements prior to the admission to the market and a minimum market capitalisation of £700,000. In contrast, in the AIM there are no minimum entry criteria. In addition, the two markets function under different corporate governance rules. The MM listed firms have to “*comply or explain*” to the UK corporate governance code while the AIM listed firms just have to disclose whether they follow any corporate governance code. Finally, the AIM firms are not obliged to create an “*insiders list*” while for the MM firms this is mandatory. The “*insiders list*” documents all individuals who are considered to be

insiders in the firm, providing confidence to the market on who might have access to privileged information (London Stock Exchange, 2010; 2012; 2015b).

However, the uniqueness of the AIM lies in its regulatory nature. It has a decentralised regulatory system which is called Nominated Advisers (Nomads), firms which are responsible not only to regulate the AIM listed firms but also to advise and guide them during their entire lifetime in the market. The Nomad firms are also held accountable to oversee the trading activities of the AIM securities that they are responsible for, especially when there is unpublished price sensitive information in relation to these companies. The Nomads are also responsible for sustaining the integrity and stability of the entire AIM. The selection of Nomads is conducted by the LSE and takes into account several criteria, among them is the general reputation of the Nomad firms (London Stock Exchange, 2014a; 2015a; b). Reputable Nomads are deemed to increase the survivability rates of the AIM firms (Espenlaub et al., 2012) while Nomads that provide effective oversight are reported to reduce the post listing underperformance of the firms they supervise (Gerakos et al., 2013). Thus, this thesis also analyses whether reputable Nomads, measured by the market share, can moderate any abnormal market reactions prior to the official announcement of the market movements between the AIM and the MM.

The UK offers a unique environment for the analysis of potential market abusive behaviours prior to market switches between a light regulated market and a traditional regulated market, as the AIM features one of the most popular secondary markets in the world (Doukas and Hoque, 2016). AIM's success has spawned the establishment of several secondary markets that follow similar principles and regulatory features as the AIM⁵. In the European Union (EU) such markets are also known as Multilateral Trading Facilities (MTF). Apart from the European and Asian countries, the US shows an increasing interest in the secondary markets with the Jumpstart Our Business Startups (JOBS) Act of 2012 being the

⁵ Some examples of the markets that were created following the success of the AIM are the Euronext Growth (formerly known as Alternext) which was established in 2005 and operates in Belgium, France and Portugal, the NewConnect which was launched in 2007 and operates in Poland, the AIM Italia which was launched in 2008 and operates in Italy, the Mercado Alternativo launched which was launched in 2008 and operates in Spain, the Bratislava Stock Exchange MTF which was launched in 2008 and operates in Slovakia, the First North, NASDAQ'S European growth market for Nordic countries launched in 2008 and operates in Denmark, Finland, Iceland and Sweden, the Boerse Berlin-Freiverkehr which was launched in 2008 and operates in Germany and the Tokyo Pro Market (formerly known as Tokyo AIM) which was launched in 2009 and operates Japan among others.

first step towards that direction⁶. In addition, there have recently been several discussions considering the benefits and drawbacks as well as the implementation of a secondary market in the US⁷. Market switches are thus of international interest. Examining the two UK markets, with the longest sample period possible, can contribute to the relevant discussion regarding potential insider trading and information leakages.

1.2 Research questions

Following the previous discussion, this study strives to answer the following research questions:

1. Do firms experience abnormal stock price and trading volume activities several days prior to the announcement of the market switches between a light regulated market (the AIM) and a traditional regulated market (the MM) which could be potentially linked to leakage of inside information?
2. Do corporate insiders trade on their own personal accounts in order to generate profit from the abnormal announcement stock returns generated by the market switches between the AIM and the MM?
3. Do reputable Nomads offer higher regulatory and better quality services by mitigating potential abnormal trading patterns compared to their non reputable counterparts?

1.3 Methodology and key findings of the study

This thesis provides evidence of abnormal trading activities prior to the public announcement of the switches between the AIM and the MM. In order to assess the stock returns for potential price run patterns, I measure the abnormal stock returns following a standard event study methodology. I employ an OLS market model following Brown and Warner (1985) and the Buy and Hold Abnormal Returns (BHAR) following Barber and Lyon (1997). I find evidence of abnormal stock returns prior to the official announcement

⁶ The JOBS Act of 2012 effectively reduces the burdens of small firms that seek capital by exempting them from the Sarbanes-Oxley Act of 2002.

⁷ Some examples are the public statement from Luis Aguilar on March 2015, Commissioner at the U.S. Securities and Exchange Commission, on the need for greater secondary market liquidity for small businesses (https://www.sec.gov/news/statement/need-for-greater-secondary-market-liquidity-for-small-businesses.html#_edn33), the testimony from Stephen Luparello on March 2015, former Director of the Division of Trading and Markets, on venture exchanges and small-cap companies (<https://www.sec.gov/news/testimony/testimony-venture-exchanges.html>) as well as the white paper from the CFA Institute in May 2016 with the title “United States Venture Exchange: Has the Time Come?” (<https://www.cfainstitute.org/-/media/documents/article/position-paper/united-states-venture-market.ashx>).

of the switches between the two UK markets. In addition, as the existence of abnormal trading volume constitutes a reason for further investigation over potential price manipulation (Bris, 2005), I measure the trading volume using two different methods. I employ a conservative abnormal trading volume model following Bris (2005) and the average mean adjusted trading volume model following Chae (2005). I find evidence of abnormal trading volume activities prior to the switches from the AIM to the MM and from the MM to the AIM. More specifically, I find price run-ups of approximately 6% and abnormal trading volume of about 3.5%, 60 trading days prior to the public announcement of the switches from the AIM to the MM and stock price reductions of circa -4% and abnormal trading volume of 3.5%, 60 trading days prior to the official announcement of the moves from the MM to the AIM.

In order to control for other factors that might trigger abnormal activities prior to the announcements of the events, I hand collect any rumours and other major corporate announcements (e.g. takeovers, mergers, annual results, half year results) prior to the market switching events. The results report that rumours and other major corporate events can only partly explain these abnormal stock patterns, with a significant percentage of abnormal stock returns being unexplained in line with the information leakage hypothesis. In addition, I find a contemporaneous relation between abnormal stock returns and abnormal trading volume 60 trading days prior to the official announcement on both moves, which is also a sign of leakage of information. Furthermore, after matching the firms that switch markets with a sample of similar size, value, year and industry characteristics firms that did not switch markets during the same period, I find that the switching firms experience significantly higher or lower stock returns, depending on the switch, compared to the control firms' sample. The results are in line with prior studies that examine potential leakage of inside information prior to takeovers in the US (Eysell and Arshadi, 1993), in Canada (Jabbour et al., 2000; King, 2009) and in the UK (Holland and Hodgkinson, 1994; Siganos and Papa, 2015).

In addition to assessing the stock price and trading volume patterns ahead of the market moves, this study provides evidence of abnormal disclosed corporate insider trading activities several months prior to the public announcement of the switches between the AIM and the MM. Since there is evidence of information leakage prior to the market switches, an examination of corporate insiders' behaviour provides further insight over potential market abusive behaviours around these events. I separately examine corporate insider purchases, sales and net purchases using three different insider trading measurements (the amount of

insider trades, the amount of shares traded and the value of shares traded) following Agrawal and Nasser (2012). By using a time series, a cross sectional and a difference in difference (DiD) methodology, I find that corporate insiders change their trading strategies ahead of both market switches. Specifically, I find insiders to significantly increase their sales and decrease their purchases, resulting in significant decreases in net purchases (measured as purchases minus sales) six months prior the announcement of the moves from the MM to the AIM in line with the active insider trading hypothesis. In addition, I find a significant increase in net purchases one year prior to the announcement of the switches from the AIM to the MM. However, the results for the latter event appear to be weaker, a finding which could be explained by the fact that the AIM firms are under no obligation to create an insider list, which could lead to missing disclosed insider trades. The results of the disclosed insider trading tests are similar with previous literature on other major corporate events or announcements (e.g. John and Larry, 1991; Karpoff and Lee, 1991; Kahle, 2000; Agrawal and Nasser, 2012, Agrawal and Cooper, 2015) providing evidence that the market switches constitute an event that requires further regulatory attention.

Finally, this study reports evidence of the regulatory quality offered by reputable Nomads. In order to measure the reputation of Nomads, I follow a ranking methodology similar to the one used in Bushman et al. (2004) and Espenlaub et al. (2012), using a composite variable ranking method which takes into account the unweighted average of five different measurements. The measures used are (i) the Nomads market share in terms of new issues in the year prior to the switch, (ii) the cumulative Nomads market shares in terms of new issues in the years prior to the switch, (iii) the Nomads market share in terms of proceeds a Nomad backed in the year before the firm market switch, (iv) the cumulative market share in terms of proceeds a Nomad backed in the years before the firm market switch and (v) the Nomads age in the year prior to the switch. The market share measurement as a proxy for reputation and advisor quality is well-established in literature (e.g. Megginson and Weiss, 1991; Rau, 2000; Kale et al., 2003; Ismail, 2010) while the age of the Nomads prior to the switches, proxies for the overall experience and stability of the firm (Espenlaub et al., 2012). The ranking is performed on a yearly basis and reputable Nomads are considered those that fall in the top five deciles of the composite yearly ranking variable. The results report that reputable Nomads reduce the abnormal stock returns prior to the official announcement of the switches from the AIM to the MM and vice versa. Suprisingly however, I find that when Nomads also act as brokers in the same firms, the effect on the price reductions no longer hold, suggesting that this may be a result of not taking the appropriate safeguards in order to

mitigate potential conflicts of interest created by the Nomads acting on both roles. The results remain robust when I control for different yearly ranking deciles of the composite variable such as the top four, top three, top two and top one deciles.

1.4 Contribution of the thesis

The contribution of this study is threefold. First, I introduce a new corporate event contributing to the information leakage and insider trading literature. Prior studies have reported that insiders may leak information to other investors (e.g. Eysell and Arshadi, 1993; Holland and Hodgkinson, 1994; Jabbour et al., 2000; Christophe et al., 2004; King, 2009; Berkman et al., 2016) or trade on their own personal accounts (e.g. John and Larry, 1991, Karpoff and Lee, 1991; Seyhun and Bradley, 1997; Kahle, 2000; Agrawal and Nasser, 2012; Agrawal and Cooper, 2015) prior to the public announcements of major corporate events such as takeovers, SEOs, MBOs and earnings surprises among others. To the best of my knowledge, this is the first study that examines information leakage and insider trading activities prior to market switches and more specifically from a light, decentralised and exchange regulated market (the AIM) to a traditional regulated market (the MM) and vice versa. The market switches between different regulatory markets have become of international interest as many countries have introduced or considering introducing secondary markets in order to facilitate the needs of firms.

Second this study contributes to the long lasting literature debate between the opponents of insider trading regulation (e.g. Heller, 1982; Carlton and Fischel, 1983; Easterbrook, 1985; Macey, 1991; Bergmans, 1991) and the proponents of insider trading regulation (e.g. Schotland, 1967; Levmore, 1988; King et al., 1988; Ausubel, 1990) supporting the view that the lack of regulation and especially enforcement leads to proliferation of market abusive techniques and insider trading. Third, I highlight the significance of reputable regulators in mitigating any abnormal pre-announcement stock patterns during the market switches, extending the work of McLaughlin (1992), Servaes and Zenner (1996), Rau (2000), Kale et al. (2003), Ismail (2010) and Golubov et al. (2012) on reputable advisors and the work of Espenlaub et al. (2012) on reputable Nomads.

Apart for the contribution to the literature the results of this study have important implications to practitioners, as I point to a new direction which so far lacks focus by both the regulators and policy makers. Recent papers published by the FCA, conclude that during the last years the UK markets are clearer from insider trading and market abusive behaviours. These results however are taking mostly into account two days' abnormal price actions prior

to major trading announcements and takeovers in the FTSE 350 as their benchmark (Dubow and Monteiro, 2006; Monteiro, 2007; Goldman et al., 2014). The results of this study suggest that the UK regulators should take a wider view when it comes to insider trading and information leakage phenomena, as the market investors could fall victims of market abusive activities in a plethora of different trading settings such as the moves between the two UK markets and therefore should be equally taken into consideration. The results also suggest that the UK regulators and the LSE should strive to attract high quality and reputable regulatory firms or Nomads in order to maintain the integrity and stability of their light regulatory segment. Finally, the results suggest that the LSE might have to consider taking actions in order to secure that the reputable Nomad firms take the appropriate safeguards in order to reduce any conflicts of interest that might arise from acting in both the Nomad and the broker roles.

1.5 Chapters overview and structure of the thesis

The following of the thesis is structured as follows: The second chapter provides the background of insider trading theory, the debates between scholars on insider trading and the insider trading regulation in the UK. Chapter 3 presents a detailed description of the history of the UK markets, the regulatory differences between the AIM and the MM and the role of advisors and regulators on those markets. Chapter 4 describes the first empirical analysis that examines whether firms experience abnormal stock returns and trading volume prior to the official announcement of the moves from the AIM to the MM and vice versa, in line with the information leakage hypothesis. Chapter 5 reports the second empirical work that analyses whether corporate insiders trade on their own personal accounts prior to the public announcements of the moves between the two UK markets in order to generate profit. Chapter 6 describes the last empirical analysis that examines whether reputable Nomads, which are the main regulators and advisors of the AIM, could reduce the levels of abnormal stock returns prior to the announcement of the switches between the AIM and the MM. Finally, Chapter 7 concludes by providing the implications and limitations of the study as well as suggestions for further studies.

2.Theoretical background and insider trading debates

2.1 Introduction

The three empirical chapters of this thesis are based on the agency and information asymmetry theories as these are the fundamental theories that support and explain market abusive behaviours and thus insider trading activities. Hence, this chapter provides insights on the agency theory and the creation of the agency issue using both theoretical and empirical evidence from the literature. It mainly focuses on type one agency problem which is the agency issue that could lead to insider trading as it arises from the separation of ownership and control (Jensen and Meckling, 1976), rather than type two agency problem which may be initiated by conflicts of interest between controlling and non-controlling shareholders (La Porta et al., 1999; Gilson and Gordon, 2003). This chapter further analyses the agency costs as well as tools associated with the reduction of the agency issue in firms. It provides insights on the information asymmetry theory, focusing on the information differences between insiders and outsiders and on how outside investors could mitigate the risk of trading against informed investors in the markets. Finally, it provides a literature review of the regulatory debates on insider trading, providing arguments from both the proponents and the opponents of insider trading regulation.

2.2 Agency theory

In his seminal work about the nature of the firm, Coase (1937) examines, the legal relationship between the “*master and the servant*” or the “*employer and employee*”. Under this relationship, the master or the employer, has the right to supervise and control the servant’s or employee’s work in person or through another servant or employee. In some cases, however, the employee has to perform actions which require his/her own decision making in order to maximise the employer’s welfare. These actions make it harder for the employer to supervise or even control the employee, especially in large public firms, leaving space for the creation of agency problems.

The first notion about the presence of the agency problem was introduced centuries ago by Adam Smith (1776) in his book “*the wealth of nations*”. In his work he argues, that when people manage the wealth of other individuals, they may not do it as well as they would if it was their own, highlighting a potential conflict of interest between the individuals who

manage the wealth and the individuals who own it⁸. The agency theory was developed with the scope to model the relationship between the ownership (principal) and the control (agent), who represents the ownership in several corporate matters. The theory is connected to economic utilitarianism, which postulates that any rational individual would use alternative ways in order to maximise their own utility (Ross, 1973). Furthermore, the agency theory has been developed following two different approaches, the positivist and the principal-agent. The positivist approach focuses on identifying potential circumstances on which the ownership and control are likely to support different aims, while the principal-agent approach focuses on the general theory of this relationship which involves different specifications of assumptions and mathematical proofs (Eisenhardt, 1989).

According to the agency theory, if both the ownership and the control are utility maximisers, there is a high possibility that the agent may not always act for the best benefit of the principal. Hence, the essence of agency theory is the inherent conflict between two or more individuals with different goals or preferences when they engage in a cooperative affair. It is this conflict of interest between the ownership and control that creates the agency issue, a phenomenon that is widely studied by several academics in a range of disciplines (Alchian and Demsetz, 1972; Mitnick, 1975; Jensen and Meckling, 1976; Demski and Feltham, 1978; Fama, 1980; Fama and Jensen, 1983a; b; Jensen, 1986). However, the magnitude of the agency conflicts could vary across different companies depending on several factors such as, the complexity under which the firm operates⁹, the attractiveness of perquisites or the resistance managers face when they try to exercise their own preferences against the preferences of the owners (Jensen and Meckling, 1976).

A perfect example of an agency relationship is the relationship between a firm's shareholders (principal) and the management (agent). The shareholders role is to supply capital, create incentives and to bear risk while on the other hand the role of the management is to make the appropriate decisions on behalf of the shareholders and to also bear some risk. However, the latter party may take decisions aiming to maximise their own utility rather the owner's welfare creating a conflict of interest between the two parties. The utility

⁸ As stated by Adam Smith in book IV "*The divided capital of the Bank of England amounts, at present, to ten millions seven hundred and eighty thousand pounds. The directors of such companies, however, being the managers rather of other people's money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own*".

⁹ For example, in small and less complex companies, expertise and knowledge which is critical for decision making and control is clustered in few agents, thus reducing the level of conflict of interest (Fama and Jensen, 1983b).

maximisation of the agent could be achieved by a range of managerial activities, such as the avoidance of optimal investments, the manipulation of the reports for their own benefit (e.g. secure bonuses, build or improve reputation) or even the consumption of the firm's resources (Dey, 2008). Another managerial activity that can increase the utility maximisation of the agent is insider trading. When insiders engage in insider trading, they act for their own best benefit at the expense of the ownership due to the fact that they risk the reputation of their firm in order to increase their personal wealth.

As stated by Lambert (2001), those conflicts of interest between the ownership and control usually appear due to lack of effort by the agent, due to lack of concern about the future of the company or due to different risk tolerance between the principal and the agent. In line, Eisenhardt (1989) argues that the conflicts of interest could be generated due to adverse selections which translates to the misleading disclosure of qualities and skills by the agent or due to moral hazard which refers to a shirking agent due to minimum effort produced on his/her behalf.

On empirical evidence on the agency issue, Amihud and Lev (1981) examine conglomerate mergers in the 309 largest industrial firms in the US from 1961 to 1970. The authors suggest that conglomerate mergers is an appropriate event for the examination of the agency issue, as they are considered to align with the best interest of the managers since it reduces the risk in their firm through diversification, mitigating the possibility of a firm default, which will results in losing their managerial position. Contrary to that view, conglomerate mergers are not in the best interest of the shareholders, as they can diversify their risk through their own stock portfolio. Consistent with the agency theory, the authors report that the owner controlled firms tend to engage in less conglomerate mergers than the management controlled firms. In a similar vein, Walkling and Long (1984) examine managers resistance to takeovers in 95 cash tender offers during the period of 1972-1977. The authors support that resistance to takeovers is in the benefit of the ownership, however it is not in the interest of the management due to the fact they may lose their position after a successful takeover. In line with the agency theory, the authors find that managers that have a significant amount of equity positions within their company, they are less likely to cause resistance against a takeover bid.

Along the same lines, Agrawal and Mandelker (1987) study the relationship between common stock and stock option holdings of managers and the performance of investment decisions (acquisitions by mergers, acquisitions by tender offers and sell-offs) made by 209

companies during the period of 1974-1982 in the US. The authors report that the holdings of managers are higher (lower) for investments with higher (lower) announcement returns, indicating that there is a relation between security holdings of managers and firm's investment decisions. Overall, in line with the agency theory, the authors conclude that managerial holdings in common stocks and options could align the managerial and shareholders preferences.

2.2.1 Agency costs and reduction of the agency issue

In order to mitigate the separation between ownership and control, the ownership of the organisation must bear some costs as a wealth reduction with the scope of aligning the incentives of the two parties which are known as agency costs. These costs could be incurred for external monitoring activities or devices that provide additional information that discipline the agents on behalf of the principals (e.g. board of directors, auditors, financial analysts), structuring costs and costs from bonding contracts between agents with conflicting interests or residual losses from dysfunctional decisions (Jensen and Meckling, 1976). Additionally, a firm could also implement feasible payment schemes such as bonus or penalty schemes. However, among the two payment schemes, the heavy penalties are reported to be superior (Mirrlees, 1999). Establishing controls might prove to be costly for the organisations, however, Crutchley and Hansen (1989) point out actions that could reduce the costs and align the two parties' interests towards the same direction. The authors argue, that this can be achieved by increasing the management's stock ownership, by increasing the dividends distribution (even though paying higher dividends is not costless) or by using more debt financing. Failure from companies to establish the appropriate controls could lead to agents that are more likely to engage in actions that deviate from the best interest of the ownership (Fama and Jensen, 1983b).

On empirical evidence, Agrawal and Knoeber (1996) analyse seven control mechanism against the agency issue on approximately 400 large US firms, by examining the relation between the mechanisms and firm performance, measured by Tobin's Q. The seven control mechanism are shareholdings of institutions, large block holders and insiders as they can increase managerial monitoring, debt policy which could provide monitoring by the lenders, the use of outside directors as a monitoring mechanism, the market for corporate control as it can impose discipline to the managers through penalties and the managerial labour market as it could potentially motivate the managers. The authors find evidence of interdependence among the seven control mechanisms, however when they ignore the interdependence, only debt policy, representation on the board from outsiders, insider shareholding and activity in

the corporate control market are related to firm performance. Finally, when using a simultaneous equations estimation, they report that the only control mechanism that persist is the effect of outsiders in the board of directors, indicating that this corporate control could potentially be one of the most effective mechanisms against the agency issue.

Ang et al. (2000) examine a sample of small US firms who are considered to experience zero agency costs, since their management owns 100% of their equity, collected from The Federal Reserve Board's National Survey of Small Business Finances (NSSBF). The authors measure the agency costs using two alternative methodologies. The first methodology is the difference in expenses between a company with a certain management and ownership structure and the zero agency cost sample companies while the second measure is calculated as the ratio of annual sales over total assets. The authors report that the agency costs are higher for the firms that are not totally owned by their management while these costs appear to rise as the equity share of the owner-manager declines. They also add that bank monitoring further reduces the agency costs. Similar results are also reported by Singh and Davidson III (2003) who extend the previous results in large public US firms. More specifically, the authors find that higher inside ownership aligns the interest of shareholders and management. They also report that board composition does not influence the agency problems while outside block ownership has only a limited effect in reducing it.

Contrary to the latter view, Anderson and Reeb (2004) argue that board independence plays an important role for the mitigation of the agency issue as they report that when independent directors have greater power compared to family blockholders the interest of outside investors is better protected. In a similar view Jaggi et al. (2009) examining 391 Hong Kong firms from 1998 to 2000, find that a higher proportion of independent directors mitigates the agency issue by reducing the levels of earnings manipulation in the firms. A finding which is supported by Setia-Atmaja et al. (2011) who examine 462 family firms listed in Australian Securities Exchange (ASX) during the period of 2000-2004 and find that the presence of independent directors could significantly reduce the agency issues. More specifically, the authors report that higher percentages of independent directors reduce discretionary accruals which suggests that independent directors mitigate earnings management by providing better monitoring, thus reducing the agency issues.

Apart from the controls that are applied by the ownership of corporations, there are also country and market controls that could be implemented in order to mitigate potential agency issues. For example, another tool that could reduce the agency problems in public firms, is

high quality and reputable stock exchanges. The stock markets act as external monitoring devices as they specialise in pricing stocks as well as moving them between shareholders for a small fee. This external monitoring mechanism adds additional pressure to the corporation's agents while they orient their decisions towards the interests of the principals (Fama and Jensen, 1983b). Another external option that could aid in reducing the agency issues is through improving the structure of the society. As stated by Spremann and Bamberg (1987), a healthy society could promote and encourage trust between individuals by rewarding virtues such as reliability, honesty and selflessness.

Furthermore, more robust legal environments could enhance the ability of the judiciary to supervise and implement shareholders' contractual rights thereby limiting managerial expropriation and offering better monitoring to shareholders at lower costs (Hooper et al., 2009). This is consistent with the argument that by improving the quality of accounting standards and the quality of corporate governance provides more confidence on equity financing by firms (La Porta et al., 1997). In line with the previous claims, empirical evidence reports that companies that operate under more robust legal systems with higher transparency and better monitoring, provide better outside investor protection (La Porta et al., 2002), lower ex ante investment uncertainty (Hail and Leuz, 2006) while they also contribute to the growth of the economy and the development of the markets (La Porta et al., 1998); thus reducing the agency issues.

2.2.2 Information asymmetry

The agency problem is reported to be exaggerated by the presence of information asymmetry. The information asymmetry also known as the "*lemons*" problem is created by the information differences between two parties (Akerlof, 1970). Such parties could be the management and the shareholders or in general the insiders and outsiders of a corporation. The information asymmetries are generated due to the fact that insiders have better information on the firm's past and future economic performance. This issue is observed in all companies since the insiders have continuous information about their firm while outsiders receive information at discrete points of time. Information asymmetries are reported to be more evident on firms with high R&D expenditures, as it is difficult to measure and identify the information based on the value and productivity of R&D (Aboody and Lev, 2000). In addition, information asymmetries tend to be greater in private and small corporations, which oftentimes do not have long institutional history and are not required to disclose publicly any firm information (Butler et al., 2007).

In firms with high information asymmetry, insiders can take advantage of this issue and trade based on information, which is not revealed to outsiders, generating profit on the expense of the latter. This action is known as insider trading¹⁰. Thus, information for the uninformed investors creates a risk, as the trading profits of the informed investors are trading losses for the uninformed investors. Since outsiders experience this increased risk on trading with informed investors, they demand a return premium in order to compensate for the potential losses they may suffer. In order to further reduce their risk, outsiders can choose, through their portfolio choices, to trade on stocks that have lower risk of losing again better informed investors (O'Hara, 2003). According to literature, the risk of trading against investor that possess price sensitive information depends on two variables. The first variable is how frequently those investors acquire price sensitive information while the second is how intensely they trade based on that information (Brown et al., 2004). As stated by Black (1986), informed traders, trade more intensely the farther the stock price gets from its value, guiding the price towards its real value over time. The farther the price of a stock from its value the faster it moves back to it.

As reported in Milgrom and Stokey (1982) and Wang (1994), if there is a high possibility of trading with informed investors, then uninformed or less informed investors will avoid participating in the markets. Of course, trades that are based on price sensitive information are extremely difficult to uncover, nevertheless, the presence of informed trading could be potentially be inferred from the abnormal number of purchases or sales. However, the literature reports several tools that could be used in order to mitigate information asymmetry and thus informed trading, such as frequent and better quality accounting disclosures, more informative financial reports, frequent conference call activity, high financial analyst coverage and rating agencies who uncover insiders' superior information (Healy and Palepu, 2001; Brown et al., 2004; Brown and Hillegeist, 2007; Cassar et al., 2015).

Based on the above theories that explored the agency issue as well as the information asymmetry, insiders that are interested on increasing their wealth rather than the shareholder's wealth could use the information asymmetry between them and outside investors and trade prior to the official announcements of the market switches in order to generate profit at the expense of the firm. However, the regulators responsibility is to

¹⁰ According to the FCA's handbook and more specifically to the Market Abuse Rules (MAR) section, insider trading occurs when an insider deals or attempts to deal in the basis of inside information.

mitigate or even eliminate these actions. Nevertheless, the introduction of insider trading regulations has initiated several debates between academics.

2.3 Debate on insider trading activities

At the start of the 19th century, after the Wall Street Crash of 1929, the US introduced legislation against insider trading for the first time in the world¹¹. This regulation is known as Securities Act of 1933¹². Before that law, it was not illegal for insiders to trade based on price sensitive information. This fundamental change initiated a series of debates among academics. Legal scholars have attempted to understand whether the benefits of insider trading outweigh its costs and have raised many debates as to whether insider trading should be considered legal or it should be strictly regulated. They further raised arguments as to why allowing the practice of insider trading based on privileged information could be healthy or detrimental for a corporation and its' investors.

Hence, the majority of scholars arguing on the insider trading legislation, split into two main schools of thought, the proponents and the opponents of insider trading regulations. However, some scholars remained neutral suggesting that there are both negative and positive aspects on insider trading. For instance, Leland (1992) supports that when insider trading is permitted, the stock prices better reflect their true value, without however neglecting the fact that the markets become less liquid and that insider trading could potentially reduce the expected return of the outsiders' investments as they trade with better informed investors. In a similar vein, Fishman and Hagerty (1992) argue that prohibiting insider trading on the basis of private information but allowing insider trading on the basis of publicly known information, could make the markets more efficient. The authors further add that requiring insiders to disclose private information before trading, could lead to more efficient markets than entirely banning them from trading.

2.3.1 The opponents of insider trading regulation

The first and one of the main supporters of deregulation of insider dealing is Manne (1966). In his pioneering work, in favour of insider trading, he argues that the trading by company's insiders allows information to rapidly be incorporated into the share price and thus increases the market efficiency thereby leading to higher levels of economic output and reducing

¹¹ <https://www.sec.gov/news/speech/speecharchive/1998/spch221.htm>

¹² The Securities Act of 1933, the Glass–Steagall Banking Act of 1933 and the Securities Exchange Act of 1934 were all passed as a result of the famous Pecora senate hearing before the committee on banking and currency, which exposed trading based on inside information and other market abusive practices.

market uncertainty. In addition, the author supports that unregulated insider trading could also promote smoothness to the market, by causing gradual rather than sharp price movements, which a disclosure would cause. The author further claims that insider trading activities can align the interest between the management and outsiders, as it allows managers to profit from the increase in the firms' value that their work generates. Accordingly, the insiders' profit from the transactions is not a crime, but the cost the society has to pay for the acquisition of information and for achieving greater market efficiency¹³ (Heller, 1982).

Other opponents of insider trading regulation claim that since investors value the information received from regular disclosures, they would also value the information from a trade made by an insider as an additional source of information. This way insider trading facilitates the stock price to move closer to its real value. Insider trading could also be of value to the firm because through it the company can convey information to the investors which could be either hard or expensive to disclose. It also gives them another tool that could be used to increase or decrease the quantity of information they wish to share with the public. In addition, opponents of insider trading regulation suggest that insider trading would assist firms to distinguish the high quality managers from the low quality ones, since superior managers would be willing to accept a compensation scheme based on insider dealing, due to the fact that they would be able to generate valuable information while low performance managers would not (Carlton and Fischel, 1983; Easterbrook, 1985).

In line with the latter views, Macey (1991) and Bergmans (1991) argue that inside information is a property that belongs to the firm and thus it can be used to compensate managers for their hard work, thereby promoting managerial incentives, innovation and managers' willingness to take risks, which are necessary components for creating economic value. Macey (1991) also adds that banning insider trading would not benefit the shareholders of the firms but the market professionals. Since insiders will not be able to trade on information first, the next group on the ladder that will get the information will be the market professionals. Hence, this group will trade on price sensitive information before it is known to the public and they will be the ones to generate profit. Consequently, the profits will not stay within the firm, which would be the case if insiders traded first, and shareholders will then have to pay higher salaries to the management, due to the lack of trading opportunities given to them.

¹³ Insider dealing has also been characterised as a "*victimless crime*" by Sir Martin Jacob, the head of Barclays bank between 1985 and 1993 (Financial Times, 6 December 1986).

2.3.2 The proponents of insider trading regulation

On the other side of the debate, supporters of the insider trading laws, claim that legalising insider trading, could possibly create incentives for insiders to delay reporting information, through the delay of disclosures, in order to have more time to take advantage of the information in their possession. In addition, they argue that insider trading activities may create a moral hazard, because they allow insiders to trade on negative news. For instance, an insider could short sell before the public announcement of unfavourable news in order to benefit from the negative returns the event would trigger. Furthermore, the lack of regulation can also create incentives for insiders to manipulate the market by sharing false information about their company's stock in order to purchase at lower prices or sell at higher prices (Schotland, 1967; Levmore, 1988).

In a similar vein, King and Roell (1988) further state that trading is a zero sum game, in which any profit accruing to an insider is scaled by a loss of an outside investor or the loss of the market participants in general. The authors also postulate that insider dealing can force the market makers to increase the bid-ask spreads as a response to the increased risk they suffer from the potential losses they might incur from dealing with an insider (who has information advantage) and therefore they would rather choose to pass them to other uninformed or less informed investors. Thus, in the long run the victims of insider trading based on price sensitive information are the ordinary investors.

Furthermore, insider trading has been characterised unfair and immoral, against good business ethics, hurting not only the outsiders but also the public confidence and the market as a whole (Brudney, 1979; Scheppele, 1993). In line with the previous arguments, Ausubel (1990) supports the view that regulating insider trading would promote public confidence and establish fairness to the markets, thus it will mitigate any social and ethical concerns and it will allow outsiders to invest freely in the stock markets. Accordingly, the confidence in the markets would also promote the welfare of insiders because they would benefit from outside investments which is a source of capital for their corporations.

Consistent with the previous claims, Klock (1993) argues that the opponents of insider trading regulations mistreat the meaning of market efficiency by supporting the view that the stock prices will adjust faster to their proper value due to insider dealing. The author further adds, that market efficiency is not about how fast the price reaches its real value, but about how quickly the market adjusts to the announcement of new information. The author

also claims that insider trading can reduce competition¹⁴ while it is associated with an increase in trading costs and loss of stock liquidity.

Even though academics have widely debated over the pros and cons of insider dealing, the UK regulators follow a strict line for market abusive behaviours, as they argue that insider dealing based on price sensitive information is a serious crime and must be treated as such since it damages the integrity and stability of the UK markets. The UK regulators also support the view that insider trading jeopardises the development of proper and fair markets while it reduces the confidence investors have in them. In their post-conviction announcements, they emphasise that they are not willing to tolerate insider trading while they declare that they are determined to take very strong actions against anyone who is involved in such practices¹⁵. However, the UK regulators and more specifically the FCA has also received harsh criticism for their work against market abusive activities and insider trading¹⁶.

2.4 Conclusion

This chapter investigated the main theories behind market abusive and insider trading behaviours based on theoretical and empirical evidence. The conflict of interest between two or more individuals in combination with the information asymmetries between the insiders of a firm and the outside investors could lead to practices that damage the confidence investors have in the markets. The chapter further analysed the economic benefits and drawbacks of insider trading activities as well as the arguments of the proponents and the opponents of the insider trading legislation. However, the insider trading legislations have been developed substantially through the years in order to follow the market's needs. The

¹⁴ The reduction of competition is also supported by Fishman and Hegerty (1992) who states that insider dealing could discourage outsiders, such as market professionals or market analysts, from solely generating information which might lead to lower competition and less informed markets in general.

¹⁵ After the prosecution of Matthew Uberoi and his father Neel Uberoi for generating approximately £110,000 profit based on non-public information, Margaret Cole, director of enforcement and financial crime of the FCA (former FSA), said “*Insider dealing is not a victimless crime and we remain committed to stamping out this type of fraud by those trusted with inside information. Insider dealing damages the very confidence that underpins the integrity of our markets. By continuing to prosecute these crimes we believe we are achieving credible deterrence in this area, sending an emphatic message that insider dealing is a serious crime and will be treated as such*” (Financial Times, 4 November 2009).

¹⁶ Andrew Tyrie MP, Chairman of the Treasury Committee, quoted saying “*The FCA’s work affects millions of consumers, and thousands of firms and their employees throughout the UK. It performs a role of the utmost importance: protecting consumers and ensuring that the markets function well. We rely on it to do a good job... The FCA needs to do more to satisfy the Parliament, and the public...*” (<https://www.parliament.uk/business/committees/committees-a-z/commons-select/treasury-committee/news/fca-pre-briefing-incident-march-2014/>).

next chapter analytically explains the insider trading regulations in the UK from 1980. Furthermore, since different exchanges have different regulatory approaches, the next chapter also presents the UK markets and the main difference between the secondary market of the UK, the AIM, and the traditional regulated market of the UK, the MM.

3. The insider trading regulations and the exchanges in the UK

3.1 Introduction

This chapter describes the background on the insider trading regulations in the UK and their development from their introduction in 1980. It provides a detailed description of the history of the UK markets and on how they developed through the years. Furthermore, it explains all the different segments provided by the LSE in order to facilitate firm needs as well as illustrates tables and graphs of the IPOs in the AIM and the MM. It also analyses the regulatory differences between the AIM and the MM, both on the eligibility criteria and on the ongoing obligations, by presenting the rules of the exchanges as well as country laws. Finally, it analyses the role of advisors in the markets, focusing on the unique phenomenon of Nomads by providing details on the necessary requirements in order for a firm to become a Nomad, as well as the responsibilities that Nomad firms bear.

3.2 The development of insider trading regulations in the UK

Until 1980, there was no specific legislation about insider dealing in the UK. The only form of regulation in place was the director's disclosure when dealing on their firm's securities. In the early 70s due to the absence of regulation, professional bodies started to provide a form of self-regulated rules, such as the LSE¹⁷ and the City Panel of Takeovers and Mergers. The introduction of the Companies Act of 1980 was the first time that insider dealing was considered as a criminal offence in the UK. According to Part V, section 68 of the Act, individuals connected with the firm who are in possession of unpublished price sensitive information are not allowed to trade in the firm's securities or counsel any other individual to deal on these securities.

The insider trading legislation promoted by the Companies Act 1980 was contained in the Company Securities (Insider Dealing) Act 1985 and underwent some minor changes by the Financial Services Act 1986. In November 1989, the EU published the Council Directive 89/552 with the purpose of coordinating the insider trading regulation among the European Union countries. In accordance with the Council Directive 89/552, the UK repealed the Company Securities (Insider Dealing) Act 1985 and introduced the Criminal Justice Act of 1993, improving the definitions of insiders and securities. In November of 2001, the UK

¹⁷ The LSE introduced the Model Code in 1977 which is a set of guidelines rather than rules followed on a voluntary basis (Hillier and Marshall, 1998). The Model Code was later adopted by Chapter 9 of the Listing Rules.

parliament introduced a civil offence on market abuse by enacting the FSMA 2000 in order to promote investors protection and to reduce market exploitation. According to the section 118 of the Act, individuals (not only insiders) are prohibited to trade while in possession of non-public information, creating false and misleading information or market impressions and distorting the market (Alexander, 2001). However, once again in 2003 the UK required to broaden the FSMA's section 118 definitions following the EU Market Abuse Directive (MAD).

After the introduction of the FSMA, in December 2001, the UK Government established the FSA (now known as FCA) in order to regulate the financial markets, exchanges and firms. The FSA is an independent, non-governmental body, which is given statutory powers by the FSMA and is funded by the firms they regulate. The FSA holds accountable to Treasury Ministers and through them to the UK Parliament. Its objective is to reduce financial crime, to enhance investor protection and market confidence and to promote financial stability in the UK markets. The FSA has the power to prosecute insider trading cases under criminal law while under the Financial Service Act of 2010 it has the power to ban financial professionals for market abuse. However, the Financial Services Act of 2012 abolished the FSA with effect from the 1st of April 2013 and replaced it with the Prudential Regulatory Authority (PRA) of the bank of England, which is responsible for the regulation and supervision of banks, and the FCA which is responsible for honest and effective markets and firms.

Nevertheless, Dubow and Monteiro (2006) report that the introduction of the FSMA 2000 and the FSA in 2001 did not decrease the insider trading activities in the UK markets. Literature suggests that good laws that deter prohibited activities must have a combination of both severity of punishment and high probability of detection (Becker, 1968). In line, Beny (2005) finds that strict inside trading laws are more effective than light laws, however Frijns et al. (2013) report that the introduction of criminal sanctions in New Zealand in 2008 was unsuccessful due to the country's poor enforcement. Similar results are also reported by Bhattacharya and Daouk (2002), who examine the impact of the introduction and initial enforcement of insider trading laws on the cost of capital. The authors find that the introduction of laws has no effect on the cost of capital, but they report a significant reduction following the first enforcement. Finally, Bhattacharya and Daouk (2009) find that the countries that enact laws but do not enforce them, experience higher costs of capital than those that do not enact insider trading laws at all; concluding that for insider laws to work, they must be enforceable, else if they are poorly enforced it may be better with no laws at

all. Hence, based on the above literature, the low impact of the FSMA on insider trading activities could be attributed to the weak enforcement of the UK, compare to that of the US¹⁸ (a detailed analysis on the main regulatory differences between the UK and the US can be found in Appendix 2), and the challenges the FCA faces when it comes to criminal prosecution cases with regards to insider dealing¹⁹.

3.2.1 Recent insider trading regulations in the UK

According to section 96b of FSMA, insiders are considered the directors as well as the senior executives that have access to inside information and/or have the power to take managerial decisions, also called PDMRs and their connected persons. The Disclosure and Transparency Rules 3 (DTR) mandate that insiders and their connected persons are to notify their firm for all transactions relating to the company shares within four business days. Accordingly, the company must notify the LSE as soon as possible and no later than the end of the day from the receipt of the information. This short disclosure period characterises insiders trades in the UK as very informative, triggering large market reactions (Fidrmuc et al., 2006).

In addition, according to the Model Code, insiders are not allowed to trade during close periods, that is sixty days prior to yearly and interim earnings announcements and thirty days prior to quarterly results while it is also prohibited to trade prior to the official public announcement of any price sensitive information. However, this measure does not reduce the abnormal stock price reaction created by insider trading but rather affects the timing of insider dealing (Hillier and Marshall, 2002a). As stated in the Criminal Justice Act 1993 the

¹⁸ Paul Barnes, professor of fraud risk management at Nottingham Trent University, who also acts as an expert witness in insider dealing court cases has been quoted saying in the London Sunday times: *“London is a haven for insider dealers because it is large and there is evidence that the chances are you will get away with it. It is a theme park for all aspiring insider dealers”* (The Sunday times, London, 6 June 2010). In addition, Sara George, a lawyer and partner at Allen & Overy who achieved a successful FSA criminal prosecution related to market abuse, shared her thoughts about the lack of prosecution penalties in the Financial Times *“When the worst that can happen is that you might lose your job and be fined an amount, you can afford to lose. Prison - and you start off in a normal one, it’s not straight to Ford (open prison) - that really will make people think twice”* (Financial Times, 24 January 2008).

¹⁹ Arun Srivastava, head of the financial services group at Baker and McKenzie LLP who spent a year of secondment to the FSA from 1999 to 2000, stated in a Bloomberg interview in 2012 *“The real challenge for the FCA is not so much the detection of the suspicious trading but actually building a credible case to take to a criminal court”*. When asked which are the obstacles on building that kind of case and how challenging is for the FCA to spot when normal market behaviour crosses the line into criminality he replied *“The problem for bringing a prosecution as opposed to dealing with the issue of insider dealing through FCA civil powers is the need to commit to jury that there has been criminality and very often in insider dealing cases all a suspect needs to do, is come up with some sort of explanation as to why he is doubt, which is really easy to construct a plausible explanation”* (Bloomberg Interviews, 23 March 2012).

penalties for insider trading could be up to seven years' imprisonment and unlimited fine²⁰, but are not limited only to the insiders of a firm. Any individual who trades knowingly and intentionally when in possession of inside information could also face those penalties.

Recently on 3 July 2016, in another EU's attempt to harmonize the regulations of European markets regarding market abuse, they introduced the EU Market Abuse Regulation (MAR) which has effect on all European members. Despite these changes are not in the examination period (1996-2015) of this study, I deem appropriate to report them since they are the most recent insider trading legislation changes. Although the MAR had many similarities with the previous insider trading regulation, there are some major differences which resulted to the abolishment of the Model Code (Chapter 9 of the Listing Rules) and the repeal of Part VIII of the FSMA 2000. First, the MAR introduces a new prohibition on market abuse; any attempt to engage in market manipulative actions even if it is not completed for different reasons is considered as market abuse. Second, the introduction of MAR broadened the general definition of inside information²¹ and introduced inside information definitions in relation to commodity derivatives, emission allowances and individuals charged with financial instrument executions. Third, it extends the market abuse regime to MTF²² and Organised Trading Facility (OTF)²³ markets. Finally, it reduces the PDMRs (and individuals closely related to them) notification period to the FCA when trading on their firm shares to three days from four days while it reduces the close period from sixty days to thirty days. Hence, after 2016 the UK has significantly stricken the insider trading regulations.

²⁰ The longest imprisonment conviction that have been handed down for insider dealing it was in May of 2016 for 4.5 years to Martyn Dodgson, a former senior investment banker, who passed inside information to other individuals and made millions of profit.

²¹ As stated in the MAR, inside information is the *"information of a precise nature, which has not been made public, relating, directly or indirectly, to one or more issuers or to one or more financial instruments, and which, if it were made public, would be likely to have a significant effect on the prices of those financial instruments or on the price of related derivative financial instruments"*.

²² According to the Markets in Financial Instruments Directive I (MiFID I), an MTF market is an investment service alternative to regular markets which is operated by a market operator or an investment firm and brings together multiple third-parties buying and selling interests in a non-discretionary way. The AIM is included in this category of markets.

²³ According to the MiFID II, an OTF market is an investment service different from a regulated market and an MTF which brings together multiple third-party buying and selling interests in bonds, derivatives, structured finance products and emission allowances.

3.3 The History of the UK markets and the introduction of the Alternative Investment Market (AIM)

A security market existed in the city of London long before the establishment of the LSE. There is evidence of shares exchange from the sixteenth century, years before the creation of an official market. The MM of the LSE was officially established in 1698 and ever since it has been the market for some of the largest and most famous companies not only of the UK but also of the entire world²⁴ (London Stock Exchange, 2010). A listing to the MM provided firms with a high profile, access to capital and commitment to high standards, however the strict regulation structure and demanding eligibility criteria discouraged small and medium sized firms to list in such a prestigious market. The Over the Counter (OTC) markets took advantage of this weakness and under the rule 535.2²⁵ attracted firms that were too small for the official list. In order to stay in line with the competition, the LSE had to either let the OTC markets flourish or create a market suitable for small and high growth firms. The possibility of creating such a market immediately raised concerns about the risks that this market could be exposed to, such as insider trading and market manipulations that could jeopardize the prestige of the LSE (Michie 1999, p. 614-628)

Hence, in 1980 the LSE introduced the Unlisted Securities Market (USM), a market with less stringent admission requirements²⁶ that would attract small and high growth firms. By 1986 the USM had attracted more than 500 firms raising approximately £1bn while 71 of those firms had moved to the MM. After this impressive success, in 1987 the LSE decided to introduce yet another market for even smaller and riskier firms called the Third Market. However, in October of 1987 the Black Monday crash hit harshly the small and riskier firms reducing greatly the new issue numbers in both markets and lead to the merge of the USM and the Third Market in 1990. Consequently, in 1993 the LSE announced its plans to close down the USM (Acrot et al., 2007).

The announcement of the closure of the USM created the opportunity for the establishment of other markets that wanted to benefit from the lack of an organized market for small firms. In 1995, John Jenkins an expert in small company shares introduced the Off

²⁴ In 1801 the LSE started to attract members on a subscription basis and in 1923 it was awarded by its own coat of arms with the words "*Dictum Meum Pactum*" which means My word is My Bond (London Stock Exchange, 2009).

²⁵ Under the rule 535.2 (later replaced by the rule 4.2) the stock exchange members had the right to exchange securities that were not part of the official list. This rule was functional from the 1950s until 1994.

²⁶ The USM floating requirements were 10% and the trading record requirements were three years compared to 25% and five years respectively in the MM (Acrot et al., 2007).

Exchange (OFEX)²⁷, a new market that focused on small and high growth companies established in the UK (Michie 1999, p. 619). This new domestic rival²⁸ along with the government concerns about the future of LSE without a segment that would attract small firms lead to the launch of the AIM in 17 June of 1995 and to the abolition of the rule 4.2 (former 535.2). The AIM concept had many differences from its predecessor, it started as a separate market from the MM with its own management and regulations (Acrot et al., 2007). The AIM standards had to be different from those of the MM and the USM since AIM's primary target was to attract small firms which by nature were recently created with lack of track record and little experience. Thus, the AIM followed a light touch regulation with no minimum percentage of float, no requirements for track record, no minimum market capitalisation and with a distinctive element called Nomads, which oversight, advice and regulate the AIM firms during their Initial Public Offering (IPO) as well as during their entire life time in the market (London Stock Exchange, 2015a).

Apart from OFEX, the domestic competitor which until 1996 had attracted approximately 300 firms, the AIM had also to compete with overseas light regulated markets such as the French Nouveau Marche, the German Neuer Markt, the Italian Nuovo Mercato and the European EASDAQ among others. However, during the dot.com bubble in 2000, all of those markets were hit hard since they were internet and technology based and eventually collapsed. Even though the AIM was severely affected, it was the only European secondary market that was left after the big shock. This was due to the prior LSE's experience on light regulated markets and because the AIM was less dependent on technology stocks compared to the other markets. This event had a positive outcome for the AIM due to the fact that it eliminated its rival markets and raised its profile among the LSE and to the entire world as a stable yet growth market (Acrot et al., 2007).

Soon after the dot.com crash the AIM started to attract international firms and an important number of the MM firms. First it started to attract firms from the Commonwealth countries which had the same legal systems with the UK such as Canadian and Australian firms. The visibility of the AIM and the MM was also enhanced in 2002 after the

²⁷ In 2006 the OFEX was renamed to PLUS Market and in 2012 it was acquired by ICAP plc and renamed into Icap Securities and Derivatives Exchange (ISDX).

²⁸ Patrick Birley, CEO of the ISDX (former OFEX) in a recent interview said "*We are very much the newer, younger and I hope cooler version of a stock exchange. We are not a stepping stone to AIM, we are very much an alternative*" and when asked about the future plans of ISDX he replied, "*We are also targeting to take companies away from AIM and other market places because we believe that we can offer them exactly the same service but at a much better price point*" (Proactive Investors interview, 21 July 2016).

implementation of the Sarbanes-Oxley Act (SOX) in the US. The strict regulations and the expensive disclosure rules of the act made the London's markets an even more attractive destination. By 2003 the AIM had fully recovered from the dot.com crash and started to form its own identity, becoming a respected market not only within the UK but also in an international level. However, from 2005 the AIM had to face several new competitors such as the French Alternext, the German Entry Standard from Deutsche Börse and the Polish NewConnect while it also started to attract harsh criticism and envy from the European as well as international countries, especially from the US²⁹ (Acrot et al., 2007).

After a series of years that the AIM had more than 150 IPOs per year, it faced another hit from the financial crisis of 2007. The new issues once again began to shrink; however, the AIM had already been tested from previous shocks and was no longer a new unexperienced market; making it easier for it to withstand the new financial crisis hit. In response to this crisis the AIM revamped its rules into two rulebooks, namely "*AIM rules for companies*" and "*AIM rules for Nomads*". Since then the AIM is stable, characterised as one of the most popular and successful secondary markets in the developed world (London Stock Exchange, 2015b; Doukas and Hoque, 2016), it mostly underwent some tweaks in regulations depending on the market needs with the last one being the introduction of the MAR, which was implemented in the July of 2016 and brought some additional rules on the disclosure of inside information.

3.4 The markets provided by the London Stock Exchange

The LSE provides a wide variety of markets in order to facilitate every type of firm and a plethora of different investors. It is separated in two major categories, the MM which is the oldest and more respected market, attracting already developed medium and large firms and the AIM which is the secondary, exchange regulated market, specifically created for small and high growth firms. The MM is a world leading market with companies from more than sixty countries across forty sectors. A listing to the MM provides the firms with a wide and knowledgeable pool of investors along with high reputation and prestige, yet it also means

²⁹ John Thain, New York Stock Exchange (NYSE) executive was quoted at the World Economic Forum in Davos Switzerland in January 2007 referring to AIM "*did not have any standards at all and anyone could list*" (Financial Times, 27 January 2007). Moreover, Roel Campos a Securities and Exchange Commission member was quoted on a Dow Jones newswire in March 2007 saying "*I am concerned that 30% per cent of issuers that list in AIM are gone in a year. That feels like a casino to me and I believe investors will treat it as such*" (Financial Times, 8 March 2007). Finally, Kate Burgess, a journalist of the FT, wrote "*AIM's numerous corporate collapses and scandals have earned the market its label as a wild west exchange where cowboys are allowed to roam free*" (Financial Times, 15 October 2017).

commitment to its high regulatory standards. In addition, it offers different types of listing categories depending on the needs of the firm such as the Premium listing, the Standard listing, the High Growth Segment (HGS) and the Special Fund Segment (SFS) (London Stock Exchange, 2009; 2010).

The Premium listing is only available for equity shares, it has stricter standards than the minimum European requirements including the UK's corporate governance code, but provides a broader range of investors, lower cost of capital through greater transparency and through higher investor confidence, exceptional profile and the potential for inclusion in the FTSE 100 series³⁰. Mase (2007) reports that the firms that are included or excluded from the FTSE 100 index experience no abnormal announcement returns. More specifically, the returns reported for inclusions are -0.1% and for exclusion -0.2%. However, the 10 day pre-announcement period returns are reported to be 3.6% and -5.2% for the inclusion and exclusion respectively, indicating that the investors anticipate the events. The author also finds a reversal in the cumulative average abnormal returns after the effective dates for both inclusions and exclusions. These evidence are in contrast with the studies from the US which examine inclusions in the S&P 500 index and report positive and significant returns on the announcement and post announcement of the inclusion to the index (Shleifer, 1986; Harris and Gurel, 1986; Dhillon and Johnson, 1991; Beneish and Whaley, 1996) and negative returns after the exclusion from the S&P 500 (Lynch and Mendenhall, 1997).

Another listing choice in the LSE is the Standard listing, which is available to shares, debt, securitised derivatives and Global Depositary Receipts (GDRs). Firms in this market are obliged to comply only with the minimum European requirements. The HGS is a new market for equity shares of medium sized companies that present significant growth and have aspirations to join the Premium market, while its listing requirements follow the same principles as the Standard market with some minor differences. The SFS (formally known as Specialist Fund Market) is a market which is created for specialised firms that aim to attract institutional and highly knowledgeable investors. The listing requirements for SFS are the same as the Standard listing. Furthermore, there are some additional segments in the LSE which target only specific pools of firms such as the techMARK which focuses on

³⁰ The name FTSE was developed by the cooperation of the Financial Times (FT) Index with the LSE in 3 January 1984 (Michie, 1999, p. 573). The FTSE consists by three types of series, the FTSE 100 also known as blue chip which consists of the 100 largest companies listed on the Premium market and is the indication of the market performance, the FTSE 250 which is composed by the 250 largest firms after the FTSE 100 and the FTSE 350 which is the FTSE 100 and the FTSE 250 combined.

technology and healthcare firms and the Professional Securities Market (PSM) which offers an alternative documentation regime for issuers of convertibles, GDRs, and debt (London Stock Exchange, 2010).

The newest market of the LSE is the AIM, which offers an exchange regulated regime for companies that are not able to join a traditional regulated market or for companies that prefer a light regulated oriented market, filling the gap for growing firms to develop. Unlike other growth markets, the AIM is not a specific sector market, hence it is supported by a wide range of advisers such as the Nomads, brokers, lawyers and registrars, among others. It offers a significant regional and sector diversity with firms from twenty eight different countries and forty different industries while it is one of the most popular and successful public equity growth markets in the world (London Stock Exchange, 2015b; Doukas and Hoque, 2016). In a recent report that surveyed seventy five AIM firms asking them to rate the benefits they acquired since their listing on the AIM, 86% replied that they have seen some benefit on their profile/credibility, 79% have seen benefit from the access to capital, 68% have realised benefit from the liquidity while only 44% found benefits from the AIM's tax incentives³¹ (Baker Tilly, 2011).

In the UK, an exchange regulated market is the market that is regulated by the LSE while it has to be recognized from the FCA by meeting the Recognised Investment Exchanges (REC) and the MiFID³². These legislations require among others, the markets to have available financial resources for the proper operation of their functions, to ensure investors' protection and prevent market exploitation, to ensure that any necessary actions are made for recording transactions effected by their facilities, to notify the FCA for any changes on the market and to promote as well as maintain high quality standards of integrity and fair

³¹ AIM firms' investors that hold their shares in an Individual Savings Account (ISA) do not pay taxes on dividends or on the profits they make. Furthermore, from 28 April 2014, direct purchases of AIM shares are free from the 0.5% stamp duty. However, if the investments are not held in a tax efficient wrapper, investors are taxed on profits that are above the Capital Gains Tax (CGT) allowance. In addition, investors of the AIM stocks are exempt from Inheritance Tax (IHT) if they hold their stocks for more than two years. Finally, there are also some additional schemes that investors could use if they meet certain criteria. For example, the Entrepreneur's relief where if investors hold more than 5% of a firm's ordinary shares they can reduce the CGT from 28% to 10%, or the Enterprise Investment Scheme (EIS) where if investors invest more than £1 million in aggregate in a tax year, they receive a 30% initial income tax relief on their investment, loss relief and exemption from CGT on disposal (London Stock Exchange, 2014b).

³² According to the FCA, MiFID is the European legislation that regulates firms which provide services to clients linked to financial instruments. It was applied in November 2007 but is now being revised into a new legislation known as MiFID- II which took effect from 3 January 2018.

dealing. The FCA has the right to issue instructions to the market or even to derecognise it for not meeting the requirements.

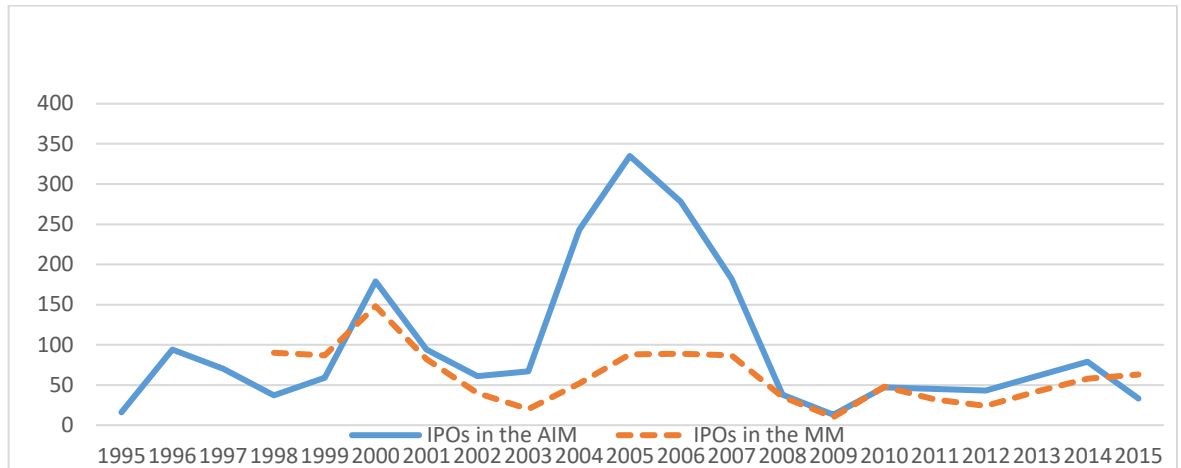
Table 3-1 reports the new listings to the MM from 1998 to 2015 and the new listings to the AIM from 1995 to 2015. The table presents different starting years as the LSE does not provide new listings data for the MM prior to 1998. The table shows that the IPOs in the AIM are almost double in number (with a total of 2074 IPOs) than those in the MM (with a total of 1095 IPOs), showing that the AIM is an extremely popular market. More specifically, there is an increased activity in the AIM IPOs from 2000 to 2007 with a maximum number of 335 IPOs in 2005. The IPOs in the MM are stable throughout the years with a maximum of 148 IPOs in 2000 and a minimum of 10 IPOs 2009. However, the new money raised is significantly more in the MM with a total of £179,418 million compared to a total of £35,827 million in the AIM. This is due to the fact the AIM mostly attracts small and high growth firms while the MM attracts already developed firms. In addition, it could be attributed to the minimum market capitalisation and percentage of free float requirements of the MM. Figure 3-1 also shows a graphical representation of the new listings in both markets.

Table 3-1: New listings in the MM and the AIM

Panel A: IPOs in the MM			Panel B: IPOs in the AIM		
Year	Number of IPOs	Funds raised (£ millions)	Year	Number of IPOs	Funds raised (£ millions)
1995	-	-	1995	16	69.09
1996	-	-	1996	94	503.53
1997	-	-	1997	70	296.83
1998	90	11,184.69	1998	37	185.10
1999	87	11,282.50	1999	59	274.39
2000	148	16,358.61	2000	179	1,395.35
2001	82	10,089.99	2001	94	434.94
2002	40	5,076.24	2002	61	433.00
2003	20	3,562.72	2003	67	989.83
2004	52	4,930.41	2004	243	2,412.28
2005	88	10,674.12	2005	335	5,632.53
2006	89	20,123.56	2006	278	9,314.73
2007	87	20,449.70	2007	182	6,262.40
2008	35	6,299.12	2008	38	917.27
2009	10	964.07	2009	13	610.07
2010	48	8,190.05	2010	47	1,012.02
2011	32	15,556.80	2011	45	525.11
2012	24	4,168.75	2012	43	642.91
2013	42	11,247.39	2013	61	973.59
2014	58	12,084.21	2014	79	2,472.48
2015	63	7,175.27	2015	33	470.00
Total	1095	179,418.20	Total	2074	35,827.45

This table presents the new issues and money raised in the MM and in the AIM during the period of 1995-2015. The data are retrieved from the “*New issues and IPO summary*” spreadsheet which can be downloaded from the LSE website. The spreadsheet does not provide new listings for the MM prior to 1998. The funds raised are in millions.

Figure 3-1: New listings in the MM and the AIM



This figure shows the new listings in the MM and the AIM from 1995 to 2015. The horizontal axis represents the years and the vertical axis represents the number of IPOs. The data are retrieved from the “*New issues and IPO summary*” spreadsheet which can be downloaded from the LSE website. The spreadsheet does not provide new listings for the MM prior to 1998.

3.5 Regulatory differences between the Main Market (MM) and the Alternative Investment Market (AIM)

The two markets have several differences, both in the listing criteria as well as the costs associated with the listings. The criteria for being admitted to the AIM are less stringent compared to those of the official list. For instance, under the “*AIM rules for companies*” the listing requirements of the AIM are (1) no minimum percentage of float³³; (2) no requirement of audited financial statements in the years prior to the listing, however there is a requirement for a minimum of three years of audited financial statements for the companies that have been trading in other exchanges; (3) no minimum market capitalisation. In contrast, according to the Listing Rules (LR) the admission requirements for the MM are (1) minimum percentage of float of 25%; (2) minimum of three years of audited financial statements before the admission; (3) minimum market capitalisation of £700,000 (London Stock Exchange, 2010; 2015a; b; 2016).

In addition, the firms listed in the AIM have to prepare the AIM admission document³⁴ which does not have to be pre-vetted by the UK Listing Authority (UKLA) or the Exchange while the firms listed in the MM have to prepare a prospectus which has to be approved by a European Economic Area (EEA) competent authority or UKLA and the Exchange. This

³³ In practice at least 10% of the shares is expected to be floated by investors (Arbuthnot Securities, 2007).

³⁴ The AIM admission document requires specific information dictated by the “*AIM rules for companies*” such as a business overview, a legal disclosure, historic financial information and a risk disclosure.

difference makes the AIM listing process much faster than the one in the MM as the reviewing³⁵ and approval of the prospectus could take up to several months. The admission, annual and compliance costs between the two markets are also different with the AIM being a less expensive market following its principles on facilitating small firms in need of finance. For example, the admission fees in the AIM could be from £7,900 to £89,180 while in the MM could be from £7,900 to £457,600 depending on the market capitalisation. Moreover, the annual fees in the AIM are £6,250 plus the Nomads' fee while in the MM are from £5,200 to £52,000 depending on the market capitalisation. Finally, the further insurance costs for the AIM are £3,952 to £44,590 for more than £5m market capitalisation while there is no charge for less than £5m market capitalisation and in the MM are the same as the admission fees with several discounts depending on the issue (London Stock Exchange, 2010; 2015a; b; 2016).

Apart for the listing criteria and the costs, there are also significant differences in the regulations of the two markets. First, an AIM firm must at all times attain a Nomad while in the MM the firms must have a listing sponsor only during their listing. Second, the MM firms have to “*comply or explain*” to the UK Corporate Governance Code while the AIM firms do not have to comply with the code, however they are expected to adhere to a recognised corporate governance code which most of the times is the Quoted Companies Alliance (QCA), a governance code for small and medium firms (London Stock Exchange, 2012). Corporate governance differences play a vital role as a strong corporate governance can mitigate any agency issues between the ownership and control (Shleifer and Vishny, 1997; Bushman and Smith, 2001) and thus insider trading activities (Rozanov, 2009). Third, in order for a MM firm to switch to another market, it must receive at least 75% shareholder approval while in the AIM no shareholder approval is needed. Fourth, unlike the MM firms, the AIM firms are not required to produce an insider list or to notify the FCA and keep a detailed record for the delayed disclosures³⁶. Fifth, an AIM firm must disclose any substantial transactions that exceed 10% of the class tests and any related party transactions that exceeds 5% in any of the class tests, compared to 5% and 0.25% for the MM firms respectively (London Stock Exchange, 2016). This more relaxed regulatory approach regarding insider trading could potentially create an incentive for insiders to exploit the

³⁵ In large IPOs the reviewing and commenting by the UKLA can involve five or even more substantive drafts (London Stock Exchange, 2010).

³⁶ The introduction of MAR in July 2016 requires an insider listing, the notification of FCA for delayed disclosures as well as a detailed record for them, but these rules do not apply for the period under examination of this study.

abnormal stock returns that are reported during the announcement of a moves from the AIM to the MM and vice versa (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014).

Finally, the two markets are regulated by different regulatory bodies. The AIM is regulated by the LSE through the Nomads (see section 3.7.2 for an analysis of the role of Nomads in the AIM) while the MM is regulated by UKLA. Table 3-2 shows analytically the eligibility criteria and continuing obligations of the two UK markets. The light exchange regulated environment of the AIM was partly the reason of its enormous success and popularity. In a recent survey in 2011, approximately 75% of 75 AIM firms and 20 institutional investors agreed that the self-regulation of the AIM market is effective, however only 15% of them agreed that further increases in the AIM regulations are not required (Baker Tilly, 2011), meaning that the future of AIM is definitely bright but it might not be light.

Table 3-2: Eligibility criteria and continuing obligations of the MM and the AIM

Market		MM	AIM
Regulation		Traditional Regulated Market	Multilateral Trading Facility
Exchange rules		Admission & Disclosure Standards	AIM rules
Eligibility criteria	Minimum market capitalisation	£700,000 (LR 2)	No minimum market capitalisation (AIM rules)
	Minimum percentage of free float	25% in public hands (LR 6)	No minimum percentage of free float (AIM rules)
	Trading record	3 years (LR 6)	3 years or shorter period (AIM rules)
	Designated adviser	Listing Sponsor required (LR 8)	Nominated Adviser required (AIM rule 1)
	Admission documentation	Prospectus & eligibility letter to UKLA, submitted by the sponsor (A&Ds)	AIM admission document & Nomad declaration of suitability (AIM rules)
	Admission fees (2015)	From £7,900 to £457,000 depending on the market capitalisation (Fees for issuers, 2015)	From £7,900 to £89,180 depending on the market capitalisation (AIM fees for companies, 2015)
Ongoing obligations	Annual fees (2015)	From £5,200 to £52,000 depending on the market capitalisation (Fees for issuers, 2015)	£6,250 plus Nomads' fee (AIM fees for companies, 2015)
	Further issuance cost (2015)	Same as admission fees with 25% discount for issuers capitalised £500m and below and 10% for issuers capitalised at above £500m. No charge for issuers capitalised £100m and below (Fees for issuers, 2015)	From £3,952 to £44,590 for more than £5m market capitalisation. No charge for less or equal than £5m (AIM fees for companies, 2015)

Ongoing obligations	Designated adviser	Listing Sponsor for certain transactions (LR 8)	Nomad required at all times the issuer is on market (AIM rule 1)
	Corporate governance	Comply or Explain to the Combined Code (LR 9)	Disclosure of whether a code is followed (AIM Rule 26)
	Eligible for electronic settlement	Yes (A&Ds 2.7)	Yes (AIM rule 36)
	Insider list	Yes (DTR2/MAR article 18 from 3 July 2016)	No before MAR, (Yes after MAR article 18 from 3 July 2016)
	Accounts preparation	EU-IFRS or equivalent (DTR 4)	EEA firms: IAS or national GAAP if not a parent company. Non-EEA firms: IAS, US GAAP, Canadian GAAP, Japanese GAAP, Australian IFRS (AIM rule 19)
	Financial reports	Annual & half year reporting (DTR 4)	Annual & half year reporting (AIM rules 18 & 19)
	Publication of inside information as soon as possible	Yes (DTR 2/MAR article 17 from 3 July 2016)	Yes (AIM rule 11/MAR article 17 from 3 July 2016)
	Significant transactions (class tests) notifications	class 2 - 5%, class 1 - 25% (requires shareholders' approval) (LR 10), 100% reverse (LR 5)	10% in any of the class tests, 100% reverse (AIM rules 12 & 15)
	Related party transactions notifications	0.25 % in any of the class tests (LR 11)	5% in any of the class tests (AIM rule 13)
	Cancellation	75% shareholder approval required (LR 5)	75% shareholder approval (AIM rule 41)
Indices	LSE indices	FTSE UK series	FTSE AIM series

This table reports the major eligibility and ongoing obligations of the AIM and the MM. For the construction of the table, I use the regulatory and guidance handbooks provided by the LSE website. LR stands for "Listing Rules", DTR for "Disclosure and Transparency Rules", MAR for "Market Abuse Regulation" and A&D standards for "Admission and Disclosure standards". The AIM rules are available in the "*AIM rules for companies*" handbook.

3.6 The switching process between the two markets

The switch between the two UK markets involves two different steps. The first step is the delisting from the market where the firm is currently listed, and the second step is the admission to the new market. The two steps occur simultaneously, on the same day. According to the LR 5.2 and the AIM rule 41 the firms that delist from the two markets must notify Regulatory Information Service (RIS) and send a circular to the shareholders, giving at least a twenty business days' notice of the intended delisting. Importantly, the decision of the delisting and subsequent market switch is at the discretion of the management. In fact, for the firms that switch from the AIM to the MM there is not even a need for subsequent shareholders' approval. More specifically, although in 2003 the delisting became conditional on the approval of at least 75% of the shareholders, this shareholder consent is not required when the AIM securities are admitted to trading on an EU regulated market or an AIM designated market that enable shareholders to trade their AIM securities in the future (AIM rule 41). A similar rule came into force in 2007 for the firms that intent to move from the MM to the AIM. In particular, according to the LR 5.2, the firms that intent to delist form the MM must receive approval from at least 75% of the shareholders. However, the meeting for the approval typically takes place after the announcement of the intention of the firm to switch markets. Finally, only the firms that move from the AIM to the MM must prepare a prospectus which has to be pre-vetted and approved by the UK Listing Authority (UKLA). This obviously becomes available to the public after the announcement of the intention to switch.

The main reason for the upgrade to the MM is that it offers better analyst coverage, larger investor pool and higher prestige, at a higher cost. However, a switch to the AIM provides lower costs and greater flexibility. While, the two markets are reported to attract different firms that have different financing and investment priorities, the decision to list either to the AIM or to the MM is not due to the different regulations of the markets but rather a self-selection choice just as any other corporate choice (Doukas and Hoque, 2016).

3.7 The role of advisers in the markets

The role of advisers is to guide and advise the firms during their listing in the markets but also to provide guidance once the companies are listed in the markets. Selecting the right advisers is of vital importance for the companies since they work closely together in order to minimise any kind of disruptions. This is the reason that the companies often hold the so called "*beauty parades*", in which they invite potential advisers and discuss with them. Some of the criteria the firms usually take into account are the quality of the advisor team and their

commitment, their credentials and distribution capabilities, their industry knowledge, the quality of the adviser's research analysts and the level of the fees. For its proper operation a firm must assign many advisers such as registrars, lawyers, bookrunners, market makers, reporting accountants, sponsors for the firms listed in the MM and Nomads for the firms listed in the AIM (London Stock Exchange, 2010; 2015b).

3.7.1 The role of brokers, registrars and other advisors

Among the most important advisors for the companies listed in the UK markets are the brokers which must be a member of the stock exchange and must be retained during the entire public life of the firm. The broker is a vital instrument for the support of the financing needs of the firm as it publishes research in order to provide analyses of the firms to investors. Furthermore, the brokerage firms assess the investors' interest levels during the floating process and they provide financial and trading guidance during further issues while they offer ongoing advice on pricing and investment related matters (London Stock Exchange, 2010; 2015b).

Another important advisor for the UK companies is the registrar. The relationship between the registrar and the firm is a long term one and it has to be retained at all times. The registrars work is to keep and maintain the shareholders register up to date, to make sure that the appropriate documentation is in place during an IPO in order to effectively deliver the shares to investors, to create the share certificates and to provide shareholder information to the other advisers when it is appropriate. In addition, the registrar assists the firms with different growth aspects of essential corporate parts such as takeovers while it provides any necessary information to the other advisors of the firms. Finally, the registrar might also provide some additional services such as holding formal regulatory communications with the shareholders of the firm or secretarial services. Even though the registrar is an important part of the advisory teams, it is not a requirement under the rules of the AIM. However, most of the AIM firms appoint a registrar prior to their listing in the market (London Stock Exchange, 2010; 2015b).

Another vital advisor is the lawyer/law firm which conducts legal due diligence on the business of the firm while it advises and guides the firms on the drafting process of the admission documents and on the legal aspects of the flotation process. In addition, the companies may seek the law firm advice on various matters such as acquisitions, compliance with legislation or commercial contracts. The public relation firm is another advisor that its main role is to provide communication via media and other sources, produce institutional

roadshow presentations and build and maintain media interest about the firm. Finally, the market maker is the advisor that is responsible for pricing the securities and ensuring that investors have all the required means to purchase or sell securities. It is an important advisor especially for the AIM firm as they are the providers of liquidity. The brokerage firms can also have the role of the market maker but they will have to be registered with the LSE (London Stock Exchange, 2010; 2015b).

3.7.2 The role of Nominated Advisers (Nomads)

The Nomads are the key regulator and advisor for the AIM. All firms admitted to the AIM must appoint a Nomad twelve to twenty four weeks prior to their admission and retain one during their lifetime to the market. In case an AIM firm doesn't have a Nomad, either because of a Nomad resignation or because of dismissal, its shares are being suspended and if the firm does not appoint a new Nomad within thirty days, its shares are cancelled. The Nomads are different from the sponsors which are required during the listing in the premium segment with the key difference being the ongoing obligations a Nomad has after a firm's admission. However, many Nomads are also sponsors (Acrot et al., 2007; London Stock Exchange, 2014a).

There are certain criteria that have to be met, for an entity to become a Nomad, but even if the criteria are met by the entity, the LSE has the right to reject the application if there is a possibility that the applicant will harm the reputation and integrity of the AIM. First, the entity must be a firm³⁷, since individuals are not eligible for the position of a Nomad. Second, the firm must have practised corporate finance for at least the last two years and must have acted on at least three relevant transactions³⁸ during that period and third the company must employ at least four qualified executives³⁹ of whom the quality will be examined by the LSE as a team and on an individual basis. The applicants must pay an application fee of £21,000 for 2015 and in case the application is successful they have to pay an annual fee to the exchange that starts from £14,000 to £55,000 depending on the number of the firms they oversee. However, the quality and the eligibility of Nomads is being assessed even after

³⁷ Most of the times the Nomads are accountancy firms, investment banks or corporate finance firms (London Stock Exchange, 2015b).

³⁸ A relevant transaction is a transaction that requires a prospectus or equivalent, or a takeover of a public firm (London Stock Exchange, 2014a).

³⁹ A qualified executive is a person who has a deep understanding of the AIM market as well as the UK's corporate finance. The qualified person must have also acted as a corporate finance advisor for at least three years and must have completed at least three relevant transactions during that period (London Stock Exchange, 2014a).

their approval. The exchange may at any time request information from the Nomad or even conduct interviews to ensure that the high quality of service is maintained and in case the Nomad firm breaches its responsibilities, the exchange can issue a warning notice, fine or even remove the Nomad (London Stock Exchange, 2014a).

The Nomad is the centre pillar of the AIM regulation and it should assign at least two qualified staff to oversee each AIM company, of whom one must be qualified executive. Its role is to assess the appropriateness of an applicant to the AIM by undertaking due diligence procedures and by examining whether the directors of the firm are suitable for the AIM. Moreover, it should regulate, guide and advise the AIM firms during the floatation process by coordinating the preparation of the admission document and by preparing the firm for listing. Hence the firms that switch from the MM to the AIM are advised and regulated from their Nomads well before their listing to the AIM. The responsibilities of the Nomad do not stop on the admission of a firm. The Nomad must have regular contact, guide and oversight the AIM firms during their entire existence in the AIM. It consults the AIM firms regarding their corporate governance and when a corporate, regulatory or market issue arises it is the first contact for the directors of the AIM firms. However, the Nomad also regulates the firms and must ensure that the company fully understands its obligations under the “*AIM rules for companies*” and in case a firm has breaches those rules it must inform the exchange to take the necessary actions (London Stock Exchange, 2014a).

The choice of Nomad plays an important role for the firms as it has an impact on their survivability after the IPO (Esenlaub et al., 2012), while it could potentially reduce any market abusive activities since the Nomad’s quality of work and reputation is likely to be of vital importance in eliminating informational asymmetry between the insiders of the AIM firms it supervises and outside investors. The Nomad of an AIM firm can also act as a broker, providing them with more knowledge and control over the company, but it has to take the necessary safeguards in order to avoid any conflicts of interest. However, firms that have the same advisor in both roles do not experience higher level of disclosure compliance with the QCA (Mallin and Ow-Yong, 2012) which could result in lower levels of information asymmetry.

3.8 Conclusion

This chapter explained the developed of insider trading regulations in the UK as well as the most recent changes. It has also set the background of the UK markets by providing information about them and explaining the main regulatory differences between them. These

admission and ongoing obligation differences as well as the different costs are the main incentives for market switches. For example, when firms listed in the AIM are ready to move to a more traditionally regulated market with better analyst coverage, larger investor pool and higher prestige, they move to the MM. On the other hand, firms listed in the MM that cannot afford the high costs of the MM's demanding regulations, transfer to a less costly market with lower regulations and tax advantages for their investors. Prior literature reports abnormal stock returns on the announcements of the market switches between the two UK markets (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014). The next chapter examines empirically whether those abnormal announcement stock returns could create incentives for insiders to leak the market switching information to other investors in order to generate profit.

4. Information leakage prior to the announcement of the UK market switches

4.1 Introduction

This empirical chapter provides the analysis for answering the first research question of this thesis. It is motivated by the literature of corporate events' impact on firms' value and equity valuations (Aggarwal and Rivoli, 1990; Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995; Hertz et al., 2002) and the fact that individuals that are aware of the forthcoming event prior to the public announcement, could generate profit by trading towards the direction of their information (e.g. Karpoff and Lee, 1991; Kahle, 2000; Agrawal and Nasser, 2012). A recent event that is reported to exhibit abnormal stock announcement returns are the market switches, and more specifically, the market transitions from the AIM to the MM and vice versa. A move to the MM is considered to be a market upgrade triggering positive abnormal announcement stock returns while a move to the AIM is believed to be a market downgrade triggering negative abnormal announcement stock returns (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014).

Informed by the evidence in the literature regarding information leakage prior to major corporate announcements (Mandelker, 1974; Keown and Pinkerton, 1981; Eyssell and Arshadi, 1993; Holland and Hodgkinson, 1994; Jabbour et al., 2000; King, 2009), this empirical chapter assesses whether the market switches could create space for market abusive techniques. More specifically, it examines whether the firms that move between the two UK markets experience abnormal stock price and trading volume reactions prior to the public announcement of their transition, as a sign of leakage of inside information. This study differs from the studies of Jenkinson and Ramadorai (2013) and Campbell and Tabner (2014) as I focus on the price and volume reactions prior to the announcement of the switches as well as the reasons of those activities while the latter studies mostly focus on the announcement and post-announcement returns. Hence, the main aim of this study is to examine whether market switches are susceptible to informed trading and to provide new insights on the information leakage literature.

The notion that abnormal stock returns is a sign of abnormal trading comes from the law of supply and demand. Since, purchases increase the demand and sales increase the supply of a certain stock, it is assumed that trading affects stock prices (Fischel and Ross, 1991). As stated by Kyle and Viswanathan (2008), trades that possess private information, incorporate their informational advantage into the prices, creating a positive externality for the investors

who follow prices as signals and driving the prices towards the direction consistent with the private information. Hence, trading on positive private information pushes the stock prices upwards, whereas trading on negative private information pushes the stock prices downwards.

The UK offers a unique environment for the market switches examination as it provides a largest to date number of firms that move between a secondary market and a main market, with 287 moves from the MM to the AIM and 119 moves from the AIM to the MM. The light regulated markets have become increasingly popular during the last two decades with the introduction of secondary markets in Spain and Slovakia in 2008 and Japan in 2009 among others. The US is also considering the establishment of a secondary market that would serve the purpose of facilitating small firms in need of capital with the JOBS Act of 2012 being the first steps towards this direction. Hence, the market moves are attracting interest internationally.

This chapter's contribution is twofold. First, it contributes to the existing literature by examining abnormal stock price reactions before the transition from a secondary, decentralised regulated market to a traditionally regulated market and vice versa, shedding light as to whether those events create incentives for market abusive behaviours. Thus, it extends the information leakage literature which mostly focuses on other major corporate events. Second, this study reflects on both good and bad news, providing evidence that insiders could take advantage of their private information and leak it prior to both positive and negative occasions, highlighting the conflict of interests between firm's ownership and control. For example, insiders could increase their wealth by sharing information prior to both a market upgrade and a market downgrade, however, this action would seriously hurt the reputation of the firms if the market discovers the presence of informed trading.

This study also gives rise to policy implications as I point to a new direction where informed trading might be lurking. Thus, the findings of this study are of major importance to the UK regulators as I introduce the information leakage hypothesis on a new financial event which so far has lacked focus by them but has a high potential of triggering illegal activities. The results are also of interest to investors, as they could potentially avoid market abusive behaviours and exploitation.

The remainder of the chapter is structured as follows. Section 4.2 describes the literature review and hypothesis development. Section 4.3 describes the data collection and presents

the summary statistics. Section 4.4 explains the methodology of this chapter. Section 4.5 reports the results of the empirical tests. Section 4.6 concludes the chapter.

4.2 Literature review and hypothesis development

The presence of information asymmetry creates informational differences between investors who possess private information about the value of the firms and investors who only have access to public information, thus creating an adverse selection problem in the markets, where informed investors trade based on price sensitive information (Brown and Hillegeist, 2007). Individuals who make managerial decisions in the firms, also known as insiders, usually possess more information about their firm than outside investors. This is due to the periodic disclosure of information to the latter (Aboody and Lev, 2000). This information advantage could create incentives for insiders to pass information to other investors in order to trade on their behalf or to sell private information to other individuals for profit; actions that are especially difficult or even impossible for regulators to monitor⁴⁰. The sharing of price sensitive information to other trusted individuals for the purpose of trading is known as information leakage. The information chain usually originates from high ranked members of the board, such as executives, while the second parts of the information chain are close friends and family and then business associates (Ahern, 2017). Prior literature has documented systematic abnormal stock returns and abnormal trading volume as a proxy for leakage of inside information prior to the public announcements of major corporate events.

For example, in the US, Mandelker (1974) examines abnormal stock price reactions prior to mergers in the NYSE using monthly trading data during the period of 1941-1968. The author finds abnormal stock returns that reach approximately 14%, seven months prior to the official announcement of the mergers due to leakage of inside information. However, this seminal research has a major limitation which is the calculation of returns on a monthly basis. By calculating monthly returns, all daily returns that occur before the mergers during the same month are ignored. Keown and Pinkerton (1981) eliminate this limitation by calculating daily stock returns prior to takeover announcements. In their research they focus on 194 successfully acquired firms in the NYSE and OTC markets during the period of 1975-1978. The authors find positive abnormal stock returns, 25 trading days prior to the public announcements of the events, accompanied by significant abnormal trading volume in line

⁴⁰ As stated by Margaret Cole, FSA's former managing director of enforcement and financial crime, insider trading cases are always difficult, time-consuming and expensive (Bloomberg, 28 June 2016).

with the information leakage hypothesis. The authors also claim that the trading is carried out through third parties in order for insiders to escape detection.

In a similar vein, Cornell and Sirri (1992) investigating illegal insider trading data of 38 traders obtained from court records on Anheuser-Busch's acquisition of Campbell Taggart case in 1982 in the US, find that the positive abnormal stock returns prior to the event public announcements occur only when illegal insider trading is evident. Furthermore, Meulbroeck (1992) with a sample that consists of 320 cases of investors charged with illegal insider trading by the SEC during the period of 1980-1989, finds that 43% of the price run-ups prior to takeover announcements, are related to illegal insider trading indicating that trading based on price sensitive information is an important factor to the pre-announcement price run-ups. In another specific case research, Chakravarty and McConnell (1997) assess Ivan Boesky trades, an investor who was charged for trading illegally based on price sensitive information with regards to the acquisition of Carnation by Nestle in 1984. Using daily and hourly data of Boesky's trades, the authors report that his purchases are positively and significantly correlated with the price run-ups in Carnation stock price.

Similar results are reported by Eyssell and Arshadi (1993), who examine 133 firms targeted for tender offers in the NYSE and the AMEX stock exchanges over the period of 1982-1985. In line with the previous evidence, the authors find price run-ups and positive abnormal trading volume 50 days prior to the official announcement dates of tender offers and a significant and positive relationship between the abnormal stock returns and the abnormal trading volume which as they claim is in line with the "*informed outsiders*"⁴¹ hypothesis. The authors also find a positive relationship between abnormal trading volume and net insider purchases 25 days prior to the announcement date, showing evidence of the registered insiders' hypothesis.

On more recent US studies on short selling before negative events, Christophe et al. (2004) examining short sell activity prior to negative earnings surprises on 913 NASDAQ firms in 2000, find an increase in short selling that could be attributed to informed trading in anticipation of negative news and a decrease in the firms share price. In line with the previous claims, Berkman et al. (2016) assess private placements on common stock and convertibles in the US during the period of 2007-2011. The authors report increases in short selling prior to the public announcements of private placements, which are negatively associated with the

⁴¹ The informed outsider's hypothesis is similar to the information leakage hypothesis.

announcement stock returns, providing evidence that the trades are based on price sensitive information.

In Canada where the insider trading regulations are weaker compared to that of the US⁴², just like in the UK (the main differences between the UK and the US insider trading regulations and enforcement are presented in Appendix 2), Jabbour et al. (2000) examining a sample of 128 acquisitions on the Toronto Stock Exchange (TSE) from 1985 to 1995, find Cumulative Average Abnormal Returns (CAARs) of approximately 12%, two months prior to the public announcements of the events. In addition to the price run-ups, the authors report a positive and significant relation between abnormal trading volume and abnormal stock returns which is consistent with the information leakage hypothesis. In a similar vein, King (2009) examines 399 takeover announcements in the TSE from 1985 to 2002. Consistent with the previous findings, the author finds price run-ups and abnormal trading volume 50 days prior to the announcements of the takeovers and a positive and significant association between them. The author concludes that this evidence is in line with possible illegal insider trading activities.

In the UK, Holland and Hodgkinson (1994) investigate the existence of abnormal stock returns prior to the announcements of takeover targets on a sample of 86 targets from 1988 to 1989. By splitting the sample into firms which are discussed in the news prior to the takeover announcement and firms without any pre-announcement news, the authors report that the companies with rumours prior to the takeover announcements experience high abnormal stock returns. However, they also claim that the firms without any rumours about the forthcoming takeovers, also experience abnormal stock returns that reach approximately 4%, which according to the authors, it could be attributed either to stake building or illegal insider trading.

Moreover, Dubow and Monteiro (2006) have introduced the “*market cleanliness statistic*” in the UK, a statistic which is included in the FCA’s annual reports. This measurement is an indicator of insider dealing in the UK markets and a decrease in it, translates that the UK markets are clearer from informed trading even though it only covers a small percentage of the market. In their research, they examine abnormal stock price

⁴² Even though the Canadian corporate laws have been inspired by the US (Buckley, 1997), the Canadian enforcement is weaker compared to that of the US. The main issue of the Canadian enforcement is the lack of a single regulatory body such as the SEC. For example, the regulation of securities in Canada is shared by 13 different regulators. In addition, in Canada it is very difficult to prove the existence of insider trading, as the Canadian courts have to prove that the investors willingly and knowingly traded based on price sensitive information (King, 2009).

reactions two days prior to major announcements in FTSE 350 listed firms and prior to 285 takeover announcements. The period under examination for the FTSE 350 analysis is from 1998 to 2003 excluding 2001 due to the introduction of FSMA 2000. For the takeover analysis, the authors examine the years of 2000 and 2004. They find abnormal stock returns prior to the announcements of approximately 30%. Additionally, they report that the introduction of the FSMA 2000 does not reduce the insider trading activities. Monteiro (2007) updated and improved the “*market cleanliness statistic*”, by including the examination of abnormal trading volume prior to the announcements. In addition, the author extended the dataset by adding the year of 2005 for the FTSE 350 analysis and the years of 2001, 2002 and 2003 for the takeover analysis. The author finds both abnormal stock returns and abnormal trading volume prior to the public announcements in both analyses supporting the results of the previous research. However, the author finds a poor relationship between abnormal stock returns and abnormal trading volume.

Finally, similar results are reported in another UK study from Siganos and Papa (2015), who assess 783 UK merger target firms for the period of 1998-2010. The authors explore whether the pre-announcement price run-ups and abnormal trading volume are attributed to the FT coverage prior to the public announcements of the events. They find that the news coverage partly explains the abnormal trading volume and abnormal stock returns and suggest that there is also evidence of potential illegal trading activities. In addition, the authors report a strong relationship between abnormal stock returns and abnormal trading volume for the firms without media coverage which is consistent with possible leakage of insider information.

Prior literature primarily focusses on trading based on information leakage prior to the announcements of takeovers, omitting other events that could potentially generate arbitrage opportunities. In addition, the UK regulators mostly focus on takeovers when it comes to insider trading, as approximately 70% of the criminal sanctions related to insider trading in the UK are due to insider dealing prior to takeovers⁴³, an action that could create space for investors to engage in market abusive behaviours in other less notorious, yet profitable events. A popular phenomenon in the UK that has been reported to exhibit abnormal announcement stock returns and that could be exploited by market investors and insiders, are the switches between the two different regulatory markets of the UK, and more

⁴³ An example of a UK criminal sanction case and hyperlinks for other UK criminal sanctions can be found in the following link (<https://www.fca.org.uk/news/press-releases/three-charged-insider-dealing>).

specifically the switches from the MM to the AIM and vice versa. For instance, Jenkinson and Ramadorai (2013) examining the performance of the firms that move between the two markets provide evidence of significant announcement effects associated with the switches. The authors report that the firms that switch from the AIM to the MM, which is considered to be good news, experience positive abnormal announcement stock returns of 4.6%, while the firms that move from the MM to the AIM, a move which is characterised as bad news, experience negative abnormal announcement stock returns of -4.3%. Similarly, Campbell and Tabner (2014) examining the moves from the MM to the AIM and vice versa during the period of 1996-2010, find abnormal announcement stock returns for both the up-switchers and the down-switchers. The authors also add, that after the announcement the pattern is reversed, meaning that the firms that move to the MM experience lower stock returns after the switch and the firms that move to the AIM experience higher stock returns after the switch.

The abnormal announcement stock returns of those events along with the weak regulatory environment of the AIM, as managers in the AIM firms have been documented to be more prone to disregarding the regulations or laws by engaging in more earnings management prior to IPOs compared to other markets (Gerakos et al., 2013; Alhadab et al., 2016), could create space for investors to trade based on information advantage prior to the public announcement of the switches in order to generate profit. Hence, my hypotheses are:

Hypothesis 4.1: Firms that switch from the MM to the AIM experience abnormal stock price reductions as well as abnormal trading volume prior to the announcement of the transitions as a sign of leakage of information.

Hypothesis 4.2: Firms that switch from the AIM to the MM experience price run-ups as well as abnormal trading volume prior to the announcement of the transitions as a sign of information leakage.

4.3 Data and descriptive statistics

The firm names as well as the transition dates have been identified from the “*New issues and IPO summary*” spreadsheet, which is offered by the LSE website⁴⁴. However, the spreadsheet does not provide any identifier codes (e.g. ISIN or SEDOL codes), hence they have been hand collected from Investigate and Nexis databases based on the firm name provided by the “*New issues and IPO summary*”. I further used the latter databases along

⁴⁴ <https://www.londonstockexchange.com/statistics/new-issues-further-issues/new-issues-further-issues.htm> (last accessed October 2018).

with Perfect Information database in order to manually collect the announcement dates of the moves between the AIM and the MM. As announcement of the switch I consider the first time that a company officially announces its intention to switch market (some examples of announcements are reported in Appendix 3). The stock prices, stock volume and the FTSE All Share and FTSE AIM All Share indices are employed from Datastream. The accounting data have been downloaded from Worldscope.

However, Ince and Porter (2006) raise concerns over the coverage and quality of Datastream international data due to data errors. Hence, in order to clean the data from potential typos or mistakes I follow Karolyi et al. (2012) and Manconi et al. (2017) and censor the data below the 1st and above the 99th percentiles. In addition, in the stock and volume data I replace all zeros with missing values starting from the bottom, until I reach a non zero value in order to remove zero returns due to firms delisting. Finally, due to many missing data on the size and on the M/B variables I complement the dataset by hand collecting, where possible, the missing size and M/B values from the annual reports of the firms downloaded from the Perfect Information database.

The initial sample consists of 448 moves between the two UK markets⁴⁵. More specifically, it consists of 303 transitions from the MM to the AIM and 145 transitions from the AIM to the MM during the period of 1996-2015. Out of this sample, and although my efforts to minimize any loss of data through manual collection, I exclude four firms due to the lack of identifiers, three firms due to missing announcement dates, and thirty-five firms due to missing or incomplete stock return data on Datastream. The final sample consists of 287 firms that switch from the MM to the AIM and 119 from the AIM to the MM. Table 4-1 analytically presents the breakdown of the sample selection process.

⁴⁵ Similar studies that have examined the switches between the two UK markets report a similar number of firms during different periods. For instance, Jenkinson and Ramadorai (2013) use a base sample of 329 switches between the two UK markets during the period of 1997-2006, while Campbell and Tabner (2014) have a base sample of 373 transitions during the period from 1996 to 2010.

Table 4-1: Sample selection process

Description	(1) MM to AIM	(2) AIM to MM
Initial Sample	303	145
(-) Missing identifiers	3	1
(-) Missing announcement dates	1	2
Clear Sample	299	142
(-) Firms with no stock data/non available on Datastream	12	23
Final Sample	287	119

This table shows the sample selection process. The initial sample is retrieved from the “*New issues and IPO summary*” spreadsheet provided by the LSE website. The identifiers and announcement dates are manually collected from InvestEgate, Nexis and Perfect Information databases. The stock prices and stock volume data are retrieved from Datastream.

Table 4-2 shows the distribution of the switches and the corresponding proceeds across the sample period. Panel A reports the numbers of transitions per year from the AIM to the MM and panel B shows the number of switches per year from the AIM to the MM. The first switch from the MM to the AIM occurred in 1996 while the first switch from the AIM to the MM occurred in 1998 due to the fact that the listing requirements of the MM require at least three years of audited financial statements. Approximately 36% of the moves from the AIM to the MM occurred during the period of 1998-2001 supporting the claim that the AIM was indeed a stepping stone of the MM during its first years (Acrot et al., 2007). On the contrary, only circa 13% of the switches from the MM to the AIM occurred between 1996 and 2000. The majority of the firms that moved from the MM to the AIM was during the period of 2001-2006, indicating that the AIM started to form its own identity and gained respect from well-established firms since 2001. However, the total proceeds of the firms that upgrade to the MM are approximately three times higher than those that downgrade to the AIM.

Table 4-2: Market switches between the two UK markets

Panel A: Switches from the MM to the AIM			Panel B: Switches from the AIM to the MM		
Year	Number of moves	Proceeds (£m)	Year	Number of moves	Proceeds (£m)
1996	1	2.4	1996	0	0.0
1997	4	9.4	1997	0	0.0
1998	3	0.0	1998	17	26.1
1999	10	6.0	1999	13	45.0
2000	20	58.1	2000	13	230.2
2001	32	4.3	2001	6	40.5
2002	37	2.2	2002	5	0.0
2003	43	5.8	2003	2	0.0
2004	20	3.0	2004	1	0.0
2005	35	0.0	2005	1	0.0
2006	29	56.0	2006	3	0.0
2007	6	1.5	2007	10	0.0
2008	10	14.0	2008	12	0.0
2009	3	0.0	2009	10	104.9
2010	6	0.0	2010	6	0.0
2011	6	1.8	2011	8	0.0
2012	3	5.4	2012	3	0.0
2013	8	7.0	2013	0	0.0
2014	6	9.0	2014	5	229.4
2015	5	49.9	2015	4	20.0
<i>Total</i>	<i>287</i>	<i>235.8</i>	<i>Total</i>	<i>119</i>	<i>696.1</i>

This table shows the final sample switches and proceeds between the two UK markets from 1996 to 2015. Panel A shows the moves from the MM to the AIM and Panel B presents the moves from the AIM to the MM. The market switches and proceeds are retrieved from the “*New issues and IPO summary*” spreadsheet provided by the LSE website.

Panels A and B of table 4-3 show the industry classification for the firms that move from the MM to the AIM and from the AIM to the MM respectively. In order to categorize the firms into different industries, I use the ICB industry classification which is available through Datastream. The majority of the firms that move from the MM to the AIM are from the categories of industrials which is almost 30% of the sample, consumer services (17.07%), consumer goods (14.63%), technology (13.94%) and financials (13.94%). Similarly, the majority of the firms that move from the AIM to the MM are from the categories of financials (31.09%), consumer services (14.29%), technology (13.45%), industrials (11.76%) and basic materials (10.08%). Overall, there is not a major clustering on specific industries in both events.

Table 4-3: Industry classification

Panel A: Switches from the MM to the AIM			
	Frequency	%	Cum.%
Basic Materials	10	3.48	3.48
Consumer Goods	42	14.63	18.12
Consumer Services	49	17.07	35.19
Financials	40	13.94	49.13
Health Care	14	4.88	54.01
Industrials	85	29.62	83.62
Oil & Gas	4	1.39	85.02
Technology	40	13.94	98.95
Telecommunications	3	1.05	100
Total	287	100	
Panel B: Switches from the AIM to the MM			
	Frequency	%	Cum.%
Basic Materials	12	10.08	10.08
Consumer Goods	1	0.84	10.92
Consumer Services	17	14.29	25.21
Financials	37	31.09	56.30
Health Care	9	7.56	63.87
Industrials	14	11.76	75.63
Oil & Gas	9	7.56	83.19
Technology	16	13.45	96.64
Telecommunications	2	1.68	98.32
Utilities	2	1.68	100
Total	119	100	

This table shows the industry distribution among the firms that move between the two UK markets from 1996 to 2015. Panel A shows the firms that move from the MM to the AIM and panel B shows the firms that move from the AIM to the MM. I use the ICB industry classification system available on Datastream.

Table 4-4 depicts the summary statistics of the sample firms during the year prior to the announcement of the firms' transitions. Panel A reports the statistics for the firms that move from the MM to the AIM, panel B shows the statistics for the firms that move from the AIM to the MM and panel C illustrates the differences between the two samples. I find that the firms that move towards the MM are significantly larger firms, with higher growth. The average market capitalization of the up-switches is 245m, with a mean M/B equal to 2.91, while for the counterpart figures of the down switchers are 28m and 2.91, respectively. The firms that switch to the MM appear to have significantly higher stock liquidity compared to the firms that switch to the AIM. However, the stock volatility between the two samples is reported to be the same. Finally, firms moving to the AIM raise on average 4.48m more funds.

Table 4-4: Summary statistics

Panel A: Switches from the MM to the AIM						
	Mean	Median	Min	Max	SD	<i>N</i>
Size	27,770	13,311	1,099	552,147	49,987	226
M/B	1.923	1.060	-7.780	20.380	3.442	226
Stock Liquidity	0.003	0.002	0.000	0.076	0.006	226
Volatility	0.002	0.002	0.000	0.009	0.001	226
Proceeds (£m)	0.929	0.000	0.000	53.000	4.422	226
Panel B: Switches from the AIM to the MM						
	Mean	Median	Min	Max	SD	<i>N</i>
Size	245,537	115,162	2,669	2,630,773	417,826	96
M/B	2.912	2.070	-44.210	27.500	8.637	96
Stock Liquidity	0.004	0.002	0.000	0.064	0.008	96
Volatility	0.002	0.002	0.000	0.006	0.001	96
Proceeds (£m)	5.418	0.000	0.000	170.000	24.525	96
Panel C: Differences between the two samples						
	Mean	P-value	Median	P-value		
Size	-217,837***	(0.000)	-101,851***	(0.000)		
M/B	-0.989	(0.142)	-1.010***	(0.000)		
Stock Liquidity	-0.001*	(0.087)	0.000**	(0.022)		
Volatility	0.000	(0.413)	0.000	(0.369)		
Proceeds (£m)	-4.489***	(0.008)	0.000	(0.604)		

This table shows the summary statistics of the firms that move between the two UK markets from 1996 to 2015. Panel A presents the firms that move from the MM to the AIM, panel B shows the firms that move from the AIM to the MM and panel C depicts the differences between the two samples. Size is measured by the market capitalisation and it is scaled in thousands. M/B is the market to book ratio. Stock liquidity is the daily average of the trading volume to shares outstanding ratio over the days (-250, -81) prior to the announcement of the switch. Volatility is the standard deviation of the stock returns over the days (-250, -81) before the announcement of the switch. Proceeds are the funds raised during the switch in millions and are collected from the “*New issue and IPO summary*” spreadsheet offered by the LSE website. The financial data are retrieved from Worldscope. Stock and volume data are retrieved from Datastream. The numbers in italic represent the number of observations. P-values are reported in the parentheses. The symbols *, ** and *** denote statistical significance at the 10, 5 and 1% levels respectively.

4.3.1 Control firms' sample

In order to compare the event firms with other similar firms that did not switch markets during that period, I perform a matching method following a similar methodology as Brophy et al. (2009). To perform the matching with the control firms, I first download the yearly FTSE All Share and FTSE AIM All Share constituents lists from Datastream at the end of each calendar year along with the market capitalisation (size), M/B ratio and ICB codes of the constituent firms. I use the yearly FTSE AIM All Share lists for the firms that move from the AIM to the MM and the yearly FTSE All Share lists for the firms that move from the MM to the AIM. I match each event firm with a control firm that is in the same constituents list, it is under the same industry classification and it has the smallest difference in the one year lagged market capitalisation and M/B ratio. For the years that there are no available

constituents lists on Datastream, I match them with the closest available list⁴⁶. If the size or M/B values of the control firm is missing, I match the firm with another company that has the same industry group with non-missing size and M/B values. In total I match 279 out of the 287 firms from the MM to AIM dataset and 104 out of the 119 firms from the AIM to the MM dataset. Lastly, I download the stock returns of the matched firms from Datastream. Table 4-5 shows the breakdown of the control firms matching.

Table 4-5: Control firms matching process

Description	(1) MM to AIM	(2) AIM to MM
Initial Sample	303	145
(-) Missing Identifiers	3	1
(-) Missing Announcement dates	1	2
(-) Firms with no stock data/non available on Datastream	12	23
Final Sample	287	119
(-) Sample firms with no market cap or M/B data	8	15
Matched Sample	279	104

This table reports the control firms matching process. The initial sample is retrieved from the “*New issues and IPO summary*” spreadsheet provided by the LSE website. The identifiers and announcement dates are manually collected from InvestEgate, Nexis and Perfect Information databases. The matching is based on their industry (ICB), market capitalisation (size) and M/B following Brophy et al. (2009).

4.3.2 Market anticipation and concurrent announcement samples collection

In order to control for abnormal stock returns that could be attributed to market anticipation, as suggested by Jensen and Ruback (1983), Jarrell and Poulsen (1989b) and Sanders and Zdanowicz (1992), I search whether there are news or rumours of the moves up to one year prior to the public announcement of the switches. The rumours are hand collected from the FT archive and Nexis databases. For the hand collection I use the name of the company as described by the “*New issues and IPO summary*” spreadsheet provided by the LSE website and the following key words: AIM, Alternative Investment Market, Main Market, MM, official list, official market, move, switch, list, delist and transition. I search through the full articles rather than just the headlines. The difference between rumours and the announcement dates is that the rumours are unofficial discussions about a potential switch on the media while the announcements dates are official announcements of the switches from the companies.

Table 4-6 presents the rumours summary statistics. Panels A shows the number of firms with rumours, Panel B reports the day differences between the rumours and the official

⁴⁶ The FTSE All Share constituents’ lists are available from 1996 while the FTSE AIM All Share constituents are available from 2001.

announcements and Panel C shows the impact of those rumours in the firms' stock prices. More specifically, in Panel C I report the returns of the firms during the announcement of the rumour (-1, 1) and ten days after the rumours (1, 10). For both the sample of the up-switchers and the sample of the down-switchers a total of 15 firms in each respective group have rumours. This constitutes about 5% of the firms that upgraded market and 13% of the firms that downgraded market. The average (median) days between the rumours and the actual announcement is circa 72 (66) days for the firms that move from the MM to the AIM and approximately 157 (143) days for the firms that switch from the AIM to the MM. I also find that the impact of rumours in stock returns is -0.9% for the firms that switch from the MM to the AIM and 2.1% for the firms that move from the AIM to the MM. The results are significant at the 10% and 1% level respectively. This evidence suggests that rumours can potentially explain some of the abnormal stock returns prior to market switches.

Table 4-6: Rumours summary statistics

Panel A: Firms with rumours		
	(1) MM to AIM	(2) AIM to MM
Financial Times archive	5	6
Nexis database	10	9
Total	15	15
% of rumours	0.052	0.126
Panel B: Day difference between rumours and official announcements		
	(1) MM to AIM	(2) AIM to MM
Average days	72	157
Median days	66	143
Panel C: Impact of rumours on returns		
Windows	(1) MM to AIM	(2) AIM to MM
(-1, 1)	-0.009* (0.057)	0.021*** (0.004)
(1, 10)	-0.017*** (0.000)	0.023*** (0.000)

This table reports the summary statistics of the rumours. Panel A shows the number of firms with rumours, panel B shows the day differences between the rumours and the actual announcement of the switches and panel C shows the impact of those rumours in the firm's stock prices. The rumours are manually collected from the Financial Times archive and Nexis databases. The abnormal stock returns are calculated by employing an OLS market model following Brown and Warner (1985). The symbols * and *** denote statistical significance at the 10 and 1% levels respectively.

I further create another group of the firms that simultaneously announced another major corporate event (e.g. takeovers, mergers, annual and half year results) on the same day or one month prior to the switch announcement in order to examine whether the abnormal stock prices are attributed to the market transitions or to other major corporate announcements. I

use a one month window as I also want to eliminate firms that announced a major corporate event only few days prior to our event. This group is called Concurrent Announcement (CA). For the hand collection of other major corporate events I use Nexis and InvestEgate databases. Hence, I create three sub-sample; the first group includes the firms which announced more than one major corporate events (CA), the second group includes the firms which are discussed in the press regarding the switch prior to the actual announcement of the transition (rumours) and the third group includes the firms without any rumours or CAs which I call “*free sample*”.

Table 4-7 presents the sub samples of the three different groups. The firms that announced a major corporate event are 186 for the MM to the AIM dataset and 74 for the AIM to the MM dataset. The firms that are discussed in the news before the official announcement are 15 for the MM to the AIM and AIM to the MM datasets respectively. Finally, the firms that have no rumours or CAs are 86 for the MM to the AIM group and 30 for the AIM to the MM group. Some examples of rumours and CAs are presented in Appendix 3.

Table 4-7: Breakdown of the sub-groups

Description	(1) MM to AIM	(2) AIM to MM
CA sample	186	74
Rumours sample	15	15
Free sample	86	30
Total sample	287	119

This table shows the breakdown of the three subgroups. The CA sample includes the firms that announced a major corporate during the switch announcement or one month prior to the announcement. The rumours sample includes the firms that are mentioned in the press with regards to the move one year prior to the official announcement of the switch. The free sample includes the firms that do not have any rumours or CAs. The rumours and CAs are hand collected from the FT archive, Nexis and InvestEgate databases using the name of the firm as provided by the “*New issues and IPO summary*” spreadsheet, downloaded from the LSE website, and a series of key words.

4.4 Methodology

Banz (1981) and Reinganum (1981) argue that the CAPM residuals are on average negative for large firms and positive for small firms. In my samples, the size gap between the AIM firms and the MM firms is large, since AIM firms are generally larger than MM firms prior to their move to the other market. Seyhun (1986) argues that this systematic risk could lead to biases in estimating abnormal stock returns. The author also supports the use of the market model for the measurement of the returns due to the fact that market model prediction errors have an expected value of zero for firms of any size, avoiding the bias introduced by CAPM. Accordingly, I measure the abnormal stock returns prior to the announcements of the moves from the AIM to the MM and vice versa using an event study methodology, employing an

OLS market model following Brown and Warner (1985). In order to measure the abnormal trading volume, I follow Bris (2005) and King (2009) using a conservative model which considers as abnormal trading volume only the movements of trading volume that are higher than the average trading volume plus two standard deviations. The $t = 0$ is the first public announcement of the transitions.

4.4.1 Calculation of abnormal stock returns

The abnormal stock returns are calculated as follows:

$$AR_{i,t} = R_{i,t} - \alpha - \beta * R_{M,t} \quad (4.1)$$

Where $AR_{i,t}$ is the excess return of a security i at day t , $R_{i,t}$ is the logarithmic return of security i at day t and $R_{M,t}$ is the return of the market at the day t . Following Jabbour et al. (2000), Betton and Eckbo (2000) and Siganos and Papa (2015), the event window is 60 trading days prior to the public announcements and ends 20 days after the announcements (-60 +20). Another reason that I use this window is due to the fact that the UK regulators prohibit insider trading during close periods, that is 60 days prior to yearly or half yearly results, due to the fact that they deem this time period especially sensitive for illegal insider trading activities. The estimation window is 250 to 81 trading days prior to the first public announcement (-250 -81). Following King (2009) and Siganos and Papa (2015), I leave a gap between the event and control window in order to make sure that the estimation window is not contaminated by the event window. I calculate the daily abnormal stock returns using the FTSE All Share index for the firms that switch from the MM to the AIM and the FTSE AIM All Share index for the firms that switch from the AIM to the MM as a proxy for the market.

4.4.2 Calculation of abnormal trading volume

The abnormal trading volume is calculated as follows:

$$AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol}) \text{ if } V_{i,t} > \bar{V}_i + 2S_{vol} \text{ otherwise } 0 \quad (4.2)$$

Where $AV_{i,t}$ is the excess volume of a firm i at day t , $V_{i,t}$ is the volume of the firm i at day t divided by the number of the common shares outstanding and \bar{V}_i and S_{vol} are the mean and standard deviation of a firm i over the estimation window (-250, -81). The event and estimation windows are the same as for the calculation of abnormal stock returns.

This methodology is based on prior theoretical assumptions on US and Canadian studies on takeovers or other major corporate events (e.g. Keown and Pinkerton, 1981, Meulbroek,

1992, Jabbour et al., 2000, King, 2009) and on methods the LSE uses in order to generate alerts for possible trading on price sensitive information (Dubow and Monteiro, 2006; Monteiro, 2007; Goldman et al., 2014). In addition, this methodology is used by the SEC, as they may require evidence of abnormal stock returns in the courts for some insider trading cases based on information leakage, when they seek to prove that a firm or an individual has engaged in market abusive behaviours (Mitchell and Netter, 1994). Its power is that it captures abnormal stock price and trading volume actions which could be attributed to leakage of inside information that are undetected by the regulators. However, its limitation is that it is unable to identify the insiders who trade prior to the events and their strategies. Testing for insider trading by examining the volume of disclosed trades by insiders eliminates this limitation (Chapter 5 examines for abnormal insider trading activity based on insiders disclosed trades).

4.5 Empirical results

4.5.1 Results on abnormal stock returns

Table 4-8 reports the Average Abnormal Returns (AAR) and the CAARs of the entire sample during the event window (-60, +20). Panel A shows the firms that move from the MM to the AIM and panel B presents the firms that move from the AIM to the MM. The CAARs of panels A and B are also graphically presented in Figures 4-3 and 4-4 respectively. As shown in panel A the AARs of the firms that switch to the AIM fluctuate around zero and become significantly negative mostly on the days around the event date. The CAARs are negative and significant, mostly at the 1% level, from day -59 reaching -3.88% at day -1. In contrast, as shown in panel B, the AARs of the firms that switch to the MM appear to be mostly positive and start to become significant from day -42. The CAARs start to become positive and significant from day -53 and reach 5.82% on day -1. The ARR on the announcement day (day=0) are statistically significant at the 1% level on both events, indicating that the date of the first public announcement has been correctly captured in the manually collected sample. More specifically, the announcement returns (-1, +1) are -1.5% for the firms that downgrade to the AIM and 1.7% for the firms that upgrade to the MM. The announcements returns are lower compared to the study of Jenkinson and Ramadorai (2013) who find announcement abnormal returns of -4.3% for the firms that switch from the MM to the AIM and 4.6% for the firms that switch from the AIM to the MM. This difference could be attributed to the different time frame that we use as well as the different methodology.

In addition, I perform an event study methodology using a 90 trading days window prior to the public announcement of the switches in order to examine whether the 60 trading day

period captures the abnormal stock price activity. I calculate the returns using the market model. Further, in order to isolate the firms that switch markets, I exclude the firms with rumours and the firms that simultaneously announced a takeover or a merger which according to the literature are the main events that are known to trigger significant abnormal stock returns prior to their announcements (Jabbour et al., 2000; King, 2009). Figure 4-3 presents the CAARs of the firms, 90 trading days prior to the move from the MM to the AIM and Figure 4-4 shows the 90 trading day CAARs of the companies that move from the AIM to the MM. As shown in Figure 4-3, the abnormal stock returns for the switches from the MM to the AIM start approximately 64 trading days prior to the official announcement while Figure 4-4 shows that the abnormal returns start approximately 53 trading days prior to the public announcement. The figures report that the 60 day event period captures the price run-ups and price reduction actions.

Overall, the results show that the firms that move from the MM to the AIM experience negative abnormal stock returns prior to the announcement of their switch which is in line with the first hypothesis. On the contrary, the firms that move from the AIM to the MM experience price run-ups prior to the announcement of their transition which is in line with the second hypothesis. However, the results could be attributed either to the information leakage hypothesis or to the market anticipation hypothesis. In order to disentangle whether the abnormal stock reactions are due to market anticipation or to information leakage I perform an additional test which is reported in section 4.5.3.

4.5.2 Results on abnormal trading volume

Bris (2005) argues that another sign of potential illegal trading is the abnormal trading volume. In this section I explore the abnormal trading volume prior to the public announcement of the moves. Apart from the returns, Table 4-8 also presents the Average Abnormal Volume (AAV) and the Cumulative Average Abnormal Volume (CAAV) over the event window (-60, +20). Panel A shows the firms that switch from the MM to the AIM while panel B presents the firms that move from the AIM to the MM. Panel's A and B CAAV are also graphed in Figure 4-5 and 4-6 respectively. The CAAV on day -1 is 3.40% for the firms that move from the MM to the AIM and 3.63% for the firms that move from the AIM to the MM, suggesting that the firms that switch between the two UK markets experience abnormal pre-announcement trading volume. The CAAV of the firms that switch from the MM to the AIM is statistically significant from day -58 while the CAAV for the firms that move from the AIM to the MM is positive and significant from day -53. The high and significant AAV on the announcement date (day=0) on both events, once again suggests that

the announcement dates are captured correctly. A further analysis on the relation between abnormal stock returns and abnormal trading volume is reported in section 4.6.4.

Table 4-8: Average abnormal stock returns and trading volume prior to the switch announcements between the two UK markets

Panel A: Switches from the MM to the AIM									
Day	AAR %	AAV %	CAAR %	CAAV %	Day	AAR %	AAV %	CAAR %	CAAV %
-60	-0.0023	0.0005**	-0.0023	0.0005	-19	-0.0002	0.0005**	-0.0288***	0.0256***
-59	-0.0013	0.0004***	-0.0036***	0.0009	-18	-0.0009	0.0002*	-0.0297***	0.0258***
-58	0.0022	0.0005***	-0.0014*	0.0014*	-17	-0.0018	0.0005**	-0.0315***	0.0263***
-57	0.0001	0.0006**	-0.0013*	0.0020***	-16	0.0028*	0.0006***	-0.0287***	0.0269***
-56	0.0003	0.0004	-0.0011*	0.0024***	-15	0.0005	0.0005**	-0.0282***	0.0274***
-55	-0.0014	0.0002**	-0.0024***	0.0026***	-14	0.0015	0.0007**	-0.0267***	0.0281***
-54	0.0007	0.0003*	-0.0018***	0.0029***	-13	-0.0035**	0.0004**	-0.0301***	0.0285***
-53	0.0006	0.0008**	-0.0012**	0.0038***	-12	-0.0017	0.0009***	-0.0319***	0.0295***
-52	-0.0005	0.0012**	-0.0017***	0.0050***	-11	-0.0006	0.0006**	-0.0325***	0.0301***
-51	-0.0011	0.0007	-0.0027***	0.0057***	-10	-0.0029*	0.0009**	-0.0354***	0.0310***
-50	-0.0002	0.0007**	-0.0030***	0.0064***	-9	-0.0023	0.0004**	-0.0377***	0.0314***
-49	0.0006	0.0008*	-0.0024***	0.0072***	-8	0.0011	0.0003**	-0.0366***	0.0317***
-48	-0.0010	0.0004*	-0.0034***	0.0076***	-7	0.0009	0.0004**	-0.0357***	0.0322***
-47	0.0009	0.0007*	-0.0025***	0.0083***	-6	-0.0002	0.0003*	-0.0359***	0.0324***
-46	-0.0013	0.0002*	-0.0038***	0.0086***	-5	-0.0009	0.0003**	-0.0368***	0.0327***
-45	-0.0023	0.0006	-0.0061***	0.0092***	-4	-0.0016	0.0004*	-0.0384***	0.0331***
-44	0.0000	0.0001	-0.0061***	0.0093***	-3	0.0004	0.0002	-0.0380***	0.0333***
-43	-0.0021	0.0003**	-0.0082***	0.0096***	-2	-0.0035**	0.0001**	-0.0415***	0.0334***
-42	-0.0013	0.0023	-0.0095***	0.0119***	-1	0.0027*	0.0006**	-0.0388***	0.0340***
-41	-0.0024	0.0016*	-0.0119***	0.0135***	0	-0.0130***	0.0049***	-0.0518***	0.0389***
-40	-0.0023	0.0005**	-0.0142***	0.0140***	1	-0.0046*	0.0032**	-0.0565***	0.0421***
-39	-0.0028	0.0003**	-0.0170***	0.0143***	2	-0.0040*	0.0015***	-0.0605***	0.0436***
-38	0.0005	0.0006***	-0.0165***	0.0149***	3	-0.0041*	0.0007***	-0.0646***	0.0443***
-37	-0.0035**	0.0005***	-0.0200***	0.0154***	4	-0.0031	0.0010***	-0.0677***	0.0452***
-36	-0.0009	0.0007**	-0.0209***	0.0161***	5	-0.0054***	0.0019***	-0.0731***	0.0471***
-35	0.0008	0.0009**	-0.0201***	0.0169***	6	-0.0007	0.0009***	-0.0738***	0.0481***
-34	-0.0014	0.0002*	-0.0216***	0.0171***	7	-0.0034**	0.0006**	-0.0772***	0.0487***
-33	-0.0010	0.0003*	-0.0226***	0.0175***	8	-0.0061***	0.0008***	-0.0833***	0.0495***

Day	AAR %	AAV %	CAAR %	CAAV %	Day	AAR %	AAV %	CAAR %	CAAV %
-32	0.0010	0.0003	-0.0216***	0.0178***	9	0.0000	0.0005***	-0.0834***	0.0499***
-31	0.0011	0.0003**	-0.0205***	0.0181***	10	0.0019	0.0018	-0.0814***	0.0512***
-30	-0.0002	0.0013	-0.0207***	0.0195***	11	-0.0004	0.0014	-0.0818***	0.0531***
-29	-0.0012	0.0004**	-0.0219***	0.0199***	12	-0.0032*	0.0012***	-0.0850***	0.0543***
-28	-0.0027*	0.0002*	-0.0246***	0.0201***	13	-0.0021	0.0005***	-0.0871***	0.0548***
-27	0.0022	0.0006**	-0.0223***	0.0207***	14	-0.0015	0.0006**	-0.0886***	0.0555***
-26	-0.0003	0.0004**	-0.0226***	0.0211***	15	-0.0012	0.0014*	-0.0898***	0.0569***
-25	0.0008	0.0006**	-0.0218***	0.0216***	16	-0.0012	0.0017***	-0.0910***	0.0586***
-24	-0.0021	0.0006**	-0.0239***	0.0222***	17	0.0009	0.0006***	-0.0901***	0.0593***
-23	0.0022	0.0007*	-0.0217***	0.0229***	18	0.0011	0.0013**	-0.0890***	0.0606***
-22	-0.0027	0.0012**	-0.0244***	0.0241***	19	0.0012	0.0015***	-0.0878***	0.0621***
-21	0.0007	0.0006**	-0.0237***	0.0247***	20	-0.0048***	0.0007***	-0.0926***	0.0627***
-20	-0.0049***	0.0004**	-0.0286***	0.0251***					

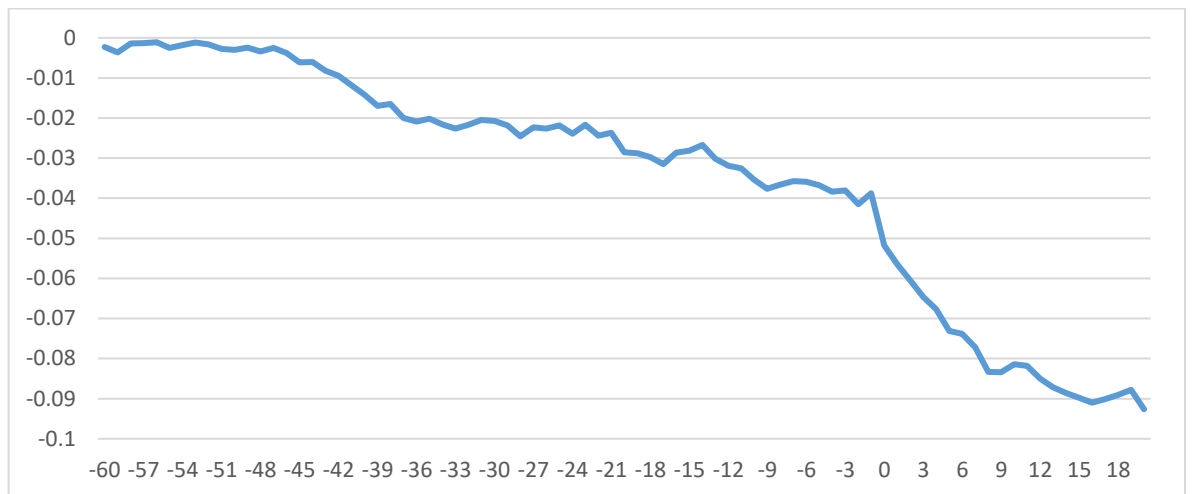
Panel B: Switches from the AIM to the MM

Day	AAR %	AAV %	CAAR %	CAAV %	Day	AAR %	AAV %	CAAR %	CAAV %
-60	0.0007	0.0012	0.0007	0.0012	-19	0.0011	0.0000	0.0341***	0.0308***
-59	-0.0032	0.0005*	-0.0025	0.0016	-18	-0.0001	0.0003	0.0339***	0.0311***
-58	-0.0019	0.0007**	-0.0044***	0.0024**	-17	0.0042**	0.0001	0.0382***	0.0311***
-57	-0.0030	0.0005*	-0.0074***	0.0029***	-16	-0.0023	0.0002**	0.0358***	0.0313***
-56	0.0020	0.0007*	-0.0055**	0.0036***	-15	-0.0010	0.0003	0.0348***	0.0316***
-55	0.0034	0.0009	-0.0021	0.0045***	-14	0.0000	0.0004	0.0347***	0.0320***
-54	0.0020	0.0024	-0.0001	0.0068***	-13	0.0049**	0.0001	0.0397***	0.0321***
-53	0.0015	0.0019	0.0014*	0.0087***	-12	-0.0005	0.0002	0.0392***	0.0322***
-52	0.0007	0.0016**	0.0021***	0.0104***	-11	0.0025	0.0004	0.0417***	0.0326***
-51	0.0001	0.0009*	0.0023***	0.0113***	-10	-0.0008	0.0002*	0.0409***	0.0328***
-50	-0.0018	0.0008**	0.0005	0.0121***	-9	0.0006	0.0003	0.0415***	0.0331***
-49	0.0008	0.0006	0.0013*	0.0127***	-8	0.0045*	0.0005**	0.0461***	0.0336***
-48	0.0006	0.0009***	0.0019***	0.0137***	-7	-0.0018	0.0004**	0.0443***	0.0339***
-47	0.0001	0.0006*	0.0020***	0.0142***	-6	0.0033	0.0006*	0.0476***	0.0345***
-46	0.0000	0.0003**	0.0020***	0.0145***	-5	0.0064**	0.0007***	0.0540***	0.0352***
-45	0.0011	0.0002	0.0030***	0.0148***	-4	0.0012	0.0005**	0.0552***	0.0357***

Day	AAR %	AAV %	CAAR %	CAAV %	Day	AAR %	AAV %	CAAR %	CAAV %
-44	-0.0010	0.0005	0.0020***	0.0153***	-3	0.0000	0.0002**	0.0552***	0.0359***
-43	0.0007	0.0011	0.0027***	0.0164***	-2	0.0031	0.0000	0.0583***	0.0359***
-42	0.0033*	0.0009**	0.0060***	0.0173***	-1	-0.0001	0.0004*	0.0582***	0.0363***
-41	0.0032	0.0010**	0.0081***	0.0184***	0	0.0111***	0.0026***	0.0693***	0.0389***
-40	0.0032	0.0005	0.0113***	0.0189***	1	0.0062*	0.0019**	0.0755***	0.0408***
-39	0.0001	0.0001	0.0114***	0.0190***	2	-0.0003	0.0008*	0.0752***	0.0416***
-38	-0.0008	0.0001	0.0106***	0.0191***	3	-0.0016	0.0002	0.0735***	0.0418***
-37	0.0017	0.0005	0.0123***	0.0196***	4	-0.0013	0.0008*	0.0723***	0.0426***
-36	0.0003	0.0004	0.0126***	0.0199***	5	0.0036	0.0004**	0.0759***	0.0430***
-35	-0.0016	0.0003	0.0110***	0.0202***	6	-0.0015	0.0004**	0.0744***	0.0434***
-34	0.0022	0.0001	0.0132***	0.0203***	7	0.0026	0.0003*	0.0770***	0.0437***
-33	0.0014	0.0002**	0.0145***	0.0205***	8	-0.0020	0.0002*	0.0750***	0.0439***
-32	0.0037*	0.0003	0.0182***	0.0208***	9	-0.0058**	0.0003**	0.0692***	0.0442***
-31	0.0038	0.0002*	0.0220***	0.0210***	10	0.0022	0.0006*	0.0714***	0.0448***
-30	0.0019	0.0027	0.0239***	0.0237***	11	-0.0012	0.0003	0.0702***	0.0451***
-29	0.0007	0.0004**	0.0246***	0.0241***	12	-0.0013	0.0009***	0.0689***	0.0460***
-28	0.0045	0.0007*	0.0291***	0.0248***	13	-0.0017	0.0003*	0.0672***	0.0464***
-27	0.0033	0.0025	0.0325***	0.0273***	14	-0.0022	0.0007*	0.0650***	0.0471***
-26	0.0001	0.0006**	0.0326***	0.0279***	15	-0.0014	0.0005**	0.0635***	0.0476***
-25	-0.0004	0.0004*	0.0322***	0.0283***	16	0.0009	0.0008*	0.0644***	0.0484***
-24	0.0007	0.0004	0.0329***	0.0287***	17	-0.0024	0.0001*	0.0621***	0.0485***
-23	-0.0009	0.0005*	0.0320***	0.0292***	18	-0.0006	0.0000	0.0614***	0.0486***
-22	0.0012	0.0006	0.0332***	0.0297***	19	0.0001	0.0009	0.0615***	0.0495***
-21	0.0014	0.0004*	0.0346***	0.0302***	20	-0.0021	0.0004*	0.0594***	0.0499***
-20	-0.0017	0.0006*	0.0329***	0.0308***					

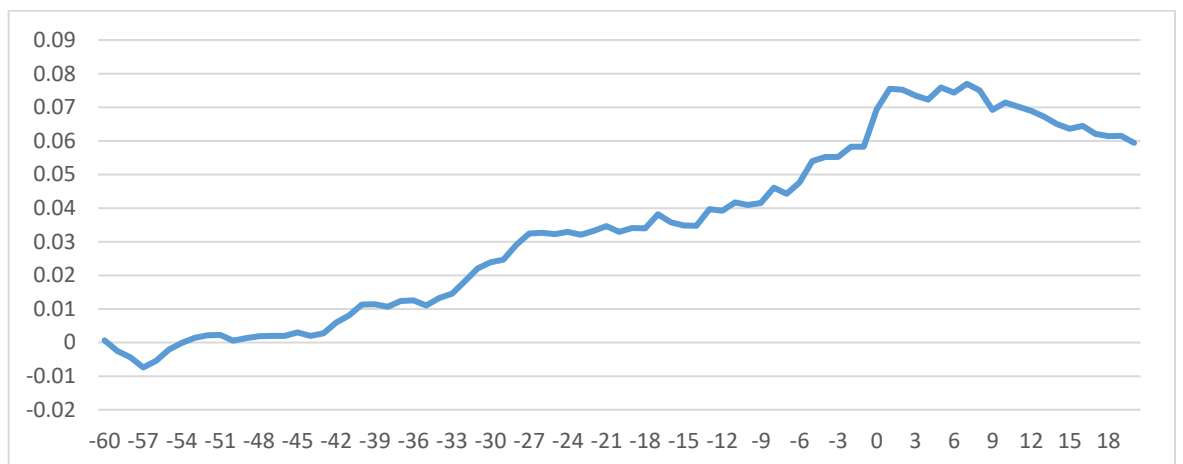
This table reports the average abnormal returns (AAR)/average abnormal volume (AAV) and the cumulative average abnormal returns (CAARs)/cumulative average abnormal volume (CAAV) of the firms that switch between the two UK markets during the event window (-60, +20). For the calculation of abnormal stock returns I use an OLS market model following Brown and Warner (1985) while for the calculation of the abnormal trading volume I use the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). Panel A reports the firms that move from the MM to the AIM and panel B shows the firms that move from the AIM to the MM. The stock prices, volume and indices prices are retrieved from Datastream. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels, respectively.

Figure 4-1: Cumulative average abnormal stock returns of the firms that switch from the MM to the AIM



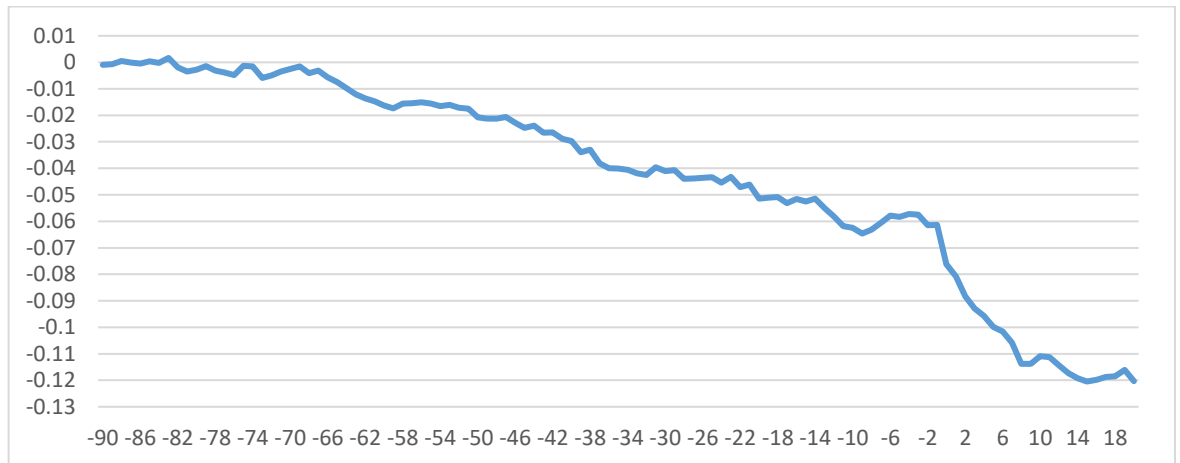
This figure shows the cumulative average abnormal stock returns of the firms that move from the MM to the AIM from day -60 to day +20 for the time period of 1996 to 2015. The horizontal axis represents the days and the vertical axis represent the abnormal stock returns. For the calculation of the returns I use an OLS market model following Brown and Warner (1985). The stock data and indices are retrieved from Datastream. The event day is t=0.

Figure 4-2: Cumulative average abnormal stock returns of the firms that switch from the AIM to the MM



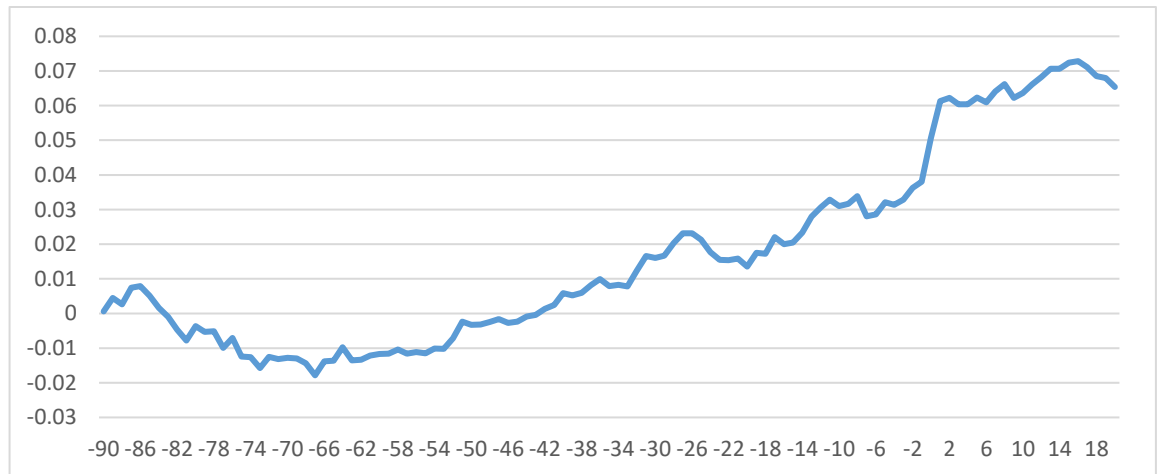
This figure shows the cumulative average abnormal stock returns of the firms that move from the AIM to the MM from day -60 to day +20 for the time period of 1996 to 2015. The horizontal axis represents the days and the vertical axis represent the abnormal stock returns. For the calculation of the returns I use an OLS market model following Brown and Warner (1985). The stock data and indices are retrieved from Datastream. The event day is t=0.

Figure 4-3: *Extended cumulative average abnormal stock returns prior to the announcement of the move from the MM to the AIM (90 days)*



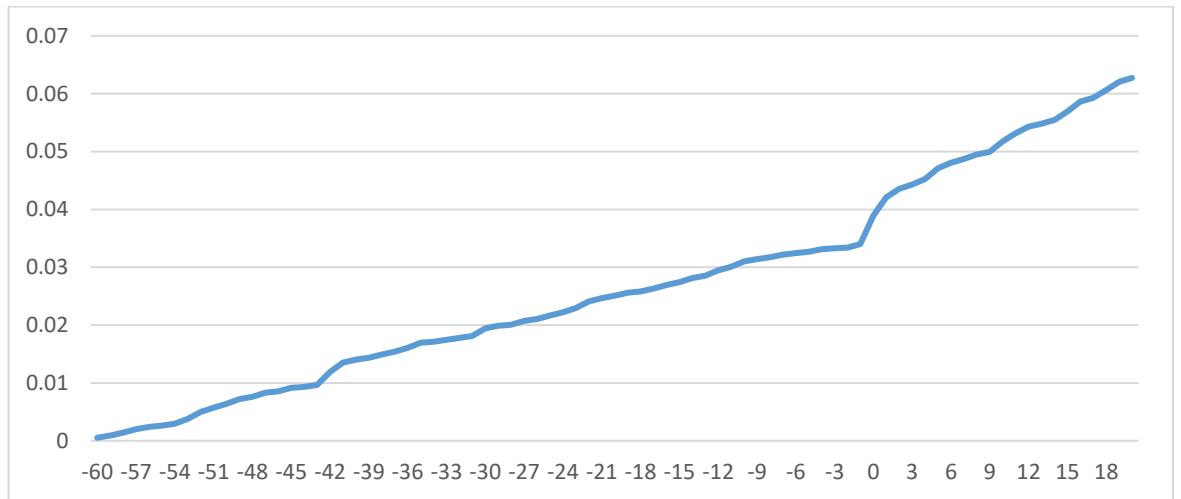
This figure presents the cumulative average abnormal returns 90 trading days prior to the move announcement and 20 days after the announcement of the switch from the MM to the AIM for the period of 1996-2015. The horizontal axis represents the days and the vertical axis represent the abnormal stock returns. The stock returns are calculated using the market model following Brown and Warner (1985). For the calculation of the returns I exclude the firms with rumours and the firms that simultaneously announced a takeover or a merger. The stock data are retrieved from Datastream. The rumours are hand collected through the FT archive and Nexis databases. The market switches announcements are manually collected from InvestEgate and Nexis databases.

Figure 4-4: *Extended cumulative average abnormal stock returns prior to the announcement of the move from the AIM to the MM (90 days)*



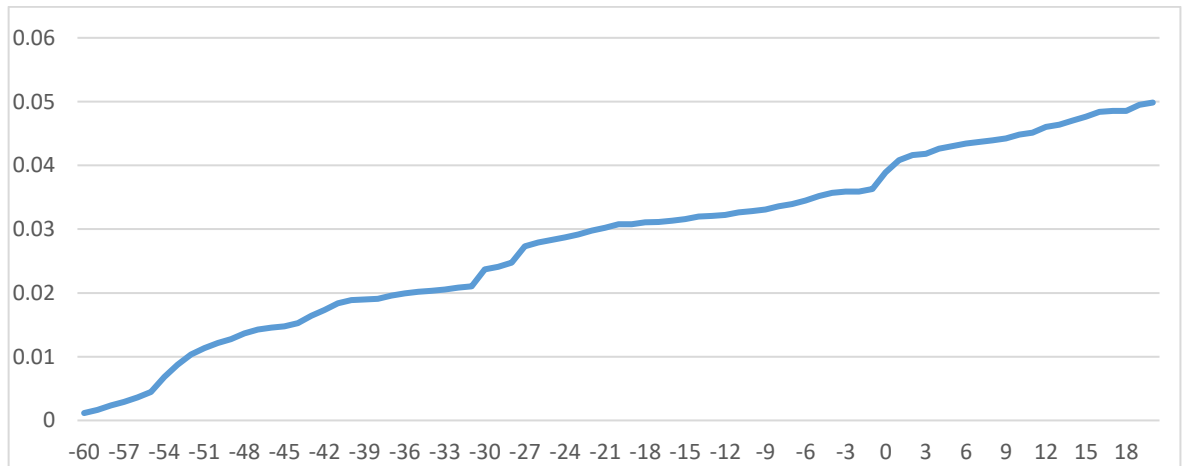
This figure shows the cumulative average abnormal returns 90 trading days prior to the move announcement and 20 days after the announcement of the switch from the AIM to the MM for the period of 1996-2015. The horizontal axis represents the days and the vertical axis represent the abnormal returns. The stock returns are calculated using the market model following Brown and Warner (1985). For the calculation of the returns I exclude the firms with rumours and the firms that simultaneously announced a takeover or a merger. The stock data are retrieved from Datastream. The rumours are hand collected through the FT archive and Nexis databases. The market switches announcements are manually collected from InvestEgate and Nexis databases.

Figure 4-5: Cumulative average abnormal trading volume of the firms that switch from the MM to the AIM



This figure shows the cumulative average abnormal trading volume of the firms that switch from the MM to the AIM from day -60 to day +20 for the time period of 1996 to 2015. The horizontal axis represents the days and the vertical axis represent the abnormal trading volume. For the calculation of the abnormal trading volume I use the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). The volume data are retrieved from Datastream. The event day is $t=0$.

Figure 4-6: Cumulative average abnormal trading volume of the firms that switch from the AIM to the MM



This figure shows the cumulative average abnormal trading volume of the firms that switch from the AIM to the MM from day -60 to day +20 for the time period of 1996 to 2015. The horizontal axis represents the days and the vertical axis represent the abnormal trading volume. For the calculation of the abnormal trading volume I use the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). The volume data are retrieved from Datastream. The event day is $t=0$.

4.5.3 Empirical results after controlling for market anticipation and other major corporate announcements

In this section I investigate whether the pre-announcement abnormal stock reactions are attributed to market anticipation or to information leakage. Jensen and Ruback (1983) argue that the pre-announcement price run-ups could be attributed to the market anticipation over the upcoming corporate event. This market anticipation over an event stems from information provided in various press releases. Thus, investors anticipation of a particular event, accurate or not, could drive the prices up or down depending on the news. In addition, studies report market anticipation to be based on the presence of rumours in the media (Jarrell and Poulsen, 1989b; Sanders and Zdanowicz, 1992). In order to control for market anticipation, I split the sample into firms with rumours about the switch and firms without rumours one year prior to the announcement of the event. Furthermore, in order to isolate the effect of private information on the switches between the two markets, I create another sub-sample with the firms that announced another major corporate on the same day or one month prior to the official switch announcement. The rumours and CA collection is analytically discussed in section 4.3.2. Hence, the sample is divided into three sub-groups. The first group is the firms with rumours, the second group is the firms with CAs, and the third group is the firms without rumours or CAs which I call “*free sample*”.

Table 4-9 reports the returns of the three sub-samples during a 60 and a 30 trading day window as well as during the announcement date. In addition, it shows the differences between the three sub-groups. Panel A presents the firms that move from the MM to the AIM and panel B shows the firms that move from the AIM to the MM. The firms with rumours (column 4) experience the higher returns on all three windows on both events. The differences between the free sample and the rumours (column 7) are statistically significant at the 10% level for the 60 day window for the firms that move from the MM to the AIM and for the 60 and 30 day windows for the firms that move from the AIM to the MM. The companies with CAs (column 3) also experience abnormal stock returns that reach -3.9% and 3.4% for the down-switchers and up-switchers respectively. However, the differences are not significantly different from the free sample firms. Finally, the 60 day returns of the free sample (column 2) remain at -2.6% for the firms that switch from the MM to the AIM and at 4.2% for the firms move from the AIM to the MM, indicating the presence of possible leakage of inside information on both events even after the exclusion of rumours and CAs.

Overall, the results report that the rumours and other major corporate events can partly explain these abnormal stock patterns, with a significant percentage of abnormal stock

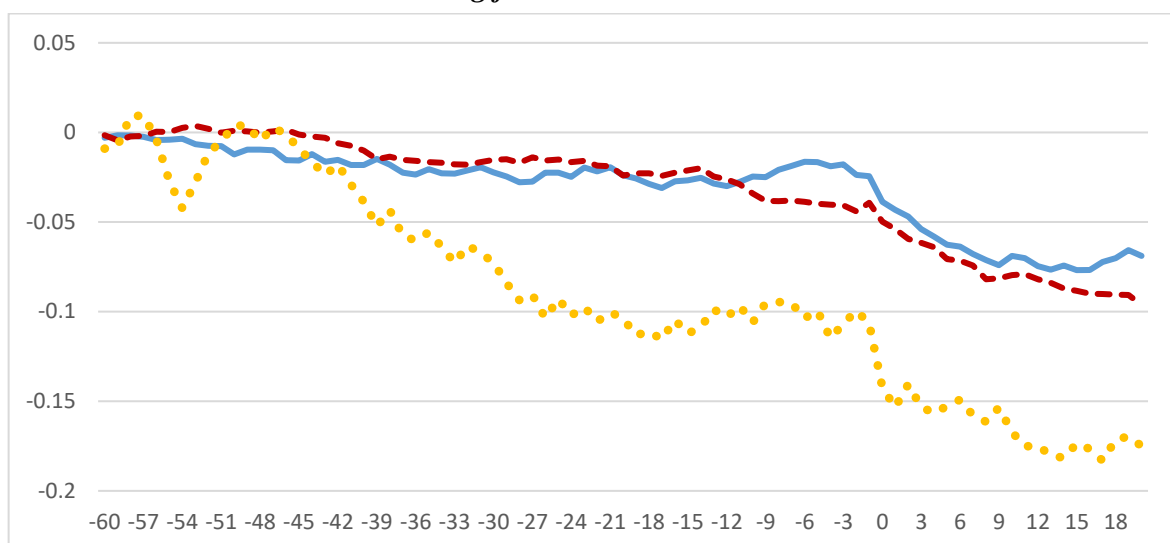
returns being unexplained. Hence, the results show evidence of potential leakage of insider information prior to the market switches above what it could have been predicted based on rumours available on media or other major corporate events. The CAARs for the three groups are also illustrated in Figures 4-7 and 4-8 for the firms that move from the MM to the AIM and for the firms that move from the AIM to the MM respectively.

Table 4-9: Cumulative average abnormal stock returns of the sub-groups

Panel A: Switches from the MM to the AIM							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			C.				
CAAR	Full Sample	Free Sample	Announcement	Rumours	(2) - (3)	(3) - (4)	(2) - (4)
(-60, -1)	-0.038*** (0.000)	-0.026*** (0.000)	-0.039*** (0.000)	-0.107*** (0.000)	0.013 (0.666)	0.068 (0.121)	0.081* (0.081)
(-30, -1)	-0.018*** (0.000)	-0.005*** (0.000)	-0.023*** (0.000)	-0.040*** (0.000)	0.017 (0.386)	0.017 (0.635)	0.034 (0.359)
(-1, 1)	-0.015*** (0.000)	-0.019*** (0.000)	-0.010*** (0.000)	-0.054*** (0.000)	-0.009 (0.293)	0.044 (0.124)	0.035 (0.219)
<i>N</i>	287	86	186	15			
Panel B: Switches from the AIM to the MM							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			C.				
CAAR	Full Sample	Free Sample	Announcement	Rumours	(2) - (3)	(3) - (4)	(2) - (4)
(-60, -1)	0.058*** (0.000)	0.042*** (0.000)	0.034*** (0.000)	0.211*** (0.000)	0.009 (0.879)	-0.178* (0.081)	-0.169* (0.096)
(-30, -1)	0.036*** (0.000)	0.021*** (0.000)	0.018*** (0.000)	0.154*** (0.000)	0.003 (0.930)	-0.136** (0.049)	-0.133* (0.053)
(-1, 1)	0.017*** (0.000)	0.010*** (0.000)	0.019*** (0.000)	0.023*** (0.000)	0.016 (0.326)	-0.003 (0.889)	-0.013 (0.579)
<i>N</i>	119	30	74	15			

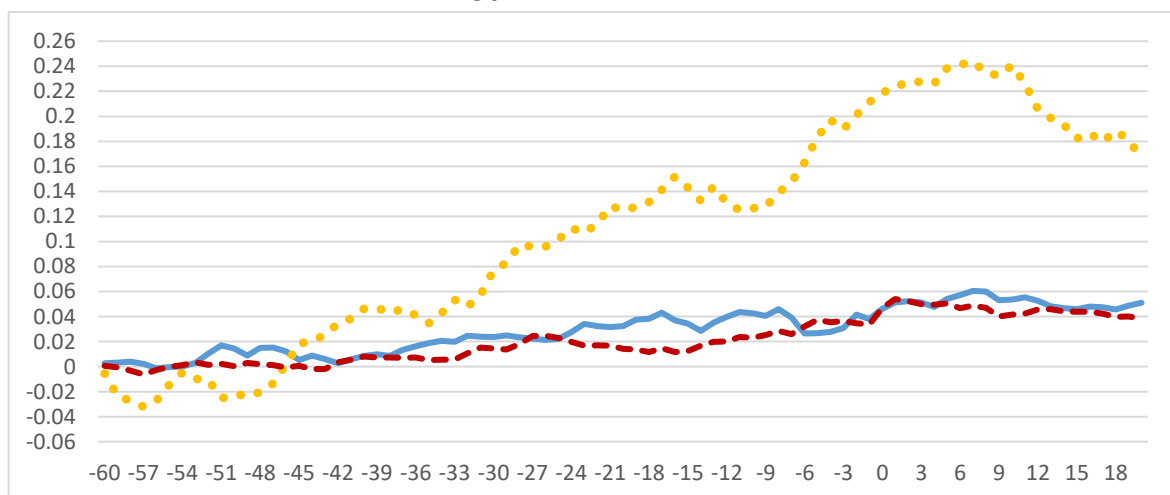
This table presents the cumulative average abnormal stock returns on different event windows dividing the sample into three sub samples. Panel A presents the firms that move from the MM to the AIM and panel B the firms that move from the AIM to the MM. The first column shows the cumulative average abnormal stock returns of the full sample. The second column reports the cumulative average abnormal stock returns of the free sample which is the sample without rumours or CAs. The third column shows the cumulative average abnormal stock returns of the CAs which are the firms that announced another major corporate event on the event date or one month prior to the switch date. The fourth column presents the cumulative average abnormal stock returns of the firms that have rumours which are the firms that their move is discussed in the press one year prior to the official announcement of the event. Column five shows the difference between the free sample and the CAs groups. Column six reports the differences between the CAs and rumours samples and column seven shows the differences between the free sample and rumours sub-groups. For the calculation of the returns I use an OLS market model following Brown and Warner (1985). P-values are reported in the parentheses. The numbers in italic represent the number of observations. The stocks and indices prices are retrieved from Datastream. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels respectively.

Figure 4-7: Cumulative average abnormal stock returns of the sub groups, firms switching from the MM to the AIM



This figure shows the cumulative average abnormal stock returns of the firms that move from the MM to the AIM divided into three categories from day -60 to day +20 for the time period of 1996-2015. The solid line represents the cumulative average abnormal stock returns of the free sample which are the firms without rumours or CAs, the dotted line shows the cumulative average abnormal stock returns of the firms with rumours which are the firms that their switch is discussed in the press up to one year prior to the official announcement of the company and the dashed line depicts the cumulative average abnormal stock returns of the firms with CAs which are the firms that announced another major corporate event along with the market switching announcement or one month prior to the announcement. For the calculation of the returns I use an OLS market model following Brown and Warner (1985). The horizontal axis represents the days and the vertical axis represents the abnormal stock returns. The event day is $t=0$.

Figure 4-8: Cumulative average abnormal stock returns of the sub groups, firms switching from the AIM to the MM



This figure shows the cumulative average abnormal stock returns of the firms that move from the AIM to the MM divided into three categories from day -60 to day +20 for the time period of 1996-2015. The solid line represents the cumulative average abnormal stock returns of the free sample which are the firms without rumours or CAs, the dotted line shows the cumulative average abnormal stock returns of the firms with rumours which are the firms that their switch is discussed in the press up to one year prior to the official announcement of the company and the dashed line depicts the cumulative average abnormal stock returns of the firms with CAs which are the firms that announced another major corporate event along with the market switching announcement or one month prior to the announcement. For the calculation of the returns I use an OLS market model following Brown and Warner (1985). The horizontal axis represents the days and the vertical axis represents the abnormal stock returns. The event day is $t=0$.

4.5.4 The contemporaneous relation between abnormal stock returns and abnormal trading volume

In this section, I explore the interaction between the abnormal stock returns and abnormal trading volume. Prior literature reports that the relation between stock returns and trading volume could indicate potential trading on price sensitive information (e.g. Eyssell and Arshadi 1993, Jabbour et al., 2000, King, 2009, Siganos and Papa 2015). In order to investigate the interaction, I use the following panel regression on daily frequency data using firm random effects.

$$AR_{i,t} = \alpha + \beta_1 * AV_{i,t} + \beta_2 * Rumours_i + \beta_3 * Rumours_i * AV_{i,t} + \beta_4 * Size_{i,t-1} + \beta_5 * \frac{M}{B}_{i,t-1} + \beta_6 * CA_i + \beta_7 * CA_i * AV_{i,t} + \beta_8 * Volatility_{i,t} + \beta_9 * Stock\ liquidity_{i,t} + \gamma * Year + \vartheta * Industry + \varepsilon_{i,t} \quad (4.3)$$

The dependent variable is the *AR*, which represents the abnormal stock returns. The independent variable of interest is the *AV* which is the abnormal trading volume. In order to support the information leakage hypothesis, the parameter coefficient of *AV* should be positive and significant in the interval period from -1 to -60 trading days prior to each move towards the MM. Instead, the relevant parameter coefficient should be negative and significant prior to each firm move towards the AIM.

Informed by the literature, I add a number of control variables. Jensen and Ruback (1983), Jarrell and Poulsen (1989b) and Sanders and Zdanowicz (1992) support that the abnormal stock returns prior to major corporate events are related to market anticipation which is based on rumours in the media prior to the announcements. Hence, I control for rumours using a binary variable that takes the value of one if the move had at least one rumour during the year prior to the announcement of the event, otherwise zero (*Rumours*). Further, Siganos and Papa (2015) find that the relation between abnormal stock returns and abnormal trading volume is higher in firms with rumours. Thus, I include an interaction variable between the rumours and abnormal trading volume in order to explore whether firms with rumours experience higher abnormal volume activity (*Rumours*AV*). This result would potentially support the market anticipation hypothesis. Atiase (1985) and Diamond and Verrecchia (1991) suggest that stock prices in large firms incorporate information faster than in small firms. On reflection of this, I control for firm size measured as the natural logarithm of the market capitalization one year prior to the announcement of the switches (*Size*).

Fama and French (1992) report that value and small cap firms outperform the markets on a general basis. I control for firm growth computed by the market to book ratio one year prior to the announcement of the moves (M/B). Keown and Pinkerton (1981), Jabbour et al. (2000) and King (2009) find a strong positive relation between abnormal stock returns and trading volume prior to major corporate events. Thus, I control for other major corporate events using a binary variable that takes the value of one if the firm announced another corporate event (e.g. takeovers, mergers, final and half year results) on the announcement day or one month prior to the announcement and zero otherwise (CA). I include an interaction variable between the CA and abnormal trading volume to further explore the relation of abnormal trading volume and other major corporate events ($CA*AV$).

Meulbroek (2000) reports that insiders tend to sell securities more aggressively in risky companies. I control for volatility measured by the standard deviation of the stock returns over the estimation window (-250, -81) (*Volatility*). Kyle (1985) and Holmström and Tirole (1993) argue that insiders tend to trade when stock liquidity is higher due to the fact that there are more uninformed insiders in the market. In addition, when stock liquidity is high, informed traders can easily camouflage their trades (Admati and Pfleiderer, 1988). Hence, I control for stock liquidity measured as the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81) (*Stock liquidity*). I also include industry and year fixed effects to control for different industries and for time varying factors. Finally, all variables in the regressions are tested for correlations but none of the variables are highly significantly correlated except for the relation between the *rumours* and CA and the interaction terms between $Rumours*AV$ and AV and $CA*AV$ and AV as it is expected due to the nature of the variables. The results are presented in Tables 4-10 and 4-11.

Table 4-12 reports the regression results for the firms that switch from the MM to the AIM. Column 1 shows the results during the event period (-60, -1) and column 2 during the control period (-80, -61). As shown in column 1, the relationship between abnormal stock returns and abnormal trading volume, which is the variable of interest, is negatively correlated and significant at the 5% level with a parameter coefficient of -0.348, indicating that the price decreases are due to increased selling activity based on potential leakage of inside information. The table reports a stronger relation between abnormal stock returns and abnormal trading volume for the firms that have rumours prior to the announcement of the event with a parameter coefficient of -0.696, offering evidence that part of the pattern is driven by investors who manage to predict the event using rumours. The firms with CA follow the opposite direction with a parameter coefficient of 0.900 which is in line with the

literature that supports that major corporate events experience a strong positive relation between stock returns and trading volume (King, 2009; Siganos and Papa, 2015). It is also important to notice that during the control period (column 2) there is no significant relationship between the abnormal stock returns and the abnormal trading volume which is another sign of abnormal trading due to potential leakage of inside information. Finally, the table reports a negative and significant (p-value of 0.054) relationship between the variables *M/B* and *AR*, supporting the view that value firms overperform the market (Fama and French, 1992). However, the coefficient is low.

Table 4-13 presents the estimates of the regressions on the firms that switch from the AIM to the MM. As in the previous table, column 1 reports the results of the event period (-60, -1) and column 2 shows the results of the control period (-80, -61). The relation between abnormal stock returns and trading volume is positive and significant (coefficient of 0.742) at the 5% level which highlights an increase in stock purchases potentially on price sensitive information prior to the announcement of the moves from the AIM to the MM. In line with the previous results the interaction between abnormal stock returns and abnormal trading volume is no longer significant on the control period (-80, -61), highlighting that the effect evidenced in the event period is abnormal. However, I do not find increased trading volume for firms with rumours and CA on the event period. This could be attributed to the smaller and less sophisticated investor pool of the AIM who do not consistently follow the news or corporate announcements. In addition, consistent with the literature I find that the abnormal stock returns increase with lower levels of risk as shown by the volatility coefficients. Finally, the R^2 on both events is relatively low. The literature reports that asset prices respond not only to news or events but also to irrational trading behaviours such as noise trading, which can lead to a large gap between asset prices and fundamental values (De Long et al., 1989; 1990). Hence, noise trading adds noise into the stock prices, which reflect both information from informed trades and noise from noise traders (Black, 1986) and potentially lead to low R^2 due to the fact that the changes in the prices cannot be fully justified by fundamental values or events. As stated by Roll (1988) stock prices movements are known to be unpredictable, confirming the view of low R^2 in daily stock returns.

In Table 4-14 I assess whether the free sample coefficient differences in *AV* between the event and control periods as shown in Tables 4-12 and 4-13 respectively are significant. The *Control* variable is an indicator variable that takes the value of one if the day falls within the control period (-81, -60) and zero otherwise. The *Control*AV* is an interaction variable between the *Control* variable and *AV* and basically examines whether the differences

between the event and control period are significant. Column 1 shows the firms that switch from the MM to the AIM and column 2 presents the firms that move from the AIM to the MM. The control period and AV interaction (*Control*AV*) is positive and significant at the 10% level for the MM to the AIM specification (column 1) and negative and significant at the 5% level for the AIM to the MM specification (column 2), showcasing that on the event period the relationship between abnormal stock returns and abnormal trading volume is more pronounced. Overall, the results show that on both moves the relation between abnormal stock returns and abnormal trading volume is significant during the event period and insignificant during the control period consistent with the information leakage hypothesis.

Table 4-10: Correlation matrix of the firms that switch from the MM to the AIM

	AR	AV	Rumours	Rumours*AV	Size	M/B	CA	CA*AV	Volatility	Stock Liquidity
AR	1.000									
AV	0.046*** (0.000)	1.000								
Rumours	-0.009 (0.238)	-0.009 (0.345)	1.000							
Rumours*AV	-0.017* (0.091)	0.109*** (0.000)	0.132*** (0.000)	1.000						
Size	-0.017** (0.026)	0.011 (0.261)	0.036*** (0.000)	0.038*** (0.000)	1.000					
M/B	-0.025*** (0.001)	0.032*** (0.001)	-0.048*** (0.000)	0.001 (0.922)	0.157*** (0.000)	1.000				
CA	-0.000 (0.985)	0.019* (0.058)	-0.327*** (0.000)	-0.041*** (0.000)	-0.034*** (0.000)	0.005 (0.565)	1.000			
CA*AV	0.074*** (0.000)	0.844*** (0.000)	-0.021** (0.032)	-0.003 (0.778)	-0.010 (0.296)	0.003 (0.787)	0.067*** (0.000)	1.000		
Volatility	-0.022*** (0.005)	0.017* (0.088)	0.009 (0.222)	0.025** (0.011)	-0.056*** (0.000)	0.146*** (0.000)	0.095*** (0.000)	0.025*** (0.009)	1.000	
Stock Liquidity	0.009 (0.225)	0.067*** (0.000)	0.001 (0.894)	0.023** (0.018)	0.087*** (0.000)	0.041*** (0.000)	-0.029*** (0.000)	0.062 (0.000)	0.209*** (0.000)	1.000

This table reports the correlations among the variables used in the regression analysis for the MM to AIM dataset. The abnormal stock returns (*AR*) are calculated using an OLS market model following Brown and Warner (1985). The *AV* is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *Rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Rumours*AV* is the interaction between the *Rumours* and *AV*, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another corporate event (e.g. takeovers, mergers, final and half year results) during the announcement day or one month prior to the announcement and zero otherwise, *CA*AV* is the interaction between *CA* and *AV*, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). P-values are reported in the parentheses. The stock prices, indices and volume are retrieved from Datastream. Accounting data are collected from Worldscope. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels respectively.

Table 4-11: Correlation matrix of the firms that switch from the AIM to the MM

	AR	AV	Rumours	Rumours*AV	Size	M/B	CA	CA*AV	Volatility	Stock Liquidity
AR	1.000									
AV	0.111*** (0.000)	1.000								
Rumours	0.032*** (0.006)	0.041*** (0.002)	1.000							
Rumours*AV	0.042*** (0.001)	0.728*** (0.000)	0.099*** (0.000)	1.000						
Size	0.010 (0.412)	-0.030** (0.023)	0.210*** (0.000)	-0.001 (0.932)	1.000					
M/B	-0.004 (0.774)	-0.024* (0.071)	-0.112*** (0.000)	-0.024* (0.064)	0.047*** (0.000)	1.000				
CA	-0.018 (0.137)	-0.007 (0.599)	-0.497*** (0.000)	-0.053*** (0.000)	-0.209*** (0.000)	0.215*** (0.000)	1.000			
CA*AV	0.112*** (0.000)	0.655*** (0.000)	-0.039*** (0.003)	-0.004 (0.765)	-0.049*** (0.000)	0.006 (0.627)	0.073*** (0.000)	1.000		
Volatility	-0.002 (0.174)	0.032** (0.016)	0.046*** (0.000)	0.016 (0.243)	0.075*** (0.000)	0.088*** (0.000)	0.149*** (0.000)	0.040*** (0.003)	1.000	
Stock Liquidity	0.006 (0.639)	0.115*** (0.000)	0.127*** (0.000)	0.139*** (0.000)	0.043*** (0.000)	-0.112*** (0.000)	-0.107*** (0.000)	0.019 (0.144)	0.132*** (0.000)	1.000

This table reports the correlations among the variables used in the regression analysis for the AIM to MM dataset. The abnormal stock returns (*AR*) are calculated using an OLS market model following Brown and Warner (1985). The *AV* is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Rumours*AV* is the interaction between the *Rumours* and *AV*, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another corporate event (e.g. takeovers, mergers, final and half year results) during the announcement day or one month prior to the announcement and zero otherwise, *CA*AV* is the interaction between *CA* and *AV*, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). P-values are reported in the parentheses. The stock prices, indices and volume are retrieved from Datastream. Accounting data are collected from Worldscope. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels respectively.

Table 4-12: The relation of abnormal stock returns and abnormal trading volume for the firms that switch from the MM to the AIM

	Dependent: Abnormal stock returns	
	(1) (-60, -1)	(2) (-80, -61)
AV	-0.348** (0.035)	0.403 (0.246)
Rumours	-0.000 (0.783)	0.000 (0.941)
Rumours*AV	-0.696** (0.031)	-0.241 (0.574)
Size	0.000 (0.555)	-0.000 (0.620)
M/B	-0.000* (0.054)	-0.000 (0.140)
CA	-0.000 (0.993)	-0.001 (0.623)
CA*AV	0.900*** (0.000)	-0.377 (0.574)
Volatility	-0.652 (0.194)	-1.428*** (0.006)
Stock Liquidity	-0.002 (0.983)	0.053 (0.792)
Constant	-0.012** (0.012)	-0.005 (0.482)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
R ² -adjusted	0.013	0.013
N	10,420	3,610

This table presents the estimates of the panel regressions on the firms that move from the MM to the AIM during the period of 1996-2015. Column 1 presents the event window (-60, -1) and column 2 shows the control window (-80, -61). The dependent variable is the abnormal stock returns for firm i on day t which are calculated using an OLS market model following Brown and Warner (1985). The abnormal trading volume (AV) is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *Rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Rumours*AV* is the interaction between the *Rumours* and *AV*, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another major corporate event (e.g. takeovers, mergers, final and half year results) during the announcement day or one month prior to the announcement and zero otherwise, *CA*AV* is the interaction between the *CA* and *AV*, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). P-values are reported in the parentheses. The numbers in italic represent the number of observations. The stock prices, indices and volume data are retrieved from Datastream. Financial data are collected from Worldscope. The symbols *, ** and *** denote statistical significance at the 10, 5 and 1% levels respectively.

Table 4-13: The relation of abnormal stock returns and abnormal trading volume for the firms that switch from the AIM to the MM

	Dependent: Abnormal stock returns	
	(1) (-60, -1)	(2) (-80, -61)
AV	0.742** (0.026)	-0.125 (0.745)
Rumours	0.002 (0.186)	-0.001 (0.729)
Rumours*AV	-0.490 (0.174)	0.473 (0.223)
Size	-0.000 (0.860)	0.001 (0.207)
M/B	0.000 (0.547)	-0.000 (0.704)
CA	-0.002 (0.150)	-0.001 (0.624)
CA*AV	0.132 (0.721)	0.865** (0.030)
Volatility	-2.056** (0.020)	-0.892 (0.279)
Stock Liquidity	0.031 (0.621)	-0.004 (0.681)
Constant	0.006 (0.423)	-0.005 (0.655)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
R ² -adjusted	0.028	0.075
<i>N</i>	5,508	1,816

This table presents the estimates of the panel regressions on the firms that move from the AIM to the MM during the period of 1996-2015. Column 1 presents the event window (-60, -1) and column 2 shows the control window (-80, -61). The dependent variable is the abnormal stock returns for firm i on day t which are calculated using an OLS market model following Brown and Warner (1985). The abnormal trading volume (AV) is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *Rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Rumours*AV* is the interaction between the *Rumours* and *AV*, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another major corporate event (e.g. takeovers, mergers, final and half year results) during the announcement day or one month prior to the announcement and zero otherwise, *CA*AV* is the interaction between the *CA* and *AV*, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). P-values are reported in the parentheses. The numbers in italic represent the number of observations. The stock prices, indices and volume data are retrieved from Datastream. Financial data are collected from Worldscope. The symbols *, ** and *** denote statistical significance at the 10, 5 and 1% levels respectively.

Table 4-14: Abnormal stock returns and abnormal trading volume interaction with the control period

	Dependent: Abnormal stock returns	
	(1) MM to AIM	(2) AIM to MM
AV	-0.352** (0.043)	0.754** (0.027)
Control	0.000 (0.946)	0.001 (0.521)
Control*AV	0.737* (0.083)	-1.083** (0.028)
Size	0.002** (0.028)	-0.002 (0.134)
M/B	-0.000 (0.269)	-0.000** (0.025)
Volatility	-1.796 (0.174)	-0.889 (0.585)
Stock Liquidity	0.130 (0.225)	-0.524 (0.309)
Constant	-0.023** (0.034)	0.026* (0.087)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
R ² -adjusted	0.019	0.019
<i>N</i>	<i>3,910</i>	<i>1,716</i>

This table presents the estimates of the panel regressions on the firms that move between the two UK markets during the period of 1996-2015. Column 1 shows the firms that move from the MM to the AIM and column 2 shows the firms that move from the AIM to the MM. The dependent variable is the abnormal stock returns for firm i on day t . The abnormal stock returns are computed using an OLS market model following Brown and Warner (1985). The abnormal trading volume (AV) is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). *Control* is an indicator variable that takes the value of one if the day falls within the control period (-80, -61) and zero otherwise. *Control*AV* is the interaction between the *Control* and *AV* variables. *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81), *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). P-values are reported in the parentheses. The numbers in italic represent the number of observations. The stock prices, indices and volume data are retrieved from Datastream. Accounting data are collected from Worldscope database. The symbols *, and ** denote statistical significance at the 10 and 5% levels respectively.

4.5.5 Control firms matching

In order to further examine the results, I match the firms that move between the two UK markets with similar firms that did not switch markets during the same time period. For the control firms sample process see section 4.3.1. I calculate the matched firms returns using an event study methodology with the same event (-60, +20) and estimation windows (-250, -81). I use two different event study methodologies for the calculation of the abnormal stock returns. I initially use the same methodology that I used for the abnormal stock returns calculation of the event firms by employing an OLS market model, in line with Brown and Warner (1985) (see section 4.4.1). I also perform a benchmark performance by using a single control firm for each firm that moves between the two markets following Barber and Lyon (1997).

The benchmark returns are calculated as follows:

$$AR_{i,t} = R_{i,t} - \alpha - \beta * R_{c,t} \quad (4.4)$$

Where $AR_{i,t}$ is the excess return of a security i at day t , $R_{i,t}$ is the logarithmic return of security i at day t and $R_{c,t}$ is the logarithmic return of the matched control firm at the day t .

Table 4-15 presents the results of the CAARs following the first methodology, using an OLS market model separately on the event and on the matched firms during three different windows. Panel A presents the firms that move from the MM to the AIM and panel B shows the firms that move from the AIM to the MM. Column 1 shows the CAARs of the sample firms, column 2 the CAARs of the control firms and column 3 the differences between the two groups. As shown in panel A, the event firms experience lower CAARs in all three windows compared to the firms that do not switch markets with the differences being significant at the 1% level. More specifically, the CAARs of the control firms are 9.7% in the 60 day window, while on the same window the returns for the event firms are -3.8%. On the contrary, the AIM to the MM event firms experience higher returns in the 60, 30 and 3 day windows in comparison to the firms that do not move from the AIM to the MM with the differences being significant from 10% to 1% levels. For example, as shown in column 3, in the 60 day window the difference between the two groups is 7%. The results confirm the previous findings by showing that similar firms that do not switch markets experience significantly different CAARs from the event firms, prior to the announcement of the switches.

Table 4-15: Cumulative average abnormal stock returns, event and matched firms against the market

Panel A: Switches from the MM to the AIM			
CAAR	(1)	(2)	(1) - (2)
Event windows	Event firms	Control firms	Difference
(-60, -1)	-0.038*** (0.000)	0.097*** (0.000)	-0.135*** (0.000)
(-30, -1)	-0.018*** (0.000)	0.052*** (0.000)	-0.070*** (0.000)
(-1, 1)	-0.015*** (0.000)	0.011*** (0.000)	-0.026*** (0.000)
<i>N</i>	287	279	
Panel B: Switches from the AIM to the MM			
CAAR	(1)	(2)	(1) - (2)
Event windows	Event firms	Control firms	Difference
(-60, -1)	0.058*** (0.000)	-0.012*** (0.000)	0.070* (0.069)
(-30, -1)	0.036*** (0.000)	-0.015*** (0.000)	0.051** (0.050)
(-1, 1)	0.017*** (0.000)	-0.008*** (0.000)	0.025*** (0.002)
<i>N</i>	119	104	

This table shows the cumulative average abnormal stock returns using an OLS market model following Brown and Warner (1985) on the event and control firms during three different windows. Panel A presents the firms that move from the MM to the AIM and their matched firms and panel B shows the firms that move from the AIM to the MM and their matched firms. Column 1 reports the cumulative average abnormal stock returns of the event firms against the market. Column 2 presents the cumulative average abnormal stock returns of the control firms against the market and column 3 [(1)–(2)] shows the mean difference of the returns between the event and the control firms. P-values are reported in the parentheses. The numbers in italic represent the number of observations. The stocks and indices prices are retrieved from Datastream. The symbols *, ** and *** denote statistical significance at the 10, 5 and 1% levels respectively.

Table 4-16 reports the CAARs using the second methodology, following Barber and Lyon (1997) during three different windows. Panel A presents the firms that move from the MM to the AIM and panel B the firms that move from the AIM to the MM. The abnormal stock returns hold significant at the 1% level on all three windows on both events. More specifically, the CAARs on the 60 day window prior to the announcement of the moves are -8.3% and 11.2% for the firms that switch from the MM to the AIM and from the AIM to the MM respectively. The two remaining windows follow the same pattern. Once again, this test shows abnormal pre-announcement stock returns validating the previous results.

Table 4-16: Cumulative average abnormal stock returns, event firms against the matched firms

CAAR	(1)	(2)
Event windows	MM to AIM	AIM to MM
(-60, -1)	-0.083*** (0.000)	0.112*** (0.000)
(-30, -1)	-0.041*** (0.000)	0.067*** (0.000)
(-1, 1)	-0.018*** (0.000)	0.014*** (0.000)
<i>N</i>	279	104

This table shows the cumulative average abnormal stock returns of the sample firms against the matched firms on three different windows. The cumulative average abnormal stock returns are computed using a benchmark performance following Barber and Lyon (1997). Column 1 shows the firms that move from the MM to the AIM and panel B shows the firms that switch from the AIM to the MM. The stocks prices are retrieved from Datastream. P-values are reported in the parentheses. The numbers in italic represent the number of observations. The symbol *** denotes statistical significance at the 1% level.

4.5.6 Robustness tests

In this section I perform a battery of robustness checks. First, I calculate the returns using the Buy and Hold Abnormal Returns (BHAR) method as in Barber and Lyon (1997). The BHAR are calculated as follows:

$$BHAR_{i,t} = \prod_{t=1}^N (1 + R_{i,t}) - \prod_{t=1}^N (1 + R_{M,t}) \quad (4.5)$$

Where $BHAR_{i,t}$ are the daily Buy and Hold Abnormal Returns of security i , on day t , $R_{i,t}$ is the logarithmic return of security i , on day t and $R_{M,t}$ is the daily return of the market, on day t . I use the same benchmarks as in the CAARs specification (see section 4.4.1). The event window is (-60, -1) days and the estimation window is (-250, -81) days.

Second, I calculate the abnormal trading volume using the mean adjusted volume model following Chae (2005). The mean volume is calculated as follows:

$$AV_{i,t} = V_{i,t} - \bar{V}_{i,t} \quad (4.6)$$

Where $AV_{i,t}$ is the excess volume of a firm i on day t , $V_{i,t}$ is the volume of the firm i at day t divided by the number of the common shares outstanding $\bar{V}_{i,t}$ is the mean of a firm i over the estimation window (-250, -81). The event and estimation windows are the same as for the calculation of returns.

Finally, I re-estimate the CAARs of the entire sample using the rumour dates instead of the announcement dates for the firms that are discussed in the news prior to the official announcement of the events. For the calculation of the returns for this test I use an OLS market model as Brown and Warner (1985) using model (4.1) as discussed in section 4.4.1.

Table 4-17 shows the CAARs using an OLS market model (column 1) and the BHARs (column 2). Panel A reports the results for the firms that move from the MM to the AIM and panel B the results for the firms that switch from the AIM to the MM. The results are statistically significant and qualitatively similar using both methods confirming their robustness. For example, the 60 day abnormal stock returns for the firms that switch from the MM to the AIM are -3.8% using the OLS market model and -3.7% using the BHAR model. Similarly, the 60 day abnormal stock returns for the firms that switch from the AIM to the MM are 5.8% and 5.7% using the OLS market model and BHAR model respectively. Table 4-18 presents the CAAV using Bris (2005) model (column 1) and the mean adjusted volume method (column 2). Panel A shows the results for the switches from the MM to the AIM and panel B the results for the switches from the AIM to the MM. The results are statistically significant and relatively similar using both models. For instance, as reported in panel A, the 60 day abnormal trading volume for the firms that downgrade to the AIM is 3.4% when using the Bris (2005) model and 1.6% when using the mean adjusted model. Similarly, as shown in panel B, the firms that upgrade to the MM experience abnormal trading volume of 3.6% when using the Bris (2005) model and 5.8% when using the mean adjusted model.

Table 4-17: Cumulative average abnormal returns using the OLS market model and the Buy and Hold Abnormal Returns model

Panel A: Switches from the MM to the AIM		
Event windows	(1) OLS market model (CAAR)	(2) BHAR
(-60, -1)	-0.038*** (0.000)	-0.037*** (0.003)
(-30, -1)	-0.018*** (0.000)	-0.020*** (0.018)
(-1, 1)	-0.015*** (0.000)	-0.018*** (0.000)
<i>N</i>	287	287
Panel B: Switches from the AIM to the MM		
Event windows	(1) OLS market model (CAAR)	(2) BHAR
(-60, -1)	0.058*** (0.000)	0.057** (0.023)
(-30, -1)	0.036*** (0.000)	0.031** (0.046)
(-1, 1)	0.017*** (0.000)	0.019*** (0.000)
<i>N</i>	119	119

This table shows the cumulative average abnormal stock returns using an OLS market model following Brown and Warner (1985) and the buy and hold abnormal stock returns following Barber and Lyon (1997), on three different windows. Panel A presents the firms that move from the MM to the AIM and panel B shows the firms that move from the AIM to the MM. Column 1 reports the cumulative average abnormal stock returns and column 2 shows the buy and hold abnormal stock returns. P-values are reported in the parentheses. The numbers in italic represent the number of observations. The stocks and indices prices are retrieved from Datastream. The symbols **, *** denote statistical significance at the 5 and 1% levels respectively.

Table 4-18: Measurement of abnormal trading volume using the Bris (2005) and the mean adjusted models

Panel A: Switches from the MM to the AIM		
Event windows	(1) Bris model (CAAV)	(2) Mean volume (CAAV)
(-60, -1)	0.034*** (0.000)	0.016*** (0.000)
(-30, -1)	0.016*** (0.000)	0.009*** (0.000)
(-1, 1)	0.009*** (0.000)	0.015*** (0.003)
<i>N</i>	228	228
Panel B: Switches from the AIM to the MM		
Event Windows	(1) Bris model (CAAV)	(2) Mean volume (CAAV)
(-60, -1)	0.036*** (0.000)	0.058*** (0.000)
(-30, -1)	0.015*** (0.000)	0.032*** (0.000)
(-1, 1)	0.005*** (0.000)	0.013*** (0.000)
<i>N</i>	102	102

This table shows the trading volume using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005) and the mean abnormal trading volume method using the following mean adjusted model $AV_{i,t} = V_{i,t} - \bar{V}_{i,t}$ following Chae (2005), on three different windows. Panel A shows the firms that move from the MM to the AIM and panel B the firms that move from the AIM to the MM. Column 1 reports the volume following the Bris (2005) model and column 2 shows the mean adjusted volume model. P-values are reported in the parentheses. The numbers in italic represent the number of observations. The volume and number of shares are retrieved from Datastream. The symbol *** denotes statistical significance at the 1% level.

Table 4-19 reports the CAARs using the rumour dates as events dates for the firms that are rumoured about the switch one year prior to the public announcement. Panel A reports the results for the firms that move from the MM to the AIM and panel B the results for the firms that move from the AIM to the MM. Column 1 presents the CAARs using the actual event dates for all firms and column 2 the CAARs using the rumour dates. The abnormal stock returns are lower when I use the rumour dates for both events as expected. For instance, as shown in panel A, the firms that switch for the MM to the AIM experience abnormal stock returns of -3.8% when using the official announcement dates and -3.4% when using the rumour dates for the firms are discussed in the news prior to the official announcement. In a similar vein, as reported in panel B, the firms that upgrade to the MM experience abnormal stock returns of 5.8% when using the official announcement dates and 4.5% when using the rumours dates. In line with the literature, the results show that the rumours play indeed an important role on the pre-announcement abnormal stock returns (Jensen and Ruback, 1983; Jarrell and Poulsen, 1989b; Sanders and Zdanowicz, 1992), however the returns remain significant even after switching the public announcement dates with the rumours dates, highlighting that rumours cannot fully explain the patterns. Overall, the results remain robust even after employing a series of alternative specifications.

Table 4-19: Cumulative average abnormal returns using the rumour dates as announcement dates

Panel A: Switches from the MM to the AIM		
Event windows	(1) CAAR (event dates)	(2) CAAR (rumour dates)
(-60, -1)	-0.038*** (0.000)	-0.034*** (0.000)
(-30, -1)	-0.018*** (0.000)	-0.016*** (0.000)
(-1, 1)	-0.015*** (0.000)	-0.013*** (0.000)
<i>N</i>	287	287
Panel B: Switches from the AIM to the MM		
Event Windows	(1) CAAR (event dates)	(2) CAAR (rumour dates)
(-60, -1)	0.058*** (0.000)	0.045*** (0.000)
(-30, -1)	0.036*** (0.000)	0.031*** (0.000)
(-1, 1)	0.017*** (0.000)	0.017*** (0.000)
<i>N</i>	119	119

This table shows the cumulative average abnormal returns on three different event windows using different dates as event dates. The cumulative average abnormal returns are calculated using an OLS market model following Brown and Warner (1985). Panel A shows the firms that move from the MM to the AIM and panel B the firms that move from the AIM to the MM. Column 1 presents the cumulative average abnormal returns using the official announcement dates of the switches as the event date while column 2 shows the cumulative average abnormal returns using the rumour dates as the event date for the firms that are discussed in the media prior to the announcement of the moves. P-values are reported in the parentheses. The numbers in italic represent the number of observations. The stocks and indices prices are retrieved from Datastream. The symbol *** denotes statistical significance at the 1% level.

4.6 Conclusion

This chapter documents abnormal stock returns and abnormal trading volume 60 trading days prior to the announcement of the moves from a secondary, light regulated market to a main market and vice versa in the UK for the period of 1996-2015, events that have become increasingly popular during the last two decades. I examine 287 firms that switch from the MM to the AIM and 119 firms that move from the AIM to the MM. A move from the MM to the AIM is characterised as bad news triggering negative announcement stock returns, while a move from the AIM to the MM is considered to be good news triggering positive announcement stock returns (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014). These abnormal announcement stock returns generated by the switches could create incentives for insiders or other individuals to trade based on price sensitive information prior to public announcement of the events.

In line with previous findings on other major corporate events (e.g. Keown and Pinkerton, 1981; Jabbour et al., 2000, King, 2009; Siganos and Papa, 2015), I find abnormal reductions in the share prices that reach -3.8% and abnormal trading volume of 3.4% 60 trading days prior to the switches from the MM to the AIM. In addition, I find price run-ups of 5.8% and abnormal trading volume of 3.6% 60 trading days prior to the switches from the AIM to the MM. The results are robust after controlling for market anticipation based on rumours on the media and other major corporate announcements. More specifically, I find that rumours and other major corporate events can only explain part of these patterns, showing that the market anticipation hypothesis may be valid, but it cannot fully explain the patterns present in the markets. The results thus are in line with the information leakage hypothesis.

Furthermore, I find a negative contemporaneous relation between abnormal stock returns and abnormal trading volume for the firms that move from the MM to the AIM and a positive association between abnormal stock returns and abnormal trading volume for the firms that switch from the AIM to the MM during the 60 trading day window. These relations are not present in the control window, highlighting that the effect evidenced in the testing period is abnormal. After matching the switching firms with a group of control firms, I find that the firms that move to the MM outperform the matching firms while the firms that move to the AIM underperform the matching firms. Finally, the results are robust when using different methods for the calculation of abnormal stock returns and abnormal trading volume.

The findings suggest that insiders as well as other investors may trade on an information advantage prior to the official announcements of the switches between the AIM and the MM.

These results highlight the presence of information asymmetry in the markets which could lead to lower market participation from less informed or uninformed investors (Milgrom and Stokey, 1982; Wang, 1994). They also highlight the increased need for strict regulations as supported from the proponents of insider trading regulation (e.g. Schotland, 1967; Levmore, 1988; King et al., 1988; Klock, 1993).

This study contributes to the information leakage literature as it provides evidence of potential trading based on price sensitive information during the switches between the two UK markets, and more specifically between a light regulated market and a traditionally regulated market. The findings of this study could be of importance to the UK regulators and regulators of other countries that have established, or they are under discussions to establish similar secondary markets, as I point out to a new corporate event that lacks focus by both the academics and the regulators, yet it could create incentives for profit generation, through market abusive techniques. Finally, the findings of this study could be of importance to market participants as I highlight a corporate event that could trigger informed trading, thereby they can be proactive and avoid potential price manipulation.

5. Corporate insider trading prior to the announcement of the UK market switches

5.1 Introduction

The existence of abnormal stock price and trading volume patterns prior to the announcement of the market switches, increases our understanding over firms' transitions and confirms the hypothesis that these particular events are susceptible of market abusive techniques. Motivated by these findings, this chapter assesses whether insiders adjust their trading behaviours on their own personal accounts based on the privileged information over the switches between the two UK markets. Hence, this chapter provides the analysis for answering the second research question.

As reported in the literature a downgrade to the AIM is characterised as bad news and triggers negative abnormal stock returns while a move to the MM is considered to be good news, a market upgrade, and it triggers positive abnormal stock returns (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014). Since the listing process could take up to several months (London Stock Exchange, 2010; 2016), insiders are informed about the market switch and work towards it many months prior to the official announcement which usually happens one to two months prior to the move. Hence, the firm insiders could use this tempting opportunity in order to generate profit by increasing their net purchases (either by increasing their purchases or by decreasing their sales) prior to the switch to the MM or avoid losses by decreasing their net purchases (or increasing their net sales) prior to the announcement of the move to the AIM.

Thus, in this chapter I examine the insider trading levels in approximately 350 firms that switch from the AIM to the MM and vice versa during the period of 1999-2015⁴⁷, using both time series and control firms' benchmarks. I examine separately insiders' purchases, insiders' sales and insiders' net purchases while I also use a difference in difference (DiD) methodology which simultaneously takes into account both the times series and cross sectional controls following Agrawal and Nasser (2012) and Agrawal and Cooper (2015).

⁴⁷ The examination of this chapter starts from 1999 due to the fact that the DirectorsDeals data start from this date.

This chapter contributes to the insider trading literature by providing systematic evidence on the levels of corporate insider trading prior to market switches, shedding light on the abnormal trading activities on a corporate event that lacks focus by both academics and regulators. The findings of this study could be of importance to policy makers and regulators, as I introduce a new financial that could be susceptible to market abusive activities.

The rest of the chapter is structured as follows. Section 5.2 describes the literature review and hypotheses development. Section 5.3 describes the data collection and the summary statistics. Section 5.4 analyses the methodology used. Section 5.5 presents the results and empirical tests. Section 5.6 concludes.

5.2 Literature review and hypothesis development

The strong form of the efficient market hypothesis assumes that all available and relevant information is fully reflected in a stock's market price and that no individual traders can use their monopolistic access to information in order to earn higher profits compared to other investors (Fama, 1970). Early studies on insider trading have assessed whether markets are truly efficient and indicated that in general insiders outperform the market. For instance, Jaffe (1974) examining insider trades in 200 firms during the period of 1962-1968 in the US, finds that insider trades contain undisclosed information and that insiders are able to predict future stock returns and exploit them. The author also reports evidence of abnormal stock returns immediately after the insiders' trades which indicates that insiders use their information advantage, violating the regulations in place, in order to generate profit. In addition, Finnerty (1976) investigating a much greater sample of approximately 30,000 disclosed insider trades from the SEC's Official Summary of Stock Transactions for NYSE firms during the period of 1969-1972, reports that insiders' trades outperform the market and that insiders earn above the average returns when they purchase stocks of their own firm. The author further argues that when insiders sell their holdings in their own firm, the stock falls more than the average market decline, attributing this behaviour to the information advantage of insiders.

Similar results are reported by Seyhun (1986), who examines circa 60,000 insider trades from 1975 to 1981 in the US. More specifically, the author finds positive abnormal stock returns when buying and negative abnormal stock returns when selling in the months after the insiders' trades and that higher ranked insiders perform better than the lower ranked ones. Finally, taking into account the bid-ask spreads and the transaction costs, the author concludes that outsiders cannot generate profit by copying insiders' trades after their first

public announcement. A view which is also supported by Rozeff and Zaman (1988), who find significant abnormal stock returns after insiders' trades but when assuming a 2% transactions cost, the authors report that outsiders cannot generate profits by following those trades. Contrary to these results, Bettis et al. (1997) suggest that net of transaction costs, outsiders can generate profit by following large trades from top executives and imply that the markets are not efficient in their semi-strong form⁴⁸.

In more recent US studies, Lakonishok and Lee (2001) using a massive database that includes more than one million insider trades in the NYSE, the AMEX and the NASDAQ stock exchanges from 1975 to 1995, report 7.8% positive abnormal stock returns twelve months after the insiders' purchases; a result that decreases to 4.8% when controlling for size and book to market effects. In addition, the authors report that insiders' sales are not associated with low stock returns and that they are not generally informative due to fact that insiders could sell their stocks for liquidation reasons. Furthermore, the authors argue that the insider trading activities are more informative for smaller firms when compared to the large ones. In line, Jeng et al. (2003) following a portfolio based approach, report significant abnormal stock returns for insider purchases, yet insignificant for insider sales. More specifically, the authors create a purchase portfolio composed of all insider buys and a sell portfolio for all insider sales and they assume that the stocks are hold for six months. They report approximately 6% abnormal stock returns for purchases. Finally, they argue that outsiders have little to fear from the trades of insiders as they only account for 0.03% of the entire market which translates that on average outsiders lose \$0.10 for a \$10,000 inside transaction.

In Canada, Baesel and Stein (1979) confirm the previous findings by examining insider trades on 111 TSE listed firms from 1968 to 1972. The authors come in contrast with the strong form of the efficient market hypothesis by providing evidence that both ordinary insiders and bank directors⁴⁹ outperform the market, with the bank directors earning even larger premiums than those of the ordinary insiders. Another Canadian study from Fowler and Rorke (1988) which investigates a sample of 145 firms listed in the TSE during the period of 1967-1977, reports that not only insiders earn abnormal profits but also the outsiders who follow them, without however subtracting the transaction costs. A

⁴⁸ According to Fama (1970), the semi-strong efficient market hypothesis assumes that historical prices and all publicly available information is reflected in the stock's price.

⁴⁹ Baesel and Stein (1979) consider as ordinary insiders, the insiders who are required to disclose their trades under the Ontario Securities Act and as bank directors the insiders who are also directors of Canadian chartered banks.

counterexample of the previous findings in the US and Canada is the study from Eckbo and Smith (1998) who used over 18,000 insiders' trades in the Oslo Stock Exchange (OSE) during the period of 1985-1992. The authors find no evidence of abnormal stock returns after insider trades.

In an attempt to assess whether similar results hold within the UK context, King and Roell (1988) using data reported on the Financial Times during the period of 1987-1988, find significant positive abnormal stock returns of approximately 50% after insider purchases but insignificant abnormal stock returns for insider sales. In a similar vein, Pope et al. (1990) investigate directors transactions obtained from the Weekly Official Intelligence of the LSE during two different periods, from 1997 to 1981 and from 1983 to 1984. In contrast to the previous UK results, they confirm sharp abnormal stock returns after the insider transactions for sales but not for purchases. Further work in the UK, by Gregory et al. (1994) and Gregory et al. (1997) provide evidence of significant abnormal stock returns after director's trades for both purchases and sales. However, after controlling for size effects they report significant abnormal stock returns only for purchases (which are effectively reduced) but not for sales.

More recent UK studies report similar evidence with the previous literature. For instance, Friederich et al. (2002) examining firms listed in the LSE from 1986 to 1994, report that insiders have the ability to predict short run future stock returns. More specifically, the authors find significantly negative stock returns 20 days prior to insider purchases which become significantly positive following the purchase and exactly the opposite pattern for insider sales. However, the authors conclude that the economic significance of those returns should not be of major concern for the regulators. In line with the latter study, Fidrmuc et al. (2006) covering 35,439 transactions during the period of 1991-1998, confirm the significantly negative (positive) stock returns prior to director's buys (sells) which change sign after the purchase (sale). The stock returns, however, are higher than those of the US studies, which is justified by the higher information content the UK trades contain. Finally, the authors support that the market takes into account both the director's ownership and the firm's ownership structure when reacting to insider's transactions.

Taking the insider trading literature one step further, Kallunki et al. (2018) investigate whether personal traits of insiders' play a role in their willingness to trade on private information. More specifically, the authors analyse whether insider's wealth is associated with inside trading. They use a Swedish dataset due to the availability of insiders' income,

wealth, and other demographic variables which consists of 14,672 insider trades in 393 Swedish firms from 2000 to 2008. The authors report that less wealthy insiders are more prone to increase their sales prior to stock declines compared to their wealthy counterparts. However, when examining insider purchases the authors report that regardless of insider's wealth, insiders tend to increase their purchases prior to stock increases. The authors claim that this is due to the lower costs and risk associated with purchases.

Several studies have also examined whether insiders trade abnormally prior to major corporate announcements, in order to benefit from the announcement returns while others conclude that insider trading could act as a joint signal along with other corporate signals (John and Mishra, 1990). For example, John and Larry (1991) examining dividend changes and dividend initiations, on a sample of 265 firms from 1975 to 1985 in the US, report intense insider buying prior to significantly positive dividend announcement stock returns of 2.2% and intense selling prior to non-significant negative dividend announcement stock returns of -0.5%, indicating that insiders use their information advantage prior to corporate announcements. On new issue announcements, Karpoff and Lee (1991) using a sample of 179 new security issues during the period of 1975-1982, find increases in net selling 12 months prior to the announcement of common stock and convertible debt issues which are known to trigger negative abnormal stock returns. However, the authors do not find any signs of increased selling prior to straight debt issues. They conclude, that market penalties do not deter insider trading, at least partly, prior to new issue announcements. Similar results are reported by Kahle (2000), who finds increases in insider selling and decreases in insider buying 6 months prior to new issue announcements. The author also reports a significant negative relationship between abnormal insider trading and the long term performance of the firms that issue new equity.

Harlow and Howe (1993) introduce a different form of insider trading, the passive insider trading, in which instead of aggressively buying shares prior to an announcement of a positive event, insiders reduce their sales and keep their purchases steady, hence increasing their net purchases. More specifically, the authors examine 303 LBOs from 1980 to 1989 and report abnormal net purchases, due to decreases of sales, 12 months prior to MBOs but not prior to third party LBOs. In line with the previous study, Agrawal and Nasser (2012) show evidence of passive insider trading prior to takeovers. The authors examine a sample of 3,701 target firms in completed takeovers, which is considered to be a positive announcement, during the period of 1988-2006 in the US and report that insiders instead of increasing their purchases, they decrease them; however, they reduce their sales even more

which results to increasing the total net purchases. They conclude that profiting through passive insider trading highlights the limits of insider trading regulations as regulators can easily follow purchases, but they cannot act against decreases in sales.

On negative events, Seyhun and Bradley (1997) examine insider trading activity prior to the filing date of bankruptcy petition in the US for the years of 1975-1992. Contrary to previous studies on bankruptcy, that find no evidence of abnormal insider activity prior to the filing date (Loderer and Sheehan, 1989; Gosnell et al., 1992), they report that insider selling starts five years prior to filing date and gradually increases as it gets closer to the event date. The authors also report that the top executives and officers sell more aggressively compared to other corporate insiders. Finally, they highlight the importance of examining insider trading prior to major corporate events as it raises concerns as to whether insiders are really interested in maximising shareholders wealth. Similar results are reported by Agrawal and Cooper (2015), who analyse over 500 US public firms that made an announcement of earnings decreasing restatements in order to correct false financial statements⁵⁰ during the period of 1997-2002. When taking into account the entire sample, the authors find only weak evidence of insider selling in the misstated period. However, when they examine sub-samples of insiders that had greater incentive to engage in selling prior to the revelation of false statements, they find strong evidence that insiders aggressively sell their stocks during the misstated period.

Prior literature has well documented that insiders possess price sensitive information and use it for their own benefit. It is evident that insiders can predict future returns as well as that they increase their sales prior to negative corporate announcements and their purchases prior to positive corporate events. A corporate event that has become popular during the last twenty years but lacks focus from the insider trading literature is the market switches from a secondary market to a primary market and more specifically the switches from the AIM to the MM and vice versa. Recent literature reports that when firms move to a more renowned market with better analyst coverage, more investors and higher prestige, namely a market upgrade (a move from the AIM to the MM), is considered to be good news for the market and triggers positive announcement stock returns, while a market downgrade to a secondary market (a move from the MM to the AIM) is considered to be bad news, triggering negative announcement stock returns (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014).

⁵⁰ Misstatements as well as other accounting scandals are deemed as negative news as they are followed by large stock price declines.

Directors can take advantage of those abnormal announcement stock returns triggered by the market switches by trading prior to their public announcement and generate profit or avoid potential losses. For instance, insiders could increase their purchases and decrease their sales prior to the announcement of the switch from the AIM to the MM or the opposite, for a move from the MM to the AIM. Hence, my hypotheses are as follows:

Hypothesis 5.1: Firms that switch from the MM to the AIM experience decreases in net purchases prior to the official announcement of the move.

Hypothesis 5.2: Firms that switch from the AIM to the MM experience increases in net purchases prior to the official announcement of the switch.

5.3 Data and descriptive statistics

The initial sample of the firms that switch from the MM to the AIM and vice versa are retrieved from the “*New issues and IPO summary*” spreadsheet, which is offered by the LSE website⁵¹. Since the spreadsheet does not report any identifier codes, they have been hand collected from Investegate and Nexis databases. For the hand collection of the announcement dates I use the Investegate, Nexis and Perfect Information databases. The stock prices, stock volume and indices prices (FTSE All Share and FTSE AIM All Share) are downloaded from Datastream. The accounting data are retrieved from Worldscope and are also complemented by hand collecting, where possible, the missing market capitalization (size) and M/B values from the annual reports using the Perfect Information database. The disclosed trades are retrieved from DirectorDeals database and are matched with the hand collected data by using the ISIN code.

The initial sample consists of 291 firms that move from the MM to the AIM and 191 firms that move from the AIM to the MM during the period of 1999-2015. I use 1999 as the starting year as this is the year that DirectorsDeals data start. From the initial sample I exclude one firm from both the MM-AIM and AIM-MM datasets due to missing identifiers. I also exclude one firm from the MM to AIM dataset due to missing announcement date. In addition, I exclude the firms that are not available in DirectorDeals database which are thirty five and twenty two for the MM-AIM dataset and AIM-MM dataset respectively. I focus on the trades from executives, non-executives and PDMRs. Finally, it is important to note that

⁵¹ <https://www.londonstockexchange.com/statistics/new-issues-further-issues/new-issues-further-issues.htm> (last accessed October 2018).

I focus on open market stock trades excluding transactions from former directors⁵² and trades that are made due to option exercise, transferred or given away and awards made to directors⁵³, following Gregory et al. (1997), Korczak et al. (2010) and Gębka et al. (2017). Table 5-1 provides a breakdown of the sample selection process.

Table 5-1: Sample selection process

Description	MM to AIM	AIM to MM
Initial Sample	291	121
(-) Missing Identifiers	1	1
(-) Missing Announcement dates	1	0
Clear Sample	289	120
(-) Firms with no Director's Deals data	35	22
Final Sample	254	98

This table shows the sample selection process for both the MM to AIM and the AIM to MM datasets. The initial sample is retrieved from the “*New issues and IPO summary*” spreadsheet provided by the LSE website. The identifiers and announcement dates are hand collected from InvestEgate, Nexis and Perfect Information databases. The disclosed trades of corporate insiders are retrieved from DirectorsDeals database.

Table 5-2 reports the industry distribution for the firms that switch between the two UK markets during the period under examination using the ICB industry classification available on Datastream. Panels A and B show the firms that switch from the MM to the AIM and from the AIM to the MM respectively. As shown in panel A, the majority of the firms are from groups of the financials, consumer services, consumer goods and technology which consist of approximately 60% of the MM to AIM sample. Similarly, as reported in panel B, the majority of the firms are from the groups of financials, consumers services, technology and basic materials which account for approximately 70% of the AIM to MM sample.

⁵² As explained in DerectorsDeals definitions, former directors are those that are no longer a board member and hence their transactions do not have to be reported under the listing rules. However, in specific cases they might be asked to report them.

⁵³ I exclude those deals due to the fact that option exercise deals are below the market price or even nil. In addition, the exercise of options is not based on the same information that directors use when trading in ordinary shares (Hillier and Marshall, 2002a; b). The transfer deals are those that the shares are transferred to a third party such as when children come of age while the given away shares are usually charitable donations.

Table 5-2: Industry classification

Panel A: Switches from the MM to the AIM			
	Frequency	%	Cum.%
Basic Materials	9	3.54	3.54
Consumer Goods	39	15.35	18.90
Consumer Services	37	14.57	33.46
Financials	34	13.39	46.85
Health Care	14	5.51	52.36
Industrials	79	31.10	83.46
Oil & Gas	3	1.18	84.65
Technology	37	14.57	99.21
Telecommunications	2	0.79	100
Total	254	100	
Panel B: Switches from the AIM to the MM			
	Frequency	%	Cum.%
Basic Materials	12	12.24	12.24
Consumer Goods	1	1.02	13.27
Consumer Services	11	11.22	24.49
Financials	33	33.67	58.16
Health Care	8	8.16	66.33
Industrials	9	9.18	75.51
Oil & Gas	8	8.16	83.67
Technology	14	14.29	97.96
Telecommunications	1	1.02	98.98
Utilities	1	1.02	100
Total	98	100	

This table reports the industry distribution among the firms that move between the two UK markets from 1999 to 2015. Panel A shows the firms that switch from the MM to the AIM and panel B the firms that move from the AIM to the MM. For the industry classification I use the ICB industry system available on Datastream.

Table 5-3 shows the summary statistics of the firms that switch markets during the period of 1999-2015. Panel A shows the firms that switch from the MM to the AIM, panel B the firms that switch from the AIM to the MM and panel C the difference between the two samples. The firms that upgrade to the MM tend to be significantly larger in size and to have higher growth compared to the firms that downgrade to the AIM. More specifically, the firms that move from the AIM to the MM have an average market capitalisation of 298m and a mean M/B of 3.34 while the firms that move from the MM to the AIM have an average market capitalisation of 28m and a mean M/B of 2.06. The differences are significant at the least at the 5% level. The average stock liquidity and R&D between the two samples is reported to be similar.

Table 5-3: Summary statistics

	Mean	Median	Minimum	Maximum	SD	N
Panel A: Switches from the MM to the AIM						
Size	28,661	13,013	988	552,147	58,686	226
M/B	2.066	1.060	-7.780	20.380	3.624	226
Stock Liquidity	0.003	0.002	0.000	0.089	0.008	226
R&D	0.051	0.000	0.000	0.031	0.009	226
Panel B: Switches from the AIM to the MM						
Size	298,659	117,930	3,245	4,368,805	606,970	85
M/B	3.342	1.870	-8.880	27.500	4.555	85
Stock Liquidity	0.004	0.002	0.000	0.102	0.011	85
R&D	0.061	0.000	0.000	1.361	0.229	85
Panel C: Differences between the two samples						
	Mean			Median		
Size	-269,998***	(0.000)		-104917***	(0.000)	
M/B	-1.276**	(0.030)		-0.810***	(0.000)	
Stock Liquidity	-0.001	(0.487)		0.000	(0.125)	
R&D	-0.010	(0.698)		0.000*	(0.057)	

This table reports the summary statistics of the firms that move between the two UK markets 1999 to 2015. Panel A presents the firms that move from the MM to the AIM, panel B shows the firms that move from the AIM to the MM and panel C depicts the differences between the two samples. Size is measured by the market capitalisation and it is scaled in thousands. M/B is the market to book ratio. Stock liquidity is the daily average of the trading volume to shares outstanding ratio over the control period. R&D is the ratio of R&D to total assets. The financial data are retrieved from Worldscope. Stock and volume data are retrieved from Datastream. The numbers in *italic* represent the number of observations. P-values are reported in the parentheses. The symbols *, ** and *** denote statistical significance at the 10, 5 and 1% levels respectively.

5.4 Methodology

For the comparison of the insider trading levels I use both cross sectional and time series controls following Agrawal and Nasser (2012). For the cross sectional control, I compare the trades of insiders between the sample and a set of control firms while for the time series control, I compare the trades of insiders in the treatment group using an event and a control period. The cross sectional method provides a control for market trends during a specific time period without taking into account the firm characteristics. The time series method controls for the firm characteristics over two different periods without taking into account the trend of the market or trading behaviours of insiders. Both methods provide important indications however they suffer from limitations. Consequently, I use a DiD approach which controls for firm's characteristics, market trends and time period. I examine insider purchases, sales and net purchases separately as they provide different insights. For instance, insiders can actively trade by buying shares prior to good news or passively trade by decreasing their sales. Similarly, an individual with knowledge about forthcoming negative news would be unlikely to buy more shares prior to the negative announcement, yet he/she can increase his/her sales (Pope et al., 1990). However, my main interest is in the net

purchases as they clearly indicate the final position of corporate insiders. Following Agrawal and Nasser (2012), the net purchases are calculated as follows:

$$Net\ Purchases_{i,t} = Purchases_{i,t} - Sales_{i,t} \quad (5.1)$$

Where $Net\ Purchases_{i,t}$ is the net number of insider purchases, $Purchases_{i,t}$ is the number of insider purchases and $Sales_{i,t}$ is the number of insider sales.

5.4.1 Cross sectional control sample

I match the firms that move from the MM to the AIM and vice versa with control firms that did not switch markets during the same period following Brophy et al. (2009). First, I download the yearly FTSE All Share and FTSE AIM All Share constituents lists from Datastream at the end of each calendar year. I also download the market capitalisation (size), M/B and ICB codes of all of the constituent firms. For the firms that move from the MM to the AIM, I use the FTSE All Share constituents while for the firms that move from the AIM to the MM, I use the FTSE AIM All Share constituents. Next, I match each event firm with a control firm that is in the same constituent list, it has the same ICB code and the smallest difference in the one year lagged market capitalisation (size) and M/B ratio. In the case of a missing constituents lists on Datastream, I use the next closest available list. In the case of missing size or M/B values, I match the firm with the next closest one. Overall, I match 87 out of the total 98 firms that move from the AIM to the MM and 242 out of the 254 firms that switch from the MM to the AIM. Finally, I match the control firms with the DirectorDeals database using their ISIN code.

5.4.2 Time series control sample

For the times series test, I compare the treatment and control firms during the event and control period. The event period for the firms that move from the MM to the AIM is six months prior to the public switch announcement and the control period is six months prior to the event period. The event period for the firms that move from the AIM to the MM is twelve months prior to the official move announcement and the control period twelve months before the event window. The reasoning behind the choice of different event windows is that the listing process in the MM takes approximately twelve months due to its stricter listing requirements while the listing process in the AIM takes approximately six months (London Stock Exchange, 2010); hence during these periods the firms' insiders are more likely to have information advantage about the forthcoming market switches.

For instance, the firms that undergo a listing in the MM are obliged to prepare a prospectus which must be approved by the UKLA while for a listing in the AIM the prospectus is not mandatory. The preparation of the prospectus alone could take up to several months. Another major and time consuming listing difference is the corporate governance requirements. The firms listing in the MM have to comply with the Combined Code, hence they require time to appoint appropriate board members. However, this is not the case for a downgrade to the AIM, in which case the proper board requirements are already established. In addition, the companies contemplating a listing in the MM will have to ensure that they have proper financial controls in place in order to ensure a flow of accurate and timely information as required by the LSE. In contrast, the firms that list from the MM to the AIM have all these controls in place. Finally, the firms that switch to the AIM can apply for a fast track admission which makes the listing process much shorter (London Stock Exchange, 2010; 2016).

I focus on insider trading prior to the announcement of the moves as insiders clearly have information advantage as they work towards the listing to the markets. I do not examine insider trades after the announcement of the switches due to the fact that after that date both insiders and outsiders possess the listing information and because insiders' action could be under the spotlight during that period.

5.4.3 Difference in Difference test

Since the previous tests (cross sectional and time series) have their own limitations, I use a DiD test in order to eliminate them. In order to perform the DiD method I use the difference between the change in the level of purchases/sales/net purchases of the treatment firm's insiders between the event and control periods and the change in the level of purchases/sales/net purchases of the control firms between the event and control period⁵⁴. Since with this method I achieve a dual control that takes into account both the cross sections and time series characteristics, the main interest is in the DiD test.

5.5 Empirical Results

In this section, I compare the insider purchases, sales and net purchases of the firms that switch markets relative to a control period and relative to a matched control firm sample. I also use a dual test (DiD) which controls for both time series and cross sectional differences

⁵⁴ In order to avoid confusion, the formula used is the following: (event firms event period trades/amounts/values - event firms control period trades/amounts/values) – (control firms event period trades/amounts/values - control firms control period trades/amounts/values).

and is the main interest test. The following Tables (5-4 to 5-9) report the insider purchases, sales and net purchases of the firms that switch markets and of their control matched firms, using three different measures. The first measure is the number of insider trades which shows the number of insider purchases, sales or net purchases. The second measure is the number of shares bought or sold in thousands and the third measure is the value of shares bought or sold in thousands. The tables present the p-values using a t-test for the difference of means and a Wilcoxon test for the difference of medians. Columns 1 and 2 report the results of the event firms during the event and control periods respectively. Similarly, columns 3 and 4 show the results of the control firms for the event and control periods. The time series test is presented in column 5 [(1)-(2)] and shows the change in the levels of purchases, sales or net purchases of the event firms between the event and control periods while column 6 presents the p-value of the differences. The cross sectional test is reported in column 9 [(1)-(3)], which presents the change in the levels of purchases, sales or net purchases between the event and control firms during the event period while column 10 shows the p-values of those differences. Finally, the DiD test is presented in column 11 [(1)-(2)]-[(3)-(4)] which shows the difference between the change in the level of purchases, sales or net purchases of the sample firm's insiders between the event and control periods and the change in the level of purchases, sales or net purchases of the control firms between the event and control periods. The p-values of these differences are reported in column 12.

Table 5-4 shows the insider purchases of the firms that switch from the MM to the AIM. As shown in the mean values of columns 5 and 6 [(1)-(2)], insiders reduce their purchases (with a reduction of approximately 52%) six months prior to the announcement of the move. This result is significant at the 5% level. When using the cross sectional test (columns 9 and 10, [(1)-(3)]), I find that insiders in the event firms, purchase circa 68% less shares of their own firm compared to the control firms while the value of the shares purchased is approximately 46% lower. The results are statistically significant at the 5% and 1% level respectively. However, the results do not hold for the mean values when using the dual control (DiD) as shown in columns 11 and 12 [(1)-(2)]-[(3)-(4)]. Nevertheless, the DiD changes are significant at the 5% level for the number of shares and value of shares measures when looking at the median values.

Table 5-5 reports the insider sales for the firms that downgrade to the AIM. Columns 5 and 6 [(1)-(2)] show that there is not significant increase in sales during the event period. However, when using the DiD method I find a significant appreciation in the mean amount of shares (92,310 shares) and mean value of shares (£63,060) sold from the insiders of the

firms that downgrade to AIM, indicating that the insiders sell a larger amount of stocks in order to avoid the negative announcement stock returns. These results are significant at the 10% level. The DiD results for the median values are also significant at the 10% level for all three measures. Table 5-6 presents the net purchases which is the main interest variable as it shows the final position of the insiders. As shown in columns 5 and 6 [(1)-(2)] insiders significantly reduce the average number (by 64%), amount (by 200%) and value (by 191%) of their net purchases six months prior to the official announcement of the move from the MM to the AIM. These results are significant at the least at the 10% level. The results on the difference of the means and medians remain significant for all variables when using the dual control test (DiD) as shown in columns 11 and 12 [(1)-(2)]-[(3)-(4)].

Table 5-7 presents the insider purchases of the firms that move from the AIM to the MM. As reported in all three tests, there is no significant increases, neither in mean nor in median values, in purchases one year prior to the announcement of the switches. Similar results are reported for the sales as shown in Table 5-8, even though insiders seem to decrease their average number of trades, amount of shares and value of shares, the difference is not statistically significant in all three tests. However, contrary to the previous results and as shown in columns 11 and 12 [(1)-(2)]-[(3)-(4)] of Table 5-9, I find a statistically significant increase in the average net purchases for both the insider trades (p-value of 0.044) and the value of shares traded (p-value of 0.060) when using the dual control (DiD) method, indicating that when taking into account both the time series and cross sectional tests, insiders tend to actively increase their purchases and decrease their sales one year prior to the announcement of positive news in order to benefit from the market switch announcement returns.

Overall, the results report that insiders refrain from buying additional shares as well as increase their sales, deviating from their normal net purchasing behaviour, six months prior to the announcement of the move from the MM to the AIM, an announcement that triggers negative stock returns, in line with the active insider trading hypothesis. In contrast, according to the results reported by the DiD test, insiders tend to increase their net purchases prior to the announcement of the move from the AIM to the MM, a switch which is considered as good news by the market and triggers positive announcement stock returns (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014). However, the results appear to be weaker for the firms that switch from the AIM to the MM, which could be attributed

to the lack of the insider list⁵⁵ by the AIM firms. The AIM firms do not have to produce this list, making it harder for the market and the regulators to recognise who is considered to be an insider in the AIM firms and who is required to disclose his/her trades. Thus, “unknown” insiders can trade freely on price sensitive information, without disclosing their trades, something which could also be reflected in the insiders disclosed data. As stated by Pope et al. (1990), the most successful trades that are based on price sensitive information are those from the insiders that do not report their existence to the regulators, and hence manage to avoid market detection. Finally, it is important to note that these results should be interpreted with caution as the firms that have non-zero trading for the MM to the AIM sample is 16% and for the AIM to the MM sample is 20%.

⁵⁵ As stated previously in Chapter 3, unlike the MM firms, AIM firms are not required to create an insider list or to notify the FCA and keep a detailed record for the delayed disclosures.

Table 5-4: Insider purchases of the firms that switch from the MM to the AIM

Switches from the MM to the AIM, Purchases												
	Event Firms		Control Firms		Difference	P-value	Difference	P-value	Difference	P-value	Diff in Diff	P-value
	Event Period	Control Period	Event Period	Control Period								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	(-180, -01)	(-360, -181)	(-180, -01)	(-360, -181)	(1)-(2)	(1)-(2)	(3)-(4)	(3)-(4)	(1)-(3)	(1)-(3)	[(1)-(2)]- [(3)-(4)]	[(1)-(2)]- [(3)-(4)]
Mean												
Insider trades (N)	0.13	0.27	0.40	0.42	-0.14**	(0.014)	-0.02	(0.805)	-0.27***	(0.000)	-0.12	(0.141)
Number of Shares (N)	19.74	40.98	36.35	51.48	-21.24	(0.163)	-15.13	(0.575)	-16.61	(0.228)	-6.11	(0.843)
Value of Shares (£)	3.92	13.00	20.87	19.64	-9.08	(0.135)	1.23	(0.887)	-16.95**	(0.013)	-10.31	(0.151)
Median												
Insider trades (N)	0.00	0.00	0.00	0.00	0.00*	(0.064)	0.00	(0.608)	0.00***	(0.002)	0.00	(0.120)
Number of Shares (N)	0.00	0.00	0.00	0.00	0.00*	(0.065)	0.00	(0.632)	0.00***	(0.005)	0.00**	(0.043)
Value of Shares (£)	0.00	0.00	0.00	0.00	0.00*	(0.061)	0.00	(0.617)	0.00***	(0.002)	0.00**	(0.040)

This table reports the insider purchases of the firms that move from the MM to the AIM and their control firms during the event and control periods. The control firms are listed in the MM and they are matched according to their constituents list year, industry classification, size and market to book ratio. The event period is 180 calendar days prior to the announcement date (-180, -01) and the control period is 180 calendar days prior to the event period (-360, -181). The table shows the p-values of a t-test for the difference of means and the p-values of Wilcoxon test for the difference of medians. Columns 1 and 2 show event firms during the event and control period respectively. Columns 3 and 4 present the control firms during the event and control period respectively. Column 5 [(1)-(2)] reports the time series test for the event firms which is the difference in insider purchases between the event and control periods. Column 6 reports the p-value of this difference. Column 7 and 8 [(3)-(4)] show the time series test for the control firms and their p-values. Column 9 [(1)-(3)] reports the cross sectional test which is the difference in insider purchases between the sample and control firms during the event period. Column 10 reports the p-value of this difference. Column 11 [(1)-(2)]-[(3)-(4)] reports the dual control (DiD) results which is the difference between the change in the level of purchases of the sample firm's insiders between the event and control periods and the change in the level of purchases of the control firms between the control and event periods. Column 12 shows the p-value of the DiD. The Number of Shares and the Value of Shares are in thousands. The insider trading data are retrieved from DirectorDeals database. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels, respectively.

Table 5-5: Insider sells of the firms that switch from the MM to the AIM

Switches from the MM to the AIM, Sells												
	Event Firms		Control Firms		Difference	P-value	Difference	P-value	Difference	P-value	Diff in Diff	P-value
	Event Period	Control Period	Event Period	Control Period								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) [(1)-(2)]- [(3)-(4)]	(12) [(1)-(2)]- [(3)-(4)]
	(-180, -01)	(-360, -181)	(-180, -01)	(-360, -181)	(1)-(2)	(1)-(2)	(3)-(4)	(3)-(4)	(1)-(3)	(1)-(3)		
Mean												
Insider trades (N)	0.04	0.02	0.13	0.19	0.02	(0.409)	-0.06	(0.374)	-0.09*	(0.072)	0.08	(0.276)
Number of Shares (N)	62.76	0.48	13.99	44.02	62.28	(0.168)	-30.03	(0.131)	48.77	(0.284)	92.31*	(0.062)
Value of Shares (£)	15.39	0.41	28.33	76.41	14.98	(0.239)	-48.08	(0.153)	-12.94	(0.449)	63.06*	(0.082)
Median												
Insider trades (N)	0.00	0.00	0.00	0.00	0.00	(0.430)	0.00	(0.290)	0.00	(0.223)	0.00*	(0.090)
Number of Shares (N)	0.00	0.00	0.00	0.00	0.00	(0.426)	0.00	(0.269)	0.00	(0.229)	0.00*	(0.087)
Value of Shares (£)	0.00	0.00	0.00	0.00	0.00	(0.419)	0.00	(0.278)	0.00	(0.217)	0.00*	(0.089)

This table reports the insider sales of the firms that move from the MM to the AIM and their control firms during the event and control periods. The control firms are listed in the MM and they are matched according to their constituents list year, industry classification, size and market to book ratio. The event period is 180 calendar days prior to the announcement date (-180, -01) and the control period is 180 calendar days prior to the event period (-360, -181). The table shows the p-values of a t-test for the difference of means and the p-values of Wilcoxon test for the difference of medians. Columns 1 and 2 show event firms during the event and control period respectively. Columns 3 and 4 present the control firms during the event and control period respectively. Column 5 [(1)-(2)] reports the time series test for the event firms which is the difference in insider sales between the event and control periods. Column 6 reports the p-value of this difference. Column 7 and 8 [(3)-(4)] show the time series test for the control firms and their p-values. Column 9 [(1)-(3)] reports the cross sectional test which is the difference in insider sales between the sample and control firms during the event period. Column 10 reports the p-value of this difference. Column 11 [(1)-(2)]-[(3)-(4)] reports the dual control (DiD) results which is the difference between the change in the level of sales of the sample firm's insiders between the event and control periods and the change in the level of sales of the control firms between the control and event periods. Column 12 shows the p-value of the DiD. The Number of Shares and the Value of Shares are in thousands. The insider trading data are retrieved from DirectorDeals database. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels, respectively.

Table 5-6: Insider net purchases of the firms that switch from the MM to the AIM

Switches from the MM to the AIM, Net Purchases												
Event Firms		Control Firms		Difference	P-value	Difference	P-value	Difference	P-value	Diff in Diff	P-value	
Event Period	Control Period	Event Period	Control Period									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
(-180, -01)	(-360, -181)	(-180, -01)	(-360, -181)	(1)-(2)	(1)-(2)	(3)-(4)	(3)-(4)	(1)-(3)	(1)-(3)	[(1)-(2)]- [(3)-(4)]	[(1)-(2)]- [(3)-(4)]	
Mean												
Insider trades (N)	0.09	0.25	0.27	0.23	-0.16***	(0.009)	0.04	(0.672)	-0.18**	(0.027)	-0.20*	(0.075)
Number of Shares (N)	-43.02	40.50	22.36	7.47	-83.52*	(0.081)	14.89	(0.656)	-65.38	(0.170)	-98.41*	(0.090)
Value of Shares (£)	-11.47	12.59	-7.46	-56.77	-24.06*	(0.088)	49.31	(0.148)	-4.01	(0.822)	-73.37**	(0.046)
Median												
Insider trades (N)	0.00	0.00	0.00	0.00	0.00**	(0.033)	0.00	(0.846)	0.00**	(0.023)	0.00**	(0.036)
Number of Shares (N)	0.00	0.00	0.00	0.00	0.00**	(0.020)	0.00	(0.314)	0.00**	(0.028)	0.00**	(0.014)
Value of Shares (£)	0.00	0.00	0.00	0.00	0.00**	(0.018)	0.00	(0.322)	0.00**	(0.013)	0.00**	(0.014)

This table reports the insider net purchases of the firms that move from the MM to the AIM and their control firms during the event and control periods. The control firms are listed in the MM and they are matched according to their constituents list year, industry classification, size and market to book ratio. The event period is 180 calendar days prior to the announcement date (-180, -01) and the control period is 180 calendar days prior to the event period (-360, -181). The table shows the p-values of a t-test for the difference of means and the p-values of Wilcoxon test for the difference of medians. Columns 1 and 2 show event firms during the event and control period respectively. Columns 3 and 4 present the control firms during the event and control period respectively. Column 5 [(1)-(2)] reports the time series test for the event firms which is the difference in insider net purchases between the event and control periods. Column 6 reports the p-value of this difference. Column 7 and 8 [(3)-(4)] show the time series test for the control firms and their p-values. Column 9 [(1)-(3)] reports the cross sectional test which is the difference in insider net purchases between the sample and control firms during the event period. Column 10 reports the p-value of this difference. Column 11 [(1)-(2)]-[(3)-(4)] reports the dual control (DiD) results which is the difference between the change in the level of net purchases of the sample firm's insiders between the event and control periods and the change in the level of net purchases of the control firms between the control and event periods. Column 12 shows the p-value of the DiD. The Number of Shares and the Value of Shares are in thousands. The insider trading data are retrieved from DirectorDeals database. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels, respectively.

Table 5-7: Insider purchases of the firms that switch from the AIM to the MM

Switches from the AIM to the MM, Purchases												
	Event Firms		Control Firms		Difference	P-value	Difference	P-value	Difference	P-value	Diff in Diff	P-value
	Event Period	Control Period	Event Period	Control Period								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) [(1)-(2)]- [(3)-(4)]	(12) [(1)-(2)]- [(3)-(4)]
	(-360, -01)	(-361, -720)	(-360, -01)	(-361, -720)	(1)-(2)	(1)-(2)	(3)-(4)	(3)-(4)	(1)-(3)	(1)-(3)		
Mean												
Insider trades (N)	0.73	0.65	0.33	0.49	0.08	(0.805)	-0.16	(0.323)	0.40	(0.114)	0.24	(0.151)
Number of Shares (N)	260.03	67.46	115.50	97.40	192.57	(0.352)	18.10	(0.830)	144.53	(0.508)	174.47	(0.432)
Value of Shares (£)	153.26	46.26	18.50	54.60	107.00	(0.269)	-36.10	(0.291)	134.76	(0.159)	143.10	(0.151)
Median												
Insider trades (N)	0.00	0.00	0.00	0.00	0.00	(0.570)	0.000	(0.248)	0.00	(0.206)	0.00	(0.257)
Number of Shares (N)	0.00	0.00	0.00	0.00	0.00	(0.622)	0.000	(0.242)	0.00	(0.209)	0.00	(0.179)
Value of Shares (£)	0.00	0.00	0.00	0.00	0.00	(0.585)	0.000	(0.233)	0.00	(0.160)	0.00*	(0.055)

This table reports the insider purchases of the firms that move from the AIM to the MM and their control firms during the event and control periods. The control firms are listed in the AIM and they are matched according to their constituents list year, industry classification, size and market to book ratio. The event period is 360 calendar days before the announcement date (-360, -01) and the control period is 360 calendar days prior to the event period (-720, -361). The table shows the p-values of t-test for the difference of means and the p-values of Wilcoxon test for the difference of medians. Columns 1 and 2 show event firms during the event and control period respectively. Columns 3 and 4 present the control firms during the event and control period respectively. Column 5 [(1)-(2)] reports the time series control for the sample firms which is the difference in insider purchases between the event and control periods. Column 6 reports the p-value of this differences. Column 7 and 8 [(3)-(4)] show the time series control for the control firms and their p-values. Column 9 [(1)-(3)] reports the cross sectional control which is the difference in insider purchases between the sample and control firms during the event period and column 10 reports the p-value of this differences. Column 11 [(1)-(2)]- [(3)-(4)] reports the dual control (DiD) results which is the difference between the change in the level of purchases of the sample firm's insiders between the event and control periods and the change in the level of purchases of the control firms between the control and event period. Column 12 shows the p-value of the DiD. The Number of Shares and Value of Shares are in thousands. The insider trading data are retrieved from DirectorDeals database. The symbol * denotes statistical significance at the 10% level.

Table 5-8: Insider sells of the firms that switch from the AIM to the MM

Switches from the AIM to the MM, Sells												
	Event Firms		Control Firms		Difference	P-value	Difference	P-value	Difference	P-value	Diff in Diff	P-value
	Event Period	Control Period	Event Period	Control Period								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) [(1)-(2)]- [(3)-(4)]	(12) [(1)-(2)]- [(3)-(4)]
	(-360, -01)	(-361, -720)	(-360, -01)	(-361, -720)	(1)-(2)	(1)-(2)	(3)-(4)	(3)-(4)	(1)-(3)	(1)-(3)		
Mean												
Insider trades (N)	0.14	0.18	0.27	0.18	-0.04	(0.765)	0.09	(0.404)	-0.13	(0.284)	-0.13	(0.120)
Number of Shares (N)	37.03	38.89	165.08	80.74	-1.86	(0.941)	84.34	(0.250)	-128.05*	(0.058)	-86.20	(0.176)
Value of Shares (£)	102.04	66.59	238.59	75.77	35.45	(0.538)	162.82	(0.189)	-136.55	(0.286)	-127.37	(0.214)
Median												
Insider trades (N)	0.00	0.00	0.00	0.00	0.00	(0.995)	0.00	(0.602)	0.00	(0.113)	0.00	(0.316)
Number of Shares (N)	0.00	0.00	0.00	0.00	0.00	(0.990)	0.00	(0.587)	0.00	(0.115)	0.00	(0.122)
Value of Shares (£)	0.00	0.00	0.00	0.00	0.00	(0.981)	0.00	(0.600)	0.00	(0.143)	0.00	(0.128)

This table reports the insider sales of the firms that move from the AIM to the MM and their control firms during the event and control periods. The control firms are listed in the AIM and they are matched according to their constituents list year, industry classification, size and market to book ratio. The event period is 360 calendar days before the announcement date (-360, -01) and the control period is 360 calendar days prior to the event period (-720, -361). The table shows the p-values of t-test for the difference of means and the p-values of Wilcoxon test for the difference of medians. Columns 1 and 2 show event firms during the event and control period respectively. Columns 3 and 4 present the control firms during the event and control period respectively. Column 5 [(1)-(2)] reports the time series control for the sample firms which is the difference in insider sales between the event and control periods. Column 6 reports the p-value of this differences. Column 7 and 8 [(3)-(4)] show the time series control for the control firms and their p-values. Column 9 [(1)-(3)] reports the cross sectional control which is the difference in insider sales between the sample and control firms during the event period and column 10 reports the p-value of this differences. Column 11 [(1)-(2)]-[(3)-(4)] reports the dual control (DiD) results which is the difference between the change in the level of sales of the sample firm's insiders between the event and control periods and the change in the level of sales of the control firms between the control and event period. Column 12 shows the p-value of the DiD. The Number of Shares and Value of Shares are in thousands. The insider trading data are retrieved from DirectorDeals database. The symbol * denotes statistical significance at the 10% level.

Table 5-9: Insider net purchases of the firms that switch from the AIM to the MM

Switches from the AIM to the MM, Net Purchases												
	Event Firms		Control Firms		Difference	P-value	Difference	P-value	Difference	P-value	Diff in Diff	P-value
	Event Period	Control Period	Event Period	Control Period								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) [(1)-(2)]- [(3)-(4)]	(12) [(1)-(2)]- [(3)-(4)]
	(-360, -01)	(-361, -720)	(-360, -01)	(-361, -720)	(1)-(2)	(1)-(2)	(3)-(4)	(3)-(4)	(1)-(3)	(1)-(3)		
Mean												
Insider trades (N)	0.59	0.47	0.06	0.31	0.12	(0.731)	-0.25	(0.180)	0.53*	(0.056)	0.37**	(0.044)
Number of Shares (N)	223.28	28.57	-49.58	16.65	194.71	(0.350)	-66.23	(0.536)	272.86	(0.230)	260.94	(0.271)
Value of Shares (£)	51.22	-20.33	-220.09	-21.17	71.55	(0.507)	-198.92	(0.122)	271.31*	(0.086)	270.47*	(0.060)
Median												
Insider trades (N)	0.00	0.00	0.00	0.00	0.00	(0.611)	0.00	(0.304)	0.00**	(0.049)	0.00	(0.116)
Number of Shares (N)	0.00	0.00	0.00	0.00	0.00	(0.544)	0.00	(0.248)	0.00**	(0.020)	0.00*	(0.069)
Value of Shares (£)	0.00	0.00	0.00	0.00	0.00	(0.455)	0.00	(0.245)	0.00**	(0.019)	0.00**	(0.044)

This table reports the insider net purchases of the firms that move from the AIM to the MM and their control firms during the event and control periods. The control firms are listed in the AIM and they are matched according to their constituents list year, industry classification, size and market to book ratio. The event period is 360 calendar days before the announcement date (-360, -01) and the control period is 360 calendar days prior to the event period (-720, -361). The table shows the p-values of t-test for the difference of means and the p-values of Wilcoxon test for the difference of medians. Columns 1 and 2 show event firms during the event and control period respectively. Columns 3 and 4 present the control firms during the event and control period respectively. Column 5 [(1)-(2)] reports the time series control for the sample firms which is the difference in insider net purchases between the event and control periods. Column 6 reports the p-value of this differences. Column 7 and 8 [(3)-(4)] show the time series control for the control firms and their p-values. Column 9 [(1)-(3)] reports the cross sectional control which is the difference in insider net purchases between the sample and control firms during the event period and column 10 reports the p-value of this differences. Column 11 [(1)-(2)]-[(3)-(4)] reports the dual control (DiD) results which is the difference between the change in the level of net purchases of the sample firm's insiders between the event and control periods and the change in the level of net purchases of the control firms between the control and event period. Column 12 shows the p-value of the DiD. The Number of Shares and Value of Shares are in thousands. The insider trading data are retrieved from DirectorDeals database. The symbols *, ** denote statistical significance at the 10 and 5% levels respectively.

5.5.1 Regression Analysis

In this section, I perform a regression analysis using several cross sectional regressions in order to control for other potential determinants that could drive the insider trading activity upwards or downwards. The regressions are the following:

$$IT_i = a + \beta_1 * Event\ period_i + \beta_2 * Size_{i,t-1} + \beta_3 * M/B_{i,t-1} + \beta_4 * Stock\ liquidity_i + \beta_5 * R\&D_{i,t-1} + \beta_6 * Volatility_i + \beta_7 * \Delta\sigma_i + \gamma * Year + \vartheta * Industry + \varepsilon_i \quad (5.2)$$

$$IT_i = a + \beta_1 * Event\ firm_i + \beta_2 * Size_{i,t-1} + \beta_3 * M/B_{i,t-1} + \beta_4 * Stock\ liquidity_i + \beta_5 * R\&D_{i,t-1} + \beta_6 * Volatility_i + \beta_7 * \Delta\sigma_i + \gamma * Year + \vartheta * Industry + \varepsilon_i \quad (5.3)$$

For the dependant variable (*IT*) both for the times series and cross sectional tests I use three different parametric measures, the number of trades, the amount of shares traded and the value of the shares traded. For the dual control test (DiD) the dependant variables are the previous three variables but instead of taking the actual values, I use the difference between the change in the levels between event and control periods in the sample firms and the change in the levels between event and control periods in the control firms⁵⁶. The first regression (5.2) corresponds to the time series control and includes only the treatment firms for the duration of the event and control periods. The second regression (5.3) refers to the cross sectional as well as the dual control tests. The dataset on this regression consists of the event and control firms during the event period. The main variable of interest in the first regression (5.2) is the *Event period* which is an indicator variable that takes the value of one if the trade occurred in the event period and zero if the trade occurred in the control period. It basically captures whether there is a significant difference between the event and control periods. In the second regression (5.3) the variable of interest is the *Event firm* which takes the value of one if the trade occurred by an event firm and zero if the trade occurred by a control firm. This variable examines whether there is a significant difference in insider trades between the event and control firms.

In addition, I include a set of independent control variables. I control for size calculated as the natural logarithm of the market capitalization one year prior to the announcement of the moves (*Size*), as it is evident from the literature that small firms experience more insider

⁵⁶ As stated earlier in section 5.4.3, the formula used is the following: (event firms event period trades/amounts/values - event firms control period trades/amounts/values) – (control firms event period trades/amounts/values - control firms control period trades/amounts/values).

purchases while large firms more insider sales (Seyhun, 1986). Furthermore, Jenter (2005) argues that insiders buy (sell) stocks when they are in low (high) valuation. Thus, I control for M/B which is the ratio of market to book value one year prior to the announcement of the moves.

Kyle (1985), Admati and Pfleiderer (1988) and Holmström and Tirole (1993) report that higher stock liquidity could prompt insiders to trade more as they can easily hide their trades as well as earn more from the increase of unfirmed insiders in the market. I control for stock liquidity measured by the daily average of the ratio trading volume to shares outstanding over the window (-250, -1, trading days) for the event period and (-500, -251, trading days) for the control period of the firms that switch from the AIM to the MM and (-125, -1, trading days) for the event period and (-250, -126, trading days) for the control period of the firms that switch from the MM to the AIM (*Stock liquidity*).

Aboody and Lev (2000) argue that high R&D could increase the information asymmetry between insiders and outsiders, thereby increasing the insider trading activity. I control for $R\&D$ as the ratio of R&D expenses over total assets one year prior to the announcement of the moves. Further, Meulbroek (2000) reports that insiders in riskier firms tend to sell their stocks more aggressively. Thus, I control for volatility which is the standard deviation of the stock returns over the estimation window (-250, -126, trading days) for the event period and (-500, -376 trading days) for the control period prior to the move to the MM. For the firms that move to the AIM I use the standard deviation of the stock returns over the estimation window (-125, -63, trading days) for the event period and (-250, -188, trading days) for the control period (*Volatility*).

Demsetz and Lehn (1985), Jin (2002) and Aggarwal and Samwick (1999; 2003) show that changes in equity risk lead to changes in managers' holdings that are expressed either through stock purchases or sales. Hence, I control for changes in equity risk measured as the changes in volatility ($\Delta\sigma$) which for the firms that move to the MM is estimated as σ (-125, -1, trading days) - σ (-250, -126, trading days) for the event period and σ (-375, -251, trading days) - σ (-500, -376, trading days) for the control period. Since I use different event windows for the firms that move to the AIM the estimation is also different. For the firms that move to the AIM the changes in volatility are calculated as σ (-62, -1, trading days) - σ (-125, -63, trading days) for the event period and σ (-187, -126, trading days) - σ (-250, -188, trading days) for the control period. Finally, I include industry and year fixed effects to control for common factors that affect firms in the same industry or year.

Following Agrawal and Nasser (2012), for the first measure of the dependent variable, the number of insider purchases and sells, I use a zero inflated negative binomial regression due to the fact that the data are consisted of count values (they take the value between zero and seven) and are inflated on value zero. For the net purchases I use OLS regressions since the variable can take both positive and negative values. For the second and third measures, the amount and value of shares traded, I use Tobit regressions due to the fact that the data are censored from below to zero (the data cannot be negative). Once again since the values in net purchases can be both positive and negative, I use OLS regressions for these variables.

Tables 5-10 to 5-15 report the results of the regressions analysis. Columns 1 to 3 depict the insider purchases using the three difference measures, the number of trades, the amount of shares bought and the value of the shares bought. Columns 4 to 6 show the insider sales and columns 7 to 9 the net purchases using the same three measures. Table 5-10 presents the time series control for the firms that move from the MM to the AIM. The results are similar after controlling for several variables; corporate insiders tend to decrease their purchases in all three measures and their sales in two of the three measures, six months prior to the announcement of the switch to the AIM as shown in the parameter coefficients of *Event period* in columns 1 to 6. This translates to decreases in the number of trades and amount of shares of net purchases as reported in columns 7 and 8. More specifically, the insiders seems to decrease their net purchases by an overage of 0.15 trades and 89,333 shares on the event period compared to the control period. These results are significant at the least at the 10% level.

The results are also similar when I compare the sample firms with the control firms as shown in Table 5-11. More specifically, the corporate insiders of the event firms appear to significantly decrease their purchases, in all three measures, as shown in the parameter coefficient of *Event firm* in columns 1 to 3 and to significantly increase their sales as shown in columns 4 to 6 compared to the corporate insiders of the control sample. However, when looking to the net purchases, the results report a significant decrease of an average of 0.34 trades only in the first measure (number of insider trades) as shown in column 7. This result is significant at the 1% level. Finally, using the DiD method as reported in Table 5-12, I find decreases in the number of purchases, significant at the 5% level, significant increases in the number of sales as well as decreases in the number of net purchases as shown in the parameter coefficient of *Event firm* in columns 1, 4 and 7 respectively. I also find significant decreases in the value of shares for the net purchases as reported in column 9. This result is significant at the 10% level. Overall, the results show signs of abnormal trading activity six

months prior to the switches from the MM to the AIM, after controlling for several factors that could trigger abnormal insider trading activities in line with the hypothesis (5.1). However, in line with the literature (e.g. Friederich et al., 2002; Jeng et al., 2003) the economic significance of the results should not be of great concern to the regulators as the value of the average decrease in net purchases is £122,390.

Table 5-13 reports the times series test from the firms that switch from the AIM to the MM. The table shows no abnormal activity between the event and control periods for the stock purchases and net purchases, however there is a significant decrease in the amount (on average 289,333 shares) and value of shares (on average £394,000) sold one year prior to the announcement of the moves as shown in the parameter coefficient of *Event firm* in columns 5 and 6. These results are significant at the 1 and 10% levels respectively. When using the cross sectional control as shown in Table 5-14, I find a positive and statistically significant difference between the event and control firms in amount and value of shares bought as shown in columns 2 and 3 respectively. These results are significant at the 1% level. In addition, I find a significant differences in insider sales, amount and value of shares sold between the event and control firms as shown in columns 4 to 6. Finally, I find a positive and significant difference between the event and control firms in the insider trades of net purchases as reported in column 7. This result is significant at the 10% level. With regards to the DiD method, I find average reduces of 0.17 in the number of insider sales which are significant at the 10% level as shown in column 4 of Table 5-15. Most importantly, I find positive and significant increases in the number of trades and value of shares of net purchases, indicating that the insiders of the event firms tend to significantly decrease their sales and slightly increase their purchases prior to the announcement of the moves from the AIM to the MM in line with the hypothesis (5.2). Once again, the economic significance of these results should not raise major concerns to the regulators as the increase in the net value of shares traded is relatively low (e.g. £277,510).

Table 5-10: Regression on time series control (I)-(II) for the firms that move from the MM to the AIM

Switches from the MM to the AIM, Time series control (I)-(II)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Purchases			Sells			Net Purchases		
	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)
Event period	-0.64** (0.024)	-138.76*** (0.000)	-55.21*** (0.000)	0.29 (0.570)	789.76*** (0.002)	217.37*** (0.004)	-0.15** (0.022)	-89.33* (0.097)	-25.99 (0.114)
Size	0.13 (0.357)	53.29*** (0.000)	30.26*** (0.000)	0.52* (0.085)	533.20*** (0.000)	179.13*** (0.000)	0.01 (0.884)	-19.79 (0.621)	-7.46 (0.548)
M/B	-0.04 (0.416)	-0.99 (0.885)	-5.23*** (0.000)	-0.02 (0.806)	-76.62 (0.101)	-20.90 (0.140)	-0.01 (0.432)	5.62 (0.220)	-0.29 (0.669)
Stock liquidity	-18.15 (0.361)	198.88 (0.902)	-56.36 (0.931)	17.81 (0.153)	59367.12*** (0.000)	9154.15*** (0.000)	-6.71* (0.061)	-16601.59 (0.266)	-625.13 (0.670)
R&D	-0.47 (0.693)	-156.40 (0.151)	-57.18 (0.128)	-0.71 (0.435)	-1958.17*** (0.007)	-576.69*** (0.007)	-0.04 (0.722)	59.45 (0.273)	5.79 (0.499)
Volatility	0.997 (0.941)	-1867.36** (0.049)	-1077.75*** (0.006)	-65.45*** (0.004)	-109565.30*** (0.000)	-30702.16*** (0.000)	1.64 (0.503)	2803.62 (0.183)	190.39 (0.455)
$\Delta\sigma$	-0.22 (0.985)	-5980.00*** (0.000)	-829.62*** (0.000)	-37.14 (0.275)	-56744.27*** (0.000)	-16636.52*** (0.000)	0.83 (0.792)	207.46 (0.918)	255.64 (0.469)
Constant	-22.22*** (0.000)	-6504.89*** (0.000)	-2632.55*** (0.000)	-17.48*** (0.000)	-24174.89*** (0.000)	-7592.93*** (0.000)	-0.08 (0.823)	141.49 (0.718)	72.49 (0.539)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	444	444	444	444	444	444	444	444	444
R ² -adjusted							0.107	0.091	0.038
Pseudo R ²		0.042	0.045		0.102	0.103			

This table presents the estimates of the regressions of the time series test (I)-(II) on insider trades of the firms that switch from the MM to the AIM. Columns 1 to 3 report the estimates of insider purchases, columns 4 to 6 report the estimates of insider sales and columns 7 to 9 report the estimates of net purchases. *Event period* is an indicator variable that takes the value of one if the trade occurred during the event period (-180, -1) and zero if the trade occurred during the control period (-360, -181). *Size* is the natural logarithm of market capitalisation, *M/B* is the market to book ratio, *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the window (-125, -1, trading days) for the event period and the window (-250, -126, trading days) for the control period, *R&D* is the ratio of R&D to total assets, *Volatility* is the standard deviation of the stock returns over the window (-125, -63, trading days) for the event period and (-250, -188, trading days) for the control period and $\Delta\sigma$ is calculated as σ (-62, -1, trading days) – σ (-125, -63, trading days) for the event period and σ (-187, -126, trading days) – σ (-250, -188, trading days) for the control period relative to the announcement of the switch. Financial data are retrieved from Worldscope database and are from the fiscal year prior to the switch. The insider trading data are retrieved from DirectorDeals database. All financial data are winsorised at the 1 and 99%. The Number of Shares and Value of Shares are in thousands. The numbers in italic represent the number of observations. P-values are reported in the parentheses. The symbols *, **, *** denote statistical significance at the 10, 5 and 1% levels, respectively.

Table 5-11: Regression on cross sectional control (I)-(III) for the firms that move from the MM to the AIM

Switches from the MM to the AIM, Cross sectional control (I)-(III)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Purchases			Sells			Net Purchases		
	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)
Event firm	-1.32*** (0.000)	-200.61*** (0.000)	-92.39*** (0.000)	1.02** (0.040)	1726.38*** (0.000)	559.09*** (0.000)	-0.34*** (0.003)	-144.97 (0.349)	-32.89 (0.515)
Size	-0.15 (0.355)	-16.22*** (0.000)	6.24*** (0.000)	1.22*** (0.000)	1173.49*** (0.000)	467.74*** (0.000)	-0.10** (0.026)	-62.31 (0.352)	-16.53 (0.443)
M/B	0.03 (0.449)	10.54*** (0.000)	-1.06 (0.313)	0.03 (0.765)	17.08 (0.547)	18.15 (0.107)	0.00 (0.841)	4.43 (0.323)	-2.41 (0.113)
Stock liquidity	-13.78 (0.449)	-3346.56* (0.099)	-3190.97*** (0.000)	12.43 (0.212)	60010.60*** (0.000)	6941.91*** (0.000)	-5.84 (0.107)	-26203.03 (0.159)	-1672.13 (0.380)
R&D	-2.47 (0.171)	-373.39*** (0.000)	-206.99*** (0.000)	-4.77 (0.341)	-2900.57** (0.015)	-1298.29** (0.012)	0.16 (0.540)	62.66 (0.332)	35.39 (0.281)
Volatility	-32.87*** (0.005)	-6969.09*** (0.000)	-4264.88*** (0.000)	-72.77** (0.050)	-88190.63*** (0.000)	-36232.81*** (0.000)	-4.43* (0.068)	2725.85 (0.298)	30.05 (0.957)
$\Delta\sigma$	-36.32*** (0.004)	-8931.01*** (0.000)	-4539.00*** (0.000)	-75.67** (0.029)	-83984.22*** (0.000)	-35208.15*** (0.000)	-6.51** (0.029)	557.68 (0.622)	78.53 (0.865)
Constant	-13.89*** (0.000)	-2541.00*** (0.000)	-1155.93*** (0.000)	-20.39*** (0.000)	-27625.73*** (0.000)	-11549.92*** (0.000)	1.14** (0.030)	668.69 (0.363)	219.34 (0.353)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	452	452	452	452	452	452	452	452	452
R ² -adjusted							0.149	0.132	0.099
Pseudo R ²		0.045	0.068		0.136	0.148			

This table presents the estimates of the regressions of the cross sectional test (I)-(III) on insider trades of the firms that switched from the MM to the AIM. Columns 1 to 3 report the estimates of insider purchases, columns 4 to 6 report the estimates of insider sales and columns 7 to 9 report the estimates of net purchases. *Event firm* is an indicator variable that takes the value of one if the trade occurred from an event firm during the event period (-180, -1) and zero if the trade occurred from a control firm. *Size* is the natural logarithm of market capitalisation, *M/B* is the market to book ratio, *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the event window (-125, -1, trading days), *R&D* is the ratio of R&D to total assets, *Volatility* is the standard deviation of the stock returns over the window (-125, -63, trading days) and $\Delta\sigma$ is calculated as σ (-62, -1, trading days) – σ (-125, -63, trading days) relative to the announcement of the switch. Financial data are retrieved from Worldscope database and are from the fiscal year prior to the switch. The insider trading data are retrieved from DirectorDeals database. All financial data are winsorised at the 1 and 99%. The Number of Shares and Value of Shares are in thousands. The numbers in italic represent the number of observations. P-values are reported in the parentheses. The symbols *, **, *** denote statistical significance on the 10, 5 and 1% levels, respectively.

Table 5-12: Regression on the dual control [(I)-(II)]-[(III)-(IV)] for the firms that move from the MM to the AIM

Switches from the MM to the AIM, Difference in Difference [(I)-(II)]-[(III)-(IV)]									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Purchases			Sells			Net Purchases		
	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)
Event firm	-0.24** (0.049)	-51.49 (0.162)	-21.43 (0.121)	0.14* (0.076)	154.21 (0.326)	90.96 (0.158)	-0.37** (0.011)	-205.69 (0.199)	-112.39* (0.087)
Size	-0.04 (0.370)	-30.41** (0.021)	-6.89 (0.155)	0.02 (0.577)	48.68 (0.477)	10.21 (0.717)	-0.06 (0.310)	-78.55 (0.255)	-17.10 (0.547)
M/B	0.01 (0.210)	3.08 (0.358)	-0.11 (0.812)	0.00 (0.968)	-3.75 (0.360)	-5.48 (0.446)	0.01 (0.310)	6.84 (0.176)	5.37 (0.456)
Stock liquidity	1.33 (0.751)	-124.82 (0.932)	-375.77 (0.254)	0.32 (0.967)	27082.81 (0.143)	2159.51 (0.260)	1.029 (0.907)	-27179.12 (0.139)	-2535.29 (0.173)
R&D	-0.68* (0.063)	-82.92 (0.283)	-13.29 (0.176)	0.12 (0.712)	-28.89 (0.645)	70.89 (0.449)	-0.79* (0.060)	-52.58 (0.604)	-84.17 (0.359)
Volatility	-2.90 (0.324)	-853.02 (0.239)	-376.18** (0.048)	1.05 (0.638)	-1832.15 (0.483)	1345.65 (0.285)	-3.95 (0.278)	877.99 (0.743)	-1721.82 (0.174)
$\Delta\sigma$	-8.07* (0.082)	2750.84 (0.195)	556.78 (0.249)	2.88 (0.246)	121.74 (0.917)	587.66 (0.579)	-10.95** (0.036)	2530.33 (0.290)	-30.88 (0.979)
Constant	0.83 (0.104)	368.99** (0.018)	97.32* (0.086)	-0.16 (0.731)	-545.12 (0.468)	-141.02 (0.630)	0.99 (0.150)	903.18 (0.232)	238.34 (0.423)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	452	452	452	452	452	452	452	452	452
R ² -adjusted	0.129	0.126	0.056	0.036	0.102	0.060	0.092	0.115	0.066

This table presents the estimates of the regressions of the dual control test [(I)-(II)]-[(III)-(IV)] on insider trades of the firms that switch from the MM to the AIM. Columns 1 to 3 report the estimates of insider purchases, columns 4 to 6 report the estimates of insider sales and columns 7 to 9 report the estimates of net purchases. *Event firm* is an indicator variable that takes the value of one if the trade occurred from an event firm during the event period (-180, -1) and zero if the trade occurred from a control firm. *Size* is the natural logarithm of market capitalisation, *M/B* is the market to book ratio, *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the window (-125, -1, trading days) for the event period and over the window (-250, -126, trading days) for the control period, *R&D* is the ratio of R&D to total assets, *Volatility* is the standard deviation of the stock returns over the window (-125, -63, trading days) and $\Delta\sigma$ is calculated as σ (-62, -1, trading days) – σ (-125, -63, trading days) relative to the announcement of the switch. Financial data are retrieved from Worldscope database and are from the fiscal year prior to the switch. The insider trading data are retrieved from DirectorDeals database. All financial data are winsorised at the 1 and 99%. The Number of Shares and Value of Shares are in thousands. The numbers in italic represent the number of observations. P-values are reported in the parentheses. The symbols * and ** denote statistical significance at the 10 and 5% levels, respectively.

Table 5-13: Regression on time series control (I)-(II) for the firms that move from the AIM to the MM

Switches from the AIM to the MM, Time series control (I)-(II)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Purchases			Sells			Net Purchases		
	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)
Event period	0.24 (0.561)	526.94 (0.500)	312.58 (0.404)	-1.07 (0.180)	-289.33*** (0.000)	-393.99* (0.052)	0.26 (0.549)	181.28 (0.391)	81.41 (0.491)
Size	0.45*** (0.001)	-187.12 (0.554)	-83.36 (0.572)	0.00 (0.994)	480.09*** (0.000)	1439.24*** (0.000)	0.32** (0.025)	-106.09 (0.328)	-35.37 (0.534)
M/B	-0.32*** (0.000)	-434.45 (0.196)	-218.02 (0.158)	0.10 (0.309)	21.89** (0.021)	-73.82*** (0.010)	-0.02 (0.592)	-20.06 (0.273)	-3.71 (0.792)
Stock liquidity	- (0.003)	-196846.09** (0.023)	-94848.38* (0.017)	-1.31 (0.947)	-9374.01 (0.198)	-10313.12 (0.657)	-27.36*** (0.007)	-5294.19 (0.185)	-2440.92 (0.412)
R&D	-0.37 (0.643)	-1908.61 (0.445)	-1097.79 (0.357)	-1.48 (0.293)	-3910.77*** (0.000)	-9082.01*** (0.000)	-0.82 (0.210)	-394.62 (0.246)	-352.51 (0.129)
Volatility	-41.80* (0.091)	87699.04 (0.256)	35354.10 (0.320)	-87.94* (0.054)	37901.51*** (0.000)	128816.59*** (0.000)	-44.72* (0.088)	30670.28 (0.327)	10011.43 (0.496)
$\Delta\sigma$	-35.53*** (0.002)	12298.89 (0.775)	4696.59 (0.819)	17.15 (0.714)	58374.03*** (0.000)	179916.05*** (0.000)	0.37 (0.984)	13879.72 (0.303)	4690.19 (0.507)
Constant	-4.95*** (0.006)	-4652.80 (0.216)	-2151.28 (0.221)	0.24 (0.940)	-17474.45*** (0.000)	-47904.00*** (0.000)	-1.63 (0.278)	768.60 (0.377)	463.40 (0.397)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	156	156	156	156	156	156	156	156	156
R ² -adjusted							0.287	0.102	0.109
Pseudo R ²		0.043	0.049		0.222	0.190			

This table presents the estimates of the regressions of the time series test (I)-(II) on insider trades of the firms that switched from the AIM to the MM. Columns 1 to 3 report the estimates of insider purchases, columns 4 to 6 report the estimates of insider sales and columns 7 to 9 report the estimates of net purchases. *Event period* is an indicator variable that takes the value of one if the trade occurred during the event period (-360, -1) and zero if the trade occurred during the control period (-720, -361). *Size* is the natural logarithm of market capitalisation, *M/B* is the market to book ratio, *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the window (-250, -1, trading days) for the event period and over the window (-500, -251, trading days) for the control period, *R&D* is the ratio of R&D to total assets, *Volatility* is the standard deviation of the stock returns over the window (-250, -126, trading days) for the event period and (-500, -376, trading days) for the control period and $\Delta\sigma$ is calculated as σ (-125, -1, trading days) – σ (-250, -126, trading days) for the event period and σ (-375, -251, trading days) - σ (-500, -376, trading days) for the control period relative to the announcement of the switch. Financial data are retrieved from Worldscope database and are from the fiscal year prior to the switch. The insider trading data are retrieved from DirectorDeals database. All financial data are winsorised at the 1 and 99%. The Number of Shares and Value of Shares are in thousands. The numbers in italic represent the number of observations. P-values are reported in the parentheses. The symbols *, **, *** denote statistical significance on the 10, 5 and 1% levels, respectively.

Table 5-14: Regression on cross sectional control (I)-(III) for the firms that move from the AIM to the MM

Switches from the AIM to the MM, Cross sectional control (I)-(III)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Purchases			Sells			Net Purchases		
	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)
Event firm	0.46 (0.311)	1404.06*** (0.000)	808.43*** (0.000)	-1.65*** (0.001)	-1039.70*** (0.000)	-1680.39*** (0.000)	0.62* (0.055)	310.44 (0.273)	267.48 (0.122)
Size	0.58*** (0.002)	-457.44*** (0.000)	-161.11*** (0.000)	0.07 (0.879)	276.65*** (0.000)	776.95*** (0.000)	0.07 (0.578)	-178.28 (0.126)	-146.00* (0.071)
M/B	-0.12*** (0.007)	-21.39 (0.299)	-6.87 (0.478)	0.01 (0.924)	-11.30 (0.275)	-29.56 (0.203)	-0.01 (0.409)	-18.54 (0.205)	-3.03 (0.752)
Stock liquidity	115.28 (0.524)	-24417.52 (0.408)	-13563.74 (0.346)	608.89* (0.015)	13562.57* (0.075)	12834.64 (0.457)	-16.74* (0.076)	-1186.43 (0.848)	-989.13 (0.783)
R&D	-5.77*** (0.007)	-6364.88*** (0.000)	-3151.04*** (0.000)	-1.43 (0.510)	163.03 (0.630)	-651.68 (0.332)	-0.54 (0.413)	-276.08 (0.359)	369.99 (0.614)
Volatility	48.59* (0.062)	39211.72*** (0.000)	13657.75*** (0.004)	-115.33*** (0.004)	-30386.40*** (0.000)	-56637.20*** (0.000)	-11.44 (0.503)	22247.49 (0.273)	11717.94 (0.267)
Δσ	38.85 (0.135)	-13663.02*** (0.003)	-4074.77** (0.043)	-21.29 (0.658)	-54538.35*** (0.000)	-72812.37*** (0.000)	1.96 (0.897)	13543.22 (0.131)	11102.57* (0.069)
Constant	-10.97*** (0.000)	-1980.59*** (0.000)	-1418.34*** (0.000)	1.34 (0.803)	-21142.30*** (0.000)	-46909.79*** (0.000)	-0.15 (0.905)	1944.85 (0.105)	1727.56** (0.049)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	162	162	162	162	162	162	162	162	162
R ² -adjusted							0.172	0.158	0.172
Pseudo R ²		0.040	0.040		0.134	0.108			

This table presents the estimates of the regressions of the cross sectional test (I)-(III) on insider trades of the firms that switched from the AIM to the MM. Columns 1 to 3 report the estimates of insider purchases, columns 4 to 6 report the estimates of insider sales and columns 7 to 9 report the estimates of net purchases. *Event firm* is an indicator variable that takes the value of one if the trade occurred from an event firm during the event period (-360, -1) and zero if the trade occurred from a control firm. *Size* is the natural logarithm of market capitalisation, *M/B* is the market to book ratio, *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the event window (-250, -1, trading days), *R&D* is the ratio of R&D to total assets, *Volatility* is the standard deviation of the stock returns over the window (-250, -126, trading days) and $\Delta\sigma$ is calculated as σ (-125, -1, trading days) – σ (-250, -126, trading days) relative to the announcement of the switch. Financial data are retrieved from Worldscope database and are from the fiscal year prior to the switch. The insider trading data are retrieved from DirectorDeals database. All financial data are winsorised at the 1 and 99%. The Number of Shares and Value of Shares are in thousands. The numbers in italic represent the number of observations. P-values are reported in the parentheses. The symbols *, **, *** denote statistical significance on the 10, 5 and 1% levels, respectively.

Table 5-15: Regression on the dual control [(I)-(II)]-[(III)-(IV)] for the firms that move from the AIM to MM

Switches from the AIM to the MM, Difference in Difference [(I)-(II)]-[(III)-(IV)]									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Purchases			Sells			Net Purchases		
	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)	Insider trades (N)	Number of Shares (N)	Value of Shares (£)
Event firm	0.27 (0.161)	221.15 (0.436)	177.05 (0.172)	-0.17* (0.082)	-88.31 (0.199)	-100.46 (0.325)	0.44** (0.038)	309.46 (0.289)	277.51* (0.090)
Size	0.03 (0.699)	-133.28 (0.235)	-38.39 (0.422)	0.08 (0.197)	56.87 (0.167)	96.40* (0.057)	-0.05 (0.623)	-190.15 (0.117)	-134.79* (0.053)
M/B	0.01 (0.463)	-16.14 (0.267)	-5.54 (0.370)	0.01 (0.288)	2.89 (0.265)	-0.48 (0.936)	0.00 (0.852)	-19.03 (0.214)	-5.06 (0.550)
Stock liquidity	-4.08 (0.444)	2277.28 (0.735)	-182.04 (0.952)	-0.13 (0.954)	2554.74 (0.193)	1248.44 (0.554)	-3.95 (0.494)	-277.47 (0.966)	-1430.48 (0.675)
R&D	-0.25 (0.536)	-254.44 (0.410)	-193.91 (0.203)	0.2 (0.431)	25.35 (0.821)	-322.7 (0.569)	-0.45 (0.343)	-279.79 (0.394)	128.79 (0.818)
Volatility	1.26 (0.902)	21567.54 (0.288)	8079.14 (0.373)	-3.96 (0.333)	-4020.41* (0.076)	-2484.5 (0.461)	5.22 (0.636)	25587.95 (0.214)	10563.64 (0.270)
$\Delta\sigma$	11.78 (0.270)	5069.15 (0.533)	3763.32 (0.344)	1.58 (0.779)	-8683.11* (0.058)	-4870.16 (0.214)	10.19 (0.414)	13752.25 (0.141)	8633.48 (0.124)
Constant	0.00 (0.997)	1118.96 (0.321)	357.19 (0.453)	-0.56 (0.347)	-594.91 (0.226)	-1086.88* (0.076)	0.56 (0.559)	1713.88 (0.164)	1444.08* (0.069)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	162	162	162	162	162	162	162	162	162
R ² -adjusted	0.229	0.135	0.109	0.168	0.239	0.164	0.221	0.178	0.170

This table presents the estimates of the regressions of the dual control test [(I)-(II)]-[(III)-(IV)] on insider trades of the firms that switched from the MM to the AIM. Columns 1 to 3 report the estimates of insider purchases, columns 4 to 6 report the estimates of insider sales and columns 7 to 9 report the estimates of net purchases. *Event firm* is an indicator variable that takes the value of one if the trade occurred from an event firm during the event period (-180, -1) and zero if the trade occurred from a control firm. *Size* is the natural logarithm of market capitalisation, *M/B* is the market to book ratio, *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the window (-250, -1, trading days), *R&D* is the ratio of R&D to total assets, *Volatility* is the standard deviation of the stock returns over the window (-250, -126, trading days) and $\Delta\sigma$ is calculated as σ (-125, -1, trading days) – σ (-250, -126, trading days) relative to the announcement of the switch. Financial data are retrieved from Worldscope database and are from the fiscal year prior to the switch. The insider trading data are retrieved from DirectorDeals database. All financial data are winsorised at the 1 and 99%. The Number of Shares and Value of Shares are in thousands. The numbers in italic represent the number of observations. P-values are reported in the parentheses. The symbols * and ** denote statistical significance on the 10, 5% levels, respectively

5.6 Conclusion

This chapter provides evidence on the levels of disclosed insider trades prior to the announcements of the switches from the AIM to the MM and vice versa. Using three different measures of the levels of insider trading (amount of insider trades, amount of shares traded and value of shares traded), I investigate the insider trading activity on 352 firms that switch between the two UK markets during the period of 1999-2015. I separately examine the stock purchases, sales and net purchases using both a control period and a control sample. In order to eliminate the limitations of time series and cross sectional tests I use a difference in difference test that takes into account both of the aforementioned tests. In addition, I perform a regression analysis using cross sectional regressions in order to control for other potential determinants that might trigger insider trading activities.

The results are consistent with previous work in other major corporate events (e.g. Karpoff and Lee, 1991; Agrawal and Nasser, 2012; Agrawal and Cooper, 2015). I find abnormal insider trading activities six months prior to the announcement of the switches from the MM to the AIM, an event which is characterised as negative news for the market and triggers negative announcement stock returns. More specifically, corporate insiders increase their sales and decrease their purchases which results in significant decreases in net purchases, in line with the active insider trading hypothesis. For the firms that move from the AIM to the MM, a move that is characterised as a market upgrade and is considered to be good news for the market, I find insignificant increases in purchases and significant decreases in the amount and value of sales which translates to significant increases in some of the measures of net purchases. These results, however, appear to be weaker for the moves from the AIM to the MM compared to the firms that downgrade to the AIM. This could be attributed to the lack of insider list in the AIM, a list which records all individuals who are considered to be insiders in the firm. Thus, individuals who have access to private information might be omitted from the mandatory disclosure of their trades, a situation which could be potentially be reflected in the data.

The results suggest that corporate insiders use their information advantage several months prior to the UK market switches even though the FCA prohibits trading when in possession of price sensitive information. Hence, the results highlight the increased need for strict enforcement of regulations in place and support the view that in order to reduce any prohibited activities, there should be a combination of both severity of punishment and high probability of detection (Becker, 1968; Frijns et al., 2013). Finally, the evidence of this study could be of interest to policy makers and market regulators of countries that have already

established light regulated markets or are in discussions of establishing a secondary market, as I introduce a new corporate event to the insider trading literature that lacks focus by both academics and regulators.

6.Nominated Advisers (Nomads) reputation and the levels of abnormal reactions prior to the UK market switches

6.1 Introduction

The role of advisers is vital for public firms as they provide advice and guidance not only during their IPO but also during their entire life in the markets. The choice of the correct advisers is of major importance as they work in collaboration with the firms in order to eliminate any issues or challenges that might arise (London Stock Exchange, 2010; 2015b). Prestigious advisers, such as auditors and bankers provide better information with regards to the valuation of a firm to the market and further provide confidence to investors on assessing the firms' true value (Logue, 1973; Titman and Trueman, 1986). Furthermore, high reputable financial advisers are also known, at least theoretically, to decrease asymmetrical information between insiders and outsiders during IPOs by reducing the extent of underpricing and during new equity issues by reducing the negative price actions around them (Chemmanur and Fulghieri, 1994).

Based on the above literature and on the previous findings of this thesis, this chapter aims to assess whether the advisory and regulatory body of the AIM, the so-called Nomads, could assist in moderating the abnormal market reactions by providing better monitoring. Hence, this chapter aims to answer the third research question. It focuses on the information leakages rather than the insider trades as Nomads are responsible to monitor abnormal trading activities in the share prices of their clients, but they are not responsible to monitor the corporate insiders' trades. Responsible for insider trading activities is the FCA. (London Stock Exchange, 2014a; 2015a; b). Apart from that, the setup of chapter five is not suitable for this examination as the control firms of the MM to the AIM dataset are listed in the MM, thus they are not required to hire Nomads.

The Nomads are the main advisors and regulators for the AIM firms. Their role is to advice, guide and regulate the AIM firms while ensuring that the firms fully understand their obligations as dictated by the "*AIM rules for companies*". The Nomads must also monitor any trading activities in securities of the AIM firms they supervise, particularly when there is unpublished price sensitive information in relation to these companies. In addition, they must inform the LSE to take the appropriate actions, in case a firm has breached the rules (a detailed analysis on the role of the Nomads is discussed in Chapter 3). In order not to

endanger the stability, integrity as well as the reputation of the AIM, the LSE examines several criteria to decide whether a firm is appropriate for the role of the Nomad⁵⁷, including the Nomads general reputation (London Stock Exchange, 2014a; 2015a). Hence, the Nomads reputation is of vital importance not only for advising the AIM firms and help them grow but also for reducing any illegal or market abusive behaviours, which could be a tempting opportunity for investors and insiders due to the light regulation of the AIM. In addition, the Nomads and advisors in general, are especially interested in building a strong reputation as they have to continuously sell their services either to the same company or to other client firms (Kale et al., 2003).

In this chapter, I investigate whether reputable Nomads could reduce the abnormal price actions prior to the announcements of the moves from the AIM to the MM and vice versa, as reported in Chapter 4 during the period of 1996-2015. In addition, I examine whether having a Nomad that also acts as a broker in the firm further reduces the abnormal stock prices due to higher control over the AIM firm or whether it increases the abnormal stock prices due to the conflict of interest between the interests of the AIM firm and their obligations towards the LSE. In order to perform this examination, I construct a yearly reputable Nomad ranking system using a composite variable that includes five different measures (the Nomads market share in terms of new issues in the year prior to the switch, the cumulative Nomads market shares in terms of new issues in the years prior to the switch, the Nomads market share in terms of proceeds a Nomad backed in the year before the firm market switch, the cumulative market share in terms of proceeds a Nomad backed in the years before the firm market switch and the Nomads age on the year prior to the switch) following Bushman et al. (2004) and Espenlaub et al. (2012)

This chapter contributes to the existing literature as it sheds light on the regulatory mechanism of the AIM which is an inspiring system for many other secondary markets such as the AIM Italia in Italy, the Euronext Growth (formerly known as Alternext) in Belgium, France and Portugal and the Freiverkehr in Germany among others (Vismara et al., 2012). The findings of this chapter could be of importance to the LSE and to the UK regulators as it provides evidence that high reputable Nomad firms constitute a key factor on moderating

⁵⁷ Under the “*AIM rules for nominated advisers*” a nominated adviser must be a firm, practice corporate finance for at least the last two years prior to the application, have at least three relevant transactions during that period and employ at least four qualified executives.

market abusive practices as well as raises concerns as to the whether the Nomad firms take the appropriate safeguards in order to reduce any conflicts of interest that might arise.

The rest of the chapter is organised as follows. Section 6.2 discusses the relevant literature. Section 6.3 reports the data. Section 6.4 presents the methodology and the descriptive statistics. Section 6.5 analyses the results. Finally, section 6.6 concludes the chapter.

6.2 Literature review and hypothesis development

The association between reputation and product quality was first framed by the seminal papers of Klein and Leffler (1981), Shapiro (1983) and Allen (1984). More specifically, Klein and Leffler (1981) argue that firms that sell low quality goods at high quality prices develop a negative reputation which harm their sales and lead them to the exclusion from the market. In their model, they show that the stream of profits by producing products of high quality is higher than periodical gains from producing products of low quality. Thus, firms will have an incentive to build a good reputation. In a similar vein, Shapiro (1983) argues that firms are considered to be reputable when their customers believe that they offer high quality products. In order for the customers to judge the quality of a certain product produced by a firm, they can either purchase the product or examine the past products produced by the firm as an indicator of future or present product quality. Hence, the reputation of the firm can be a signalling activity of the product quality produced in the present or in the future. Allen (1984) adds that even when the goods quality is unobservable, firms only sell high quality products at high quality prices. While the previous theories and models are related to products, they are also applicable for services and more specifically in the case of advisers and Nomads. The quality of the services provided by the Nomads or other advisers are difficult to observe before purchasing, however a good reputation indicates high quality services and more experienced advisers who advise (and regulate in the case of Nomads) better than their low reputation counterparts.

Prior literature has documented that indeed high reputable advisers provide better quality services. For example, Titman and Trueman (1986) construct a theoretical model and explain that prestigious and reputable advisers provide more information about the firms they guide in the market, which results in better firm valuation by investors and the markets in general. Chemmanur and Fulghieri (1994) also theoretically, argue that high reputable financial advisers reduce information asymmetry between insiders and outsiders during IPOs. The

authors suggest that the results could be extended to other corporate events such as corporate takeovers and new share issues.

On empirical evidence, Rau (2000) ranks 219 investment banks which acted as advisors in tender offers and 919 investments banks which acted as advisors in mergers and examines the determinants of reputation on those events. The ranking of the investments banks is based on the yearly market share. The author reports a significant and positive relation between the percentage of deals completed by the banks in the past and the investment banks market share. In addition, the author finds a positive relation between the successful deals completed and advisor reputation in tender offers but not in mergers. Furthermore, the author reports lower abnormal stock returns during the announcement of the mergers for the firm that are supervised by reputable advisors. However, he finds no relation between the market share of the investment banks and post-acquisition performance of the advised firms.

Kale et al. (2003) analysing 334 successful takeovers during the period of 1981-1994, report that reputable advisors, measured as the ratio of the bidder advisor reputation to target advisor reputation, increase the takeover wealth gains, a result which leads to better mergers and bargaining in general. In line, Hunter and Jagtiani (2003) examining 5337 public mergers during the period of 1995-2000, find that tier one advisors are more successful in completing the merger deals compared to the lower tier advisors. In their research the ranking of advisors is taking into account the total dollar value of transactions and the number of transactions backed by the advisors.

In a similar vein, Fang (2005) examines the quality of services of reputable advisors in over 3000 non-convertible bonds issuances from 1991 to 2000 measuring the reputation based on the advisors market share. The author reports that reputable advisors offer better quality services, namely higher issuer proceeds and lower bond yields, at higher prices, highlighting that price could be an indicator of quality services. In addition, Golubov et al. (2012) examining circa 4,800 acquisitions from 1996 to 2009, report that financial advisor's reputation is significantly correlated with higher bidder returns and advisor fees on public acquisitions, yet not in private and subsidiary acquisitions. The authors argue that the greater visibility of public acquisitions along with higher effort and skill demanded on those acquisitions are the reasons for these results.

Contrary to the prior literature, McLaughlin (1992) examining circa 400 tender offers for NYSE listed target firms from 1978 to 1986, find that bidders using non reputable advisers experience higher announcement gains compared to those using a reputable adviser, whereas

Servaes and Zenner (1996) analysing M&As during the period of 1981-1992, report no evidence between bidders wealth and reputable investment banks. The authors conclude that the only determinant of the choice between a reputable and non-reputable advisor is the transaction costs. However, Kale et al. (2003) states that one of the reasons that those studies find negative or no significant relationship between the bidder wealth benefits and the reputable advisors could be that they do not take into account the reputation of the opponent's advisor.

In line with the previous studies, Ismail (2010) investigating 6,379 M&A deals from 1985 to 2004 and using as a proxy for reputation the market share of the advisors, finds that non reputable investment banks overperform the reputable advisors. However, the author adds that the underperformance of high reputable advisors is due to 178 huge loss deals and if those deals were removed, the high reputable advisors would outperform the second tier advisors. In addition, the author claims that similar results can be reached by excluding the bear market period. Finally, Holland and Horton (1993) examining 230 IPOs in the London USM during the period of 1986-1989, find no relationship between sponsors quality and the level of IPO discount. However, they find a negative and significant relationship between auditor's quality and the level of IPO discount.

Prior literature has also examined whether the reputation and quality of Nomads play a role in increasing the survivability of the AIM firms and reducing the post IPO under-pricing reported in the market. More specifically, Espenlaub et al. (2012) analysing 896 AIM IPOs during the period of 1995-2004, report that reputable Nomads increase the survivability rates of the AIM firms by a median of 33 months, highlighting the importance of reputation in the choice of the decentralised regulators. In line, Gerakos et al. (2013) examine Nomads that provide effective oversight, judged by their supervised firms' pre-IPO stock returns and find that firms that are backed by higher quality Nomads experience reduced post listing underperformance compared to their counterparts. However, the authors report that the Nomads which also act as brokers in the same firm receive limited additional information about the supervised firms as they do not further reduce the post IPO under-pricing.

Prior studies have documented contradictory results as to whether reputable advisors benefit their clients in generating wealth. However, they highlighted that reputable advisors play a significant role as they can reduce information asymmetries between insiders and outsiders by providing more information to the markets. Moreover, prior literature documents that reputable Nomads could assist the firms in several aspects such as increasing

survivability rates or reducing post listing underperformance. Accordingly, reputable Nomads which act as both advisers and regulators in the AIM, could potentially reduce any market abusive techniques by providing better advisory and regulatory services. According to the 3rd rule of the “*AIM Rules for Nominated Advisers*” one of the Nomads’ responsibilities is to monitor the trading activities of the firms they supervise, especially during the existence of unpublished price sensitive information with regards to the AIM company. Hence, reputable Nomads could potentially mitigate the abnormal stock price reactions prior to the official announcements of the market switches from the AIM to the MM and vice versa as reported in Chapter 4. Thus, my hypothesis is the following:

Hypothesis 6.1: Reputable Nomads reduce the pre-announcement abnormal stock price caused by the announcement of the switches from the AIM to the MM and vice versa.

6.3 Data

The initial sample of the firms that switch from the MM to the AIM and vice versa as well as their Nomads are retrieved from the “*New issues and IPO summary*” spreadsheet, which is offered by the LSE website⁵⁸. However, the identifier codes of the firms are not reported in the spreadsheet, hence they have been hand collected from Investigate and Nexis databases. For the hand collection of the announcement dates of the switches I use the Investigate, Nexis and Perfect Information databases. I also hand collect the last Nomad used for the firms that switch from the AIM to the MM and any other missing Nomad data for the firms that switch from the MM to the AIM from the firms’ annual reports, using Perfect Information database⁵⁹. The date of incorporation of the Nomad firms are downloaded from Fame and Amadeus databases as well as the Companies House website⁶⁰. The broker companies for the firms that switch between the two markets are hand collected from the firms’ annual reports, using the Perfect Information database. The stock prices of the firms that switch between the two UK markets, indices prices (FTSE All Share and FTSE AIM All Share) and volume data are downloaded from Datastream. The accounting data are downloaded from Worldscope and they are also complemented by hand collecting, where

⁵⁸ <https://www.londonstockexchange.com/statistics/new-issues-further-issues/new-issues-further-issues.htm> (last accessed October 2018).

⁵⁹ The “*New issues and IPO summary*” spreadsheet offers the Nomads when firms enter the market (even though many are missing). However, there is no information for the firms that leave the market (firms that switch from the AIM to the MM), hence the corresponding data have been hand collected from the firms’ annual reports.

⁶⁰ Accessed from <https://beta.companieshouse.gov.uk/> (accessed on September 2018)

possible, the missing size and M/B values from the annual reports using the Perfect Information database.

The initial sample comprises 303 transitions from the MM to the AIM and 145 switches from the AIM to the MM during the period of 1996-2015. I exclude four firms due to the lack of identifiers, three firms due to missing announcement dates, and thirty-five firms due to missing or incomplete stock return data on Datastream. Finally, I exclude nine firms from the AIM to MM dataset due to missing Nomad firm data. The final sample consists of 287 firms that switch from the MM to the AIM and 110 from the AIM to the MM. Table 6-1 presents a breakdown of the selection process.

Table 6-1: Breakdown of the selection process

Description	(1) MM to AIM	(2) AIM to MM
Initial Sample	303	145
(-) Missing identifiers	3	1
(-) Missing announcement dates	1	2
Clear Sample	299	142
(-) Firms with no stock data/non available on Datastream	12	23
(-) Firm with no Nomad data	0	9
Final Sample	287	110

This table presents the breakdown of the sample selection process. The initial sample as well as the Nomad data are retrieved from the “*New issues and IPO summary*” spreadsheet provided by the LSE website. The missing Nomad data and the last Nomad of the firms that move from the AIM to the MM are hand collected through the firm’s annual reports which are downloaded from the Perfect Information database. The identifiers and announcement dates are hand collected from the InvestEgate, Nexis and Perfect Information databases. The stock data are retrieved from Datastream.

The initial sample of the Nomad dataset consists of 158 firms during the same period (1996-2015). However, the Nomads that have available all the necessary data for the reputation measurement (firms the Nomads backed, proceeds the Nomads backed and age of Nomads incorporation) are in total 140. Table 6-2 shows a breakdown of the Nomad selection process. The listings in the AIM that are used for the measurement of firms and proceeds backed by a Nomad are 3421.

Table 6-2: Breakdown of the Nomad firm's selection process

Description	Nomad firms
Initial Sample	158
(-) Missing firms backed	0
(-) Missing proceeds backed	0
(-) Missing age of incorporation	18
Final Sample	140

This table presents the breakdown of the Nomad firms selection process. The initial sample as well as the firms and proceeds backed by the Nomads are retrieved from the “*New issues and IPO summary*” spreadsheet provided by the LSE website. The age of incorporation data are retrieved from Fame and Amadeus databases and the Companies House website.

6.4 Methodology and descriptive statistics

6.4.1 Calculation of abnormal stock returns

The abnormal stock returns are measured using the same methodology as in Chapter 4. More specifically, I follow Brown and Warner (1985) and calculate the returns as follows:

$$AR_{i,t} = R_{i,t} - \alpha - \beta * R_{M,t} \quad (6.1)$$

Where $AR_{i,t}$ is the excess return of a security i at day t , $R_{i,t}$ is the logarithmic return of security i at day t and $R_{M,t}$ is the return of the market at the day t . Following Jabbour et al. (2000) and King (2009), the event window is 60 trading days prior to the public announcement. The estimation window is 250 to 81 days prior to the official announcement (-250, -81). A gap is left between the event and the estimation window in order to ensure that the latter is not contaminated by the former. The proxy for the market is the FTSE All Share index for the firms that switch from the MM to the AIM and the FTSE AIM All Share index for the firms that move from the AIM to the MM.

6.4.2 Nominated Adviser reputation estimation

In order to allocate the Nomads into different reputation scales, I use five different measures in line with Bushman et al. (2004) and Espenlaub et al. (2012). First, I use the Nomads' market share in terms of new issues in the year prior to the firm switch, calculated as the ratio of the firms a Nomad backed the year prior to the firm switch over the total amount of listings in the AIM during that particular year. Since this variable measures the reputation of a Nomad only during the year prior to the listing of the supervisee/client, I also compute the cumulative market share of the Nomad. Thus, the second measure takes into account the market share of the Nomad since its establishment and is calculated as the ratio of the firms that a Nomad backed during all previous years prior to the firm switch over the total number of listings in the AIM during that years. Third, I use the Nomads' market share in terms of

proceeds that a Nomad backed in the year prior to the firm market switch. This variable is calculated as the ratio of the proceeds a Nomad backed the year prior to the firms switch over the total proceeds in the AIM during that year. In addition, I compute a time variant variable which measures the cumulative proceeds market share estimated as the ratio of the proceeds a Nomad backed during all the previous years prior to the firm move, over the total proceeds of the new listing in the AIM during the same period. The reasoning behind market share is that if Nomads provide good quality of regulatory and advisory services to their supervisees their reputation is enhanced, thus increasing their services demand which leads to high market share (Ismail, 2010). In addition, proxying reputation based on market share is a well-established methodology in the literature (e.g. Megginson and Weiss, 1991; Rau, 2000; Kale et al., 2003; Fang, 2005). Finally, I capture the age of the Nomad. The age proxies for the firm's experience and is calculated as the amount of years between the year of incorporation and the year prior to the firm's switch (Espenlaub et al., 2012).

Having computed this five reputation measures, I estimate the decile values of the five different metrics and calculate a Nomad reputation composite variable as the yearly unweighted average decile of the five measures. Furthermore, I calculate the yearly decile of the Nomad reputation variable. I use a yearly measure as the Nomads might be popular during a specific period of time but not that popular during other periods. Nomads that are ranked in the top (bottom) five deciles are characterized as reputable (non-reputable). A full list of the initial Nomad firms used for the measurement of the composite variable is provided in Appendix 5.

Table 6-3 shows the firms listed in the AIM along with the percentage of those that used a reputable Nomad or a non reputable Nomad during the period of 1997-2015. As reported in the table, a high percentage of firms (74.16% on average) use a reputable Nomad during their listing in the AIM. The percentage ranges from a minimum of 48% in 2014 to a maximum of 88% in 2000. In addition, Table 6-4 presents the number of firms that switch between the two UK markets as well as the number of those that used a reputable Nomad or a non reputable Nomad. Similarly, the average percentage of the firms that used a reputable Nomad prior to their switch during the period under examination is 67.25% for the switches from the MM to the AIM and 56.36% for the switches from the AIM to the MM.

Table 6-3: Firms listed in the Alternative Investment Market using a reputable or a non reputable Nominated Adviser

Year	Firms listed in the AIM				Total firms listed
	With reputable Nomads	With reputable Nomads (%)	Without reputable Nomads	Without reputable Nomads (%)	
1997	41	60.50	39	39.50	80
1998	43	75.44	14	24.56	57
1999	78	84.78	14	15.22	92
2000	178	87.68	25	12.32	203
2001	124	75.61	40	24.39	164
2002	118	86.13	19	13.87	137
2003	123	76.88	37	23.13	160
2004	249	78.55	68	21.45	317
2005	374	79.57	96	20.43	470
2006	333	78.91	89	21.09	422
2007	181	69.88	78	30.12	259
2008	78	75.73	25	24.27	103
2009	22	73.33	8	26.67	30
2010	57	58.76	40	41.24	97
2011	47	63.51	27	36.49	74
2012	34	50.75	33	49.25	67
2013	34	48.57	36	51.43	70
2014	48	48.00	52	52.00	100
2015	25	53.19	22	46.81	47
Total	2187	74.16	762	25.84	2949

This table presents the breakdown of the firms listed in the AIM either by using a reputable or a non reputable Nomad each year from 1997 to 2015. The listings have been identified by the “*New issues and IPO summary*” spreadsheet which can be found in the LSE website. Any missing Nomads have been hand collected from the annual reports of the firms using the Perfect Information database. Reputable Nomads are considered those that are on the top five deciles of the Nomad reputation composite variable as described in section 6.4.2. The firms with Nomads that have missing metric variables and cannot be ranked are excluded from the sample.

Table 6-4: Switches between the two UK markets and the number of reputable Nomads used

Panel A Switches from the MM to the AIM					Panel B: Switches from the AIM to the MM				
Year	Number of moves	Number of firms that used a reputable Nomad	Number of firms that used a non reputable Nomad	Number of firms without available data	Year	Number of moves	Number of firms that used a reputable Nomad	Number of firms that used a non reputable Nomad	Number of firms without available data
1996	1	0	0	1	1996	0	0	0	0
1997	4	2	1	1	1997	0	0	0	0
1998	3	1	1	1	1998	15	8	4	3
1999	10	8	1	1	1999	13	5	4	4
2000	20	16	2	2	2000	13	4	2	7
2001	32	14	13	5	2001	5	3	2	0
2002	37	25	7	5	2002	4	2	1	1
2003	43	28	13	2	2003	2	2	0	0
2004	20	17	0	3	2004	0	0	0	0
2005	35	27	7	1	2005	1	0	1	0
2006	29	24	4	1	2006	3	3	0	0
2007	6	4	1	1	2007	7	3	3	1
2008	10	7	0	3	2008	12	9	1	2
2009	3	3	0	0	2009	9	4	2	3
2010	6	4	1	1	2010	6	4	2	0
2011	6	2	3	1	2011	8	7	0	1
2012	3	0	2	1	2012	3	2	1	0
2013	8	6	1	1	2013	0	0	0	0
2014	6	1	5	0	2014	5	3	1	1
2015	5	4	0	1	2015	4	3	0	1
<i>Total</i>	<i>287</i>	<i>193</i>	<i>62</i>	<i>32</i>	<i>Total</i>	<i>110</i>	<i>62</i>	<i>24</i>	<i>24</i>
<i>%</i>	<i>100</i>	<i>67.25</i>	<i>21.60</i>	<i>11.15</i>	<i>%</i>	<i>100</i>	<i>56.36</i>	<i>21.82</i>	<i>21.82</i>

This table presents the switches between the two UK markets. Panel A reports the moves from the MM to the AIM and panel B the switches from the AIM to the MM. The switching firms as well as the Nomad firms have been identified by the “*New issues and IPO summary*” spreadsheet which can be found in the LSE website. The missing Nomads as well as the last Nomads of the firms that switch from the AIM to the MM have been hand collected from the annual reports of the switching firms using the Perfect Information database. Reputable Nomads are characterised the Nomads that belong to the top five deciles of the composite variable as described in section 6.4.2.

Tables 6-5 presents the summary statistics of the firms that switch between the two UK markets. The first four columns show the summary statistics of the firms that are supervised by a reputable Nomad, the next four columns report the summary statistics of the firms that are supervised by a non reputable Nomad, and the last four columns present the difference between the firms that are supervised by a reputable Nomad and those that are supervised by a non reputable Nomad. Panel A shows the firms that switch from the MM to the AIM and panel B the firms that switch from the AIM to the MM. As shown in panel A the firms that downgrade to the AIM and use reputable Nomads, are smaller in size with higher growth and stock liquidity compared to the firms that use non reputable Nomads. More specifically, the mean (median) market capitalisation of the firms that use reputable Nomads is 23.8m (12.49m), with a M/B of 1.97 and a ratio of trading volume to shares outstanding of 0.003 (*Stock liquidity*). The corresponding figures for the firms that use non reputable Nomads are 28.86m, 1.81 and 0.002. The firms that use a reputable Nomad raise on average 0.47m more funds. However, all of the above differences are not statistically significant.

As reported in panel B the firms that upgrade to the MM and use reputable Nomads are larger in size (mean market capitalisation of 202m) compared to the firms that use non reputable Nomads (mean market capitalisation of 137m). In addition, the firms that use reputable Nomads have lower growth and stock liquidity and raise less funds on average compared the firms that use non reputable Nomads. More specifically, the firms that are supervised by reputable Nomads have a mean M/B of 3.27, a ratio of trading volume to shares outstanding of 0.003 (*Stock liquidity*) and average proceeds of 3.12m while the corresponding figures for the firms that are supervised by non reputable Nomads are 3.36, 0.005 and 16.67m. Once again, the differences are not statistically significant. Hence, the concerns that the choice of Nomad is endogenously determined are alleviated. For this reason, endogeneity is not considered as a concern in this setting. However, these results should be interpreted with caution as entirely eliminating endogeneity issues is a limitation on this type of studies.

Table 6-5: Summary statistics

Variables	(1)					(2)					(3)			
	Firms using a Reputable Nomad					Firms using a Non-Reputable Nomad					(1) - (2)			
	Mean	Median	Max	Min	SD	Mean	Median	Max	Min	SD	Mean	P-value	Median	P-value
Panel A: Switches from the MM to the AIM														
Size	23,848	12,497	239,501	1324	37,939	28,862	16,781	182,074	2,629	36,386	-5,014	(0.396)	-4,284	(0.122)
M/B	1.968	1.110	20.380	-7.780	3.220	1.812	1.060	20.380	-5.700	3.678	0.156	(0.784)	0.050	(0.933)
S. Liquidity	0.003	0.002	0.076	0.000	0.006	0.002	0.002	0.167	0.000	0.003	0.001	(0.256)	0.000	(0.995)
Volatility	0.002	0.002	0.005	0.000	0.001	0.002	0.002	0.009	0.000	0.001	0.000	(0.869)	0.000	(0.485)
Proceeds (£m)	1.031	0.000	53.000	0.000	5.157	0.559	0.000	9.040	0.000	1.773	0.472	(0.333)	0.000	(0.474)
Panel B: Switches from the AIM to the MM														
Size	201,998	129,796	1,573,152	2,669	268,706	137,269	67,224	781,104	3,555	196,057	-64,729	(0.280)	-62,572	(0.165)
M/B	3.270	1.990	27.500	-44.210	8.814	3.367	2.885	12.250	0.510	2.938	-0.097	(0.945)	-0.895	(0.548)
S. Liquidity	0.003	0.002	0.168	0.000	0.003	0.005	0.002	0.046	0.000	0.105	-0.002	(0.516)	0.000	(0.629)
Volatility	0.002	0.001	0.005	0.000	0.000	0.002	0.002	0.003	0.000	0.000	0.000	(0.285)	-0.001	(0.146)
Proceeds (£m)	3.121	0.000	104.900	0.000	15.523	16.667	0.000	170.000	0.000	0.000	-13.546	(0.264)	0.000	(0.388)

This table reports the summary statistics of the firms that move between the two UK markets during the period of 1996-2015. Panel A shows the firms that switch from the MM to the AIM and panel B the firms that switch from the AIM to the MM. The first four columns (1) show the descriptive statistics of the firms that are supervised by a reputable Nomad, the next four (2) show the statistics of the firms that are supervised by a non reputable Nomad and the last four columns (3) report the difference of means and medians between the two samples. I use a t-test for the difference of means and a Wilcoxon test for the difference of medians. *Size* is measured by the market capitalization, *M/B* is the market to book ratio, *S. Liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81), *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Proceeds* are the funds raised during the switch in millions and are collected from the “*New issue and IPO summary*” spreadsheet offered by the LSE website. The financial data are retrieved from Worldscope. The stock and volume data are downloaded from Datastream. Reputable Nomads are the Nomads that belong to the first five deciles of the composite variable as described in section 6.4.2. P-values are reported in the parentheses.

6.5 The significance of Nomads for the abnormal stock returns prior to market switches

In this section, I examine the significance of Nomads, and in particular the extent to which they may reduce the abnormal stock returns prior to the official announcement of the market switches. Recall that the Nomads are responsible to monitor any abnormal trading activities in the share prices of their clients, especially when there are forthcoming announcements on significant corporate events (London Stock Exchange, 2014a; 2015a; b). In addition, I explore whether Nomads that also act as brokers for the same firm have better control over the switching firm by reducing the abnormal price reactions or whether they experience a conflict of interest between the interests of the AIM firms and those of any other party and more specifically of the LSE. As stated in Chapter 3, a Nomad that acts also as a broker in the same firm must take the appropriate safeguards in order to avoid any conflict of interest (London Stock Exchange, 2014a). This conflicting role of the Nomad could stem from the fact that the Nomads have two distinct roles in the same firm which translates to higher salaries received. This makes the firm a closer client of the Nomad which may make the Nomad act more favourably. The percentage of firms that hire the same company to act in both the role of Nomad and the role of broke is approximately 75% for both the firms that upgrade from the AIM to the MM and for the firms that downgrade from the MM to the AIM. In order to do so, I employ the following panel regression while using firm random effects:

$$\begin{aligned}
 AR_{i,t} = & \alpha + \beta_1 * Reputable\ Nomad_i + \beta_2 * Samebroker_i + \beta_3 * Reputable\ Nomad_i * \\
 & Samebroker_i + \beta_4 * AV_{i,t} + \beta_5 * Rumours_i + \beta_6 * Rumours_i * AV_{i,t} + \beta_7 * Size_{i,t-1} + \\
 & \beta_8 * M/B_{i,t-1} + \beta_9 * CA_i + \beta_{10} * CA_i * AV_{i,t} + \beta_{11} * Volatility_{i,t} + \beta_{12} * \\
 & Stock\ liquidity_{i,t} + \gamma * Year + \vartheta * Industry + \varepsilon_{i,t}
 \end{aligned} \tag{6.2}$$

Where the dependent variable AR is the daily average abnormal stock returns. The abnormal returns are calculated using an OLS market model, following Brown and Warner (1985). The independent variable of interest is the *Reputable Nomad* which is an indicator variable that takes the value of one if the Nomad is characterised as a reputable Nomad and zero otherwise. Reputable Nomads are those that fall within the first five deciles of the composite variable as described in Section 6.4.2. Reputable advisors are reported to provide higher quality services (Titman and Trueman, 1986; Chemmanur and Fulghieri, 1994; Golubov et al., 2012) and reduce the opportunities to cheat (Holland and Horton, 1993) while reputable Nomads are reported to be value enhancing (Espenlaub et al., 2012). The variable *Samebroker* is an indicator variable that takes the value of one if the switching firms use the

same company to act as a Nomad and a broker and zero otherwise. The *Reputable Nomad * Samebroker* is an interaction variable that takes the value of one if a firm uses a reputable Nomad that also acts as a broker and zero otherwise. Nomads that also act as brokers for the same company might have better control over the company or experience higher conflicts of interest between the interests of the AIM firms and other parties if they do not take into account the appropriate safeguards (London Stock Exchange, 2014a).

In addition, I control for several other factors that could influence my depended variable. Kyle and Viswanathan (2008) argues that the trades that possess private information incorporate their information advantage into stock prices moving them towards the direction of the information. Hence, increases in trading volume can drive the price upwards or downwards depending on the information. Thus, I control for *AV* which is the abnormal trading volume. The *AV* is calculated as shown in equation 4.2 in Chapter 4 following Bris (2005). I also control for rumours which is a binary variable that takes the value of one if the switch was rumoured during the year prior to the announcement of the switch and zero otherwise (*Rumours*). I also include the *Rumours * AV* which is an interaction variable between the *Rumours* and *AV*.

Atiase (1985) and Diamond and Verrecchia (1991), report that stock prices in small firms incorporate information slower than in large firms. In addition, Seyhun (1986) reports that small firms experience more insider purchases which could lead to price run-ups and large firms more insider sales which could lead to price reductions. Hence, I control for firm size, calculated as the natural logarithm of the market capitalization one year prior to the announcement of the switches. Fama and French (1992) argues that value and small cap firms outperform the markets. I control for *M/B* which is the market value to book value ratio one year prior to the announcement of the switches. Major corporate events are reported to experience pre-announcement abnormal stock returns (Jabbour et al., 2000; King, 2009). Thus, I control for *CA* which is a binary variable that takes the value of one if the firms simultaneously announced another major corporate event up to one month prior to the switch announcement. I also include the *CA*AV* variable which is an interaction between *CA* and *AV*.

Meulbroek (2000) finds that riskier firms experience high levels of selling from their insiders. I control for volatility, measured as the standard deviation of the stock returns over the estimation window (-250, -81) prior to the announcement of the moves. Kyle (1985) and Holmström and Tirole (1993) report that insider trading is more evident when stock liquidity

is higher due to the fact that there is higher profit for insiders when there are more uninformed investors in the market. Furthermore, Admati and Pfleiderer (1988) argues that informed investors tend to trade more aggressively in periods of high stock liquidity due the fact that they can trade undetected. Hence, I control for stock liquidity calculated as the daily average of the ratio of trading volume over the shares outstanding during the estimation window (-250, -81). Finally, I include year and industry fixed effects, in order to control for year and industry characteristics.

Table 6-6 reports the results. As shown in the column one which shows the firms that move from the MM to the AIM, the coefficient of *Reputable Nomad* is 0.003 and significant at the 5% level. This suggests that firms which employ a reputable Nomad experience lower negative daily abnormal stock returns by 0.3%. This result indicates that reputable Nomads exercise better monitoring over their firms compared to lower ranked Nomads. Interestingly, as shown on the parameter coefficient for the interaction variable *Reputable Nomad * Samebroker*, I find that firms that hire a reputable Nomad which simultaneously acts as a broker in the firm, experience less relevant benefit. I find that the relevant parameter coefficient (-0.004) is significant at the 5% level. Having the same firm as a Nomad and a broker seems to create a conflict of interest between the interest of the AIM insiders and the obligations of the Nomads towards the LSE. This result is to some extent, in line with Gerakos et al. (2013), who study the significance of Nomads within the context of post-IPO performance, and report that having the same firm to act in both roles does not provide additional information about the supervised firm.

The second column of Table 6-6 shows the relation between abnormal stock returns and reputable Nomads for the firms that switch from the AIM to the MM. In line with the above results, I find that the parameter coefficient for *Reputable Nomads* (-0.005) is significant at the 5% level in this occasion. This reveals a decrease in the daily price run-ups of 0.5% for the firms that use a reputable Nomad. Also, when firms hire the same company to act both as a Nomad and a broker, the decrease in the price run-ups is reduced, again revealing the potential conflict of interest between the interests of the AIM firms and the Nomads' obligations towards the LSE.

Overall, the results show that the choice of Nomads is of major importance, as reputable Nomads could decrease the abnormal stock price returns prior to the official announcement of the switches between the two UK markets. As a result, the reputable Nomads seem to exercise higher control over their supervisees on both events. However, having a reputable Nomad to also act as a broker seems to decrease these effects. This finding raises concerns

as to whether Nomads that also act as brokers take the necessary precautions, in order to avoid conflicts of interests as dictated by the “*AIM rules for Nominated Advisers*”.

Table 6-6: The moderating effect of Nomads' reputation on abnormal stock returns

	Dependent: Abnormal stock returns	
	From MM to AIM	From AIM to MM
	(-60, -1)	(-60, -1)
Reputable Nomad	0.003** (0.044)	-0.005** (0.034)
Samebroker	0.002 (0.135)	-0.001 (0.498)
RepN*Samebroker	-0.004** (0.020)	0.005* (0.099)
AV	-0.376** (0.025)	0.935*** (0.001)
Rumours	-0.001 (0.404)	0.003* (0.071)
Rumours*AV	-0.639** (0.050)	-0.192 (0.846)
Size	-0.000 (0.591)	-0.001 (0.471)
M/B	-0.000 (0.168)	0.000 (0.393)
CA	-0.001 (0.431)	-0.002* (0.071)
CA*AV	0.923*** (0.000)	-0.183 (0.543)
Volatility	-0.477 (0.236)	-1.201 (0.266)
Stock Liquidity	-0.014 (0.878)	-0.042 (0.890)
Constant	-0.007 (0.175)	0.016* (0.077)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
R ² -adjusted	0.015	0.032
N	9,361	3,997

This table explores the moderating effect of Nomads' reputation on abnormal stock returns. *Reputable Nomad* is an indicator variable that takes the value of one if the Nomad is characterized as a reputable Nomad and zero otherwise. *Samebroker* is an indicator variable that takes the value of one if the firm hires the same firm to act as a Nomad and broker and zero otherwise. *RepN * Samebroker* is an interaction variable that takes the value of one if a firm uses a reputable Nomad that also acts as a broker and zero otherwise. *AV* is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero, following Bris (2005). *Rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Rumours*AV* is the interaction between the *Rumours* and *AV*, *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another major corporate event (e.g. takeovers, mergers, final year results) during the announcement day or one month prior to the announcement and zero otherwise, *CA*AV* is the interaction between the *C. Announcement* and *AV*, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). The Nomads data for the firms that downgraded to the AIM are collected from the "New issues and IPO summary" spreadsheet located in the LSE website. The missing Nomad data as well as the brokers are hand collected from the firm's annual reports using the Perfect Information database. Stock, indices and volume data are retrieved from Datastream. Financial data are collected from Worldscope. P-values are shown in parentheses. The numbers in italic represent the number of observations. The symbols *, ** and *** show significance at the 10, 5 and 1% levels, respectively.

6.5.1 Additional tests

To further explore the results, I use several different ranking benchmarks of the composite to identify the reputation of Nomads. Reputable Nomads are also defined as the top four, three, two and one deciles. Next, I perform the previous multivariate regression (6.2) as presented in section 6.5 in order to examine whether the results are robust when using different ranking deciles. Tables 6-7 and 6-8 report the results of the regressions for the firms that move from the MM to the AIM and from the AIM to the MM, respectively. Column 1 shows the results of the previous regression in section 6.5 using the first five deciles as reputable Nomads benchmark for comparison reasons. In column 2, I use the top four deciles as a reputable Nomads benchmark, in column 3, I use the top three deciles as a reputable Nomads benchmark, in column 4, I use the top two deciles as a reputable Nomads and finally column 5 presents the results using the top decile as a reputable Nomads.

As shown in Table 6-7, the results are robust for the firms that move from the MM to the AIM even after changing the ranking procedure. More specifically, I find decreases in the 60 days' price run-ups that range between 0.3% and 0.4% for the firms that use a top four, top three, top two and top one decile reputable Nomads. These results are significant at the least at the 10% level. Furthermore, when Nomads act also as brokers the firms seem to experience less relevant benefit almost in all ranking benchmarks as reported in the parameter coefficients of *Reputable Nomad * Samebroker* variable. Table 6-8 shows that the results hold when I use different ranking measurements for the firms that move from the AIM to the MM. I find decreases in the 60 days' price reductions in all ranking benchmarks that range from 0.4% to 0.5%. These results are significant at the 5% level. Once again, having the same firms to act as a Nomad and a broker in the same firms seems to create conflicts of interest as it is reflected in all ranking benchmarks. Overall, the results are qualitatively similar on both events after controlling for different ranking benchmarks.

Table 6-7: Different ranking deciles for the measurement of reputable Nomads, MM to AIM

	Dependent: Abnormal stock returns				
	(1)	(2)	(3)	(4)	(5)
	Top 5 deciles	Top 4 deciles	Top 3 deciles	Top 2 deciles	Top decile
Reputable Nomad	0.003** (0.044)	0.003** (0.037)	0.004*** (0.008)	0.004** (0.023)	0.003* (0.079)
Samebroker	0.002 (0.135)	0.001 (0.525)	0.001 (0.367)	0.000 (0.752)	0.000 (0.666)
RepN*Samebroker	-0.004** (0.020)	-0.002* (0.100)	-0.003** (0.021)	-0.003* (0.087)	-0.003 (0.182)
AV	-0.376** (0.025)	-0.376** (0.023)	-0.377** (0.024)	-0.376** (0.023)	-0.377** (0.023)
Rumours	-0.001 (0.404)	-0.001 (0.384)	-0.001 (0.420)	-0.002 (0.271)	-0.001 (0.358)
Rumours*AV	-0.639** (0.050)	-0.639** (0.049)	-0.630* (0.053)	-0.664** (0.041)	-0.657 (0.043)
Size	-0.000 (0.591)	-0.000 (0.607)	-0.000 (0.716)	-0.000 (0.738)	-0.000 (0.614)
M/B	-0.000 (0.168)	-0.000 (0.142)	-0.000 (0.126)	-0.000 (0.140)	-0.000 (0.144)
CA	-0.001 (0.431)	-0.001 (0.424)	-0.001 (0.467)	-0.001 (0.420)	-0.001 (0.427)
CA*AV	0.923*** (0.000)	0.922*** (0.000)	0.923*** (0.000)	0.920*** (0.000)	0.922*** (0.000)
Volatility	-0.477 (0.236)	-0.555 (0.178)	-0.555 (0.183)	-0.568 (0.177)	-0.542 (0.202)
Stock Liquidity	-0.014 (0.878)	-0.020 (0.823)	-0.020 (0.822)	-0.026 (0.774)	-0.190 (0.834)
Constant	-0.007 (0.175)	-0.007 (0.182)	-0.008 (0.133)	-0.008 (0.129)	-0.007 (0.198)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
R ² -adjusted	0.015	0.015	0.015	0.015	0.015
N	9,361	9,361	9,361	9,361	9,361

This table presents the relation between abnormal stock returns and reputable Nomads when using five different ranking deciles for the firms that switch from the MM to the AIM. *Reputable Nomad* is an indicator variable that takes the value of one if the Nomad is characterized as a reputable Nomad and zero otherwise. *Samebroker* is an indicator variable that takes the value of one if the firm hires the same firm to act both as a Nomad and as a broker and zero otherwise. *RepN * Samebroker* is an interaction variable that takes the value of one if a firm uses a reputable Nomad that also acts as a broker and zero otherwise. *AV* is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero, following Bris (2005). *Rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Rumours*AV* is the interaction between the *Rumours* and *AV*, *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another major corporate event (e.g. takeovers, mergers, final year results) during the announcement day or one month prior to the announcement and zero otherwise, *CA*AV* is the interaction between the *CA* and *AV*, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). The missing Nomad data as well as the brokers are hand collected from the firm's annual reports using the Perfect Information database. Stock, indices and volume data are retrieved from Datastream. Accounting data are collected from Worldscope database. P-values are shown in parentheses. The symbols *, ** and *** show significance at the 10, 5 and 1% levels, respectively.

Table 6-8: Different ranking deciles for the measurement of reputable Nomads, AIM to MM

	Dependent: Abnormal stock returns				
	(1)	(2)	(3)	(4)	(5)
	Top 5 deciles	Top 4 deciles	Top 3 deciles	Top 2 deciles	Top decile
Reputable Nomad	-0.005** (0.034)	-0.005** (0.035)	-0.005** (0.035)	-0.004** (0.023)	-0.004** (0.014)
Samebroker	-0.001 (0.498)	-0.002 (0.346)	-0.002 (0.326)	0.000 (0.872)	0.001 (0.655)
RepN*Samebroker	0.005* (0.099)	0.006** (0.050)	0.006* (0.052)	0.005*** (0.006)	0.006*** (0.004)
AV	0.935*** (0.001)	0.935*** (0.001)	0.931*** (0.001)	0.935*** (0.001)	0.926*** (0.001)
Rumours	0.003* (0.071)	0.002* (0.100)	0.003 (0.103)	0.002 (0.159)	0.002 (0.152)
Rumours*AV	-0.192 (0.846)	-0.201 (0.838)	-0.194 (0.844)	-0.163 (0.870)	-0.156 (0.875)
Size	-0.001 (0.471)	-0.001 (0.483)	-0.001 (0.461)	-0.000 (0.591)	-0.000 (0.535)
M/B	0.000 (0.393)	0.000 (0.364)	0.000 (0.373)	0.000 (0.390)	0.000 (0.278)
CA	-0.002* (0.071)	-0.002* (0.071)	-0.002* (0.061)	-0.003** (0.021)	-0.003** (0.016)
CA*AV	-0.183 (0.543)	-0.183 (0.543)	-0.178 (0.553)	-0.185 (0.538)	-0.170 (0.569)
Volatility	-1.201 (0.266)	-1.144 (0.281)	-1.111 (0.302)	-1.354 (0.223)	-1.768 (0.116)
Stock Liquidity	-0.042 (0.890)	-0.055 (0.853)	-0.046 (0.876)	-0.081 (0.786)	-0.068 (0.811)
Constant	0.016* (0.077)	0.162* (0.085)	0.165* (0.081)	0.013* (0.084)	0.015* (0.067)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
R ² -adjusted	0.032	0.033	0.033	0.033	0.033
N	3,997	3,997	3,997	3,997	3,997

This table presents the relation between abnormal stock returns and reputable Nomads when using five different ranking deciles for the firms that switch from the AIM to the MM. *Reputable Nomad* is an indicator variable that takes the value of one if the Nomad is characterized as a reputable Nomad and zero otherwise. *Samebroker* is an indicator variable that takes the value of one if the firm hires the same firm to act both as a Nomad and as a broker and zero otherwise. *RepN * Samebroker* is an interaction variable that takes the value of one if a firm uses a reputable Nomad that also acts as a broker and zero otherwise. *AV* is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero, following Bris (2005). *Rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Rumours*AV* is the interaction between the *Rumours* and *AV*, *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another major corporate event (e.g. takeovers, mergers, final year results) during the announcement day or one month prior to the announcement and zero otherwise, *CA*AV* is the interaction between the *CA* and *AV*, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). The missing Nomad data as well as the brokers are hand collected from the firm's annual reports using the Perfect Information database. Stock, indices and volume data are retrieved from Datastream. Accounting data are collected from Worldscope database. P-values are shown in parentheses. The symbols *, ** and *** show significance at the 10, 5 and 1% levels, respectively.

Finally, to test whether reputable Nomads reduce the abnormal trading volume prior to market switches, I estimate the following panel regressions, using firm random effects:

$$AV_{i,t} = \alpha + \beta_1 * Reputable\ Nomad_i + \beta_2 * Samebroker_i + \beta_3 * Reputable\ Nomad_i * Samebroker_i + \beta_4 * Rumours_i + \beta_5 * Size_{i,t-1} + \beta_6 * M/B_{i,t-1} + \beta_7 * CA_i + \beta_8 * Volatility_{i,t} + \beta_9 * Stock\ liquidity_{i,t} + \gamma * Year + \vartheta * Industry + \varepsilon_{i,t} \quad (6.3)$$

Table 6-9 reports the relation between abnormal trading volume and reputable Nomads. The first column shows the firms that switch from the MM to the AIM. The coefficient of *Reputable Nomad* is -0.001 and significant at the 10% level, indicating that reputable Nomads slightly reduce the abnormal trading volume prior to the switching announcements. In line with the results on abnormal stock returns reported earlier, hiring the same firm to act both as a Nomad and a broker creates a conflict of interest as reported in the parameter coefficient of *Reputable Nomad * Samebroker* variable. I find that the latter parameter coefficient is 0.001 and significant at the 5% level. The second column shows the firms that switch from the AIM to the MM. The results are not as consistent in this occasion. I find that reputable Nomads reduce the daily abnormal trading volume by 0.1%, however the parameter coefficient is insignificant. This could be attributed to the fact that volume may increase in response to non-price sensitive announcements such as the CEOs appearing in the media. It could also be attributed to the limitation of abnormal trading volume to act on its own as a robust indication of the overall informed trading as it cannot show the direction of the trades. However, when supplemented by price information it provides a strong indication (Monteiro, 2007).

Table 6-9: The moderating effect of Nomads' reputation on abnormal trading volume

	Dependent: Abnormal trading volume	
	(1)	(2)
	From MM to AIM	From AIM to MM
	(-60, -1)	(-60, -1)
Reputable Nomad	-0.001*	-0.001
	(0.099)	(0.514)
Samebroker	-0.000	-0.000
	(0.597)	(0.397)
RepN*Samebroker	0.001**	0.000
	(0.014)	(0.664)
Rumours	-0.000	0.000
	(0.487)	(0.905)
Size	0.000	-0.000
	(0.527)	(0.879)
M/B	0.000	-0.000**
	(0.549)	(0.029)
CA	0.000	0.000
	(0.244)	(0.775)
Volatility	-0.013	-0.308
	(0.887)	(0.269)
Stock Liquidity	0.109**	0.202**
	(0.012)	(0.041)
Constant	0.000	0.001
	(0.241)	(0.707)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
R ² -adjusted	0.012	0.054
N	9,361	3,997

This table explores the moderating effect of Nomads' reputation on abnormal trading volume. The abnormal trading volume is computed using the following model $AV_{i,t} = V_{i,t} - (\bar{V}_i + 2S_{vol})$ if $V_{i,t} > \bar{V}_i + 2S_{vol}$ otherwise zero following Bris (2005). *Reputable Nomad* is an indicator variable that takes the value of one if the Nomad is characterized as a reputable Nomad and zero otherwise. *Samebroker* is an indicator variable that takes the value of one if the firm hires the same firm to act as a Nomad and broker and zero otherwise. *RepN * Samebroker* is an interaction variable that takes the value of one if a firm uses a reputable Nomad that also acts as a broker and zero otherwise. *Rumours* is an indicator variable that takes the value of one if there is a rumour about the move one year prior to the announcement of the event and zero otherwise, *Size* is measured by the natural logarithm of market capitalization, *M/B* is the market to book ratio, *CA* is an indicator variable that takes the value of one if the firm simultaneously announced another major corporate event (e.g. takeovers, mergers, final year results) during the announcement day or one month prior to the announcement and zero otherwise, *Volatility* is the standard deviation of the stock returns over the estimation window (-250, -81) and *Stock liquidity* is the daily average of the trading volume to shares outstanding ratio over the estimation window (-250, -81). The Nomads data for the firms that downgraded to the AIM are collected from the "New issues and IPO summary" spreadsheet located in the LSE website. The missing Nomad data as well as the brokers are hand collected from the firm's annual reports using the Perfect Information database. Stock, indices and volume data are retrieved from Datastream. Financial data are collected from Worldscope. P-values are shown in parentheses. The symbols * and ** show significance at the 10, and 5% levels, respectively.

6.6 Conclusion

This chapter provides insights on the Nomads as a regulatory mechanism and trading monitor. Using five different measures (the Nomads market share in terms of new issues in the year prior to the switch, the cumulative Nomads market shares in terms of new issues in the years prior to the switch, the Nomads market share in terms of proceeds a Nomad backed in the year before the firm market switch, the cumulative market share in terms of proceeds a Nomad backed in the years before the firm market switch and the Nomads' age) I rank the Nomads into reputable and non reputable and examine whether reputable Nomads mitigate the abnormal stock price actions observed prior to the announcement of the switches from the AIM to the MM and vice versa during the period of 1996-2015. In addition, I investigate whether reputable Nomads that also act as brokers in the same firm could further reduce the pre-announcement abnormal stock returns due to having better control over the supervised firm.

Using a panel regression analysis, I find that reputable Nomads moderate the abnormal stock price movements generated 60 trading days prior to the public announcement of the market switches on both events. These results demonstrate the importance of reputation on the decentralised regulatory body of the AIM. However, the abnormal stock price reductions decrease when the same firm acts both as a Nomad and as a broker in the same firm raising concerns as to whether the Nomad firms take the necessary precautions in order to avoid potential conflicts of interest that might arise by having the same firm into two different roles. The results are qualitatively similar after controlling for four additional ranking benchmarks.

The results suggest that the Nomads play a significant role as a regulatory and monitoring mechanism deeming them as an essential part of the AIM. The findings also show that reputable Nomads can safeguard the reputation and stability of the LSE by mitigating illegal and market abusive behaviours. However, the results also report a weak spot in the decentralised regulation which could be the conflicts of interests between the interests of the AIM firms and the interests of the LSE. The evidence of this study could be of importance to the UK regulators and to the LSE as I highlight the significance of reputable Nomads in reducing price anomalies. In addition, the results could be of interest to investors as they show that the choice of quality and reputable Nomads could constitute another factor in their investment strategies.

7. Conclusion

7.1 Summary of the thesis

This thesis comprised of three empirical chapters, focusing on the market switches between the two UK markets, namely the AIM and the MM. The MM is the traditionally regulated market of the UK, created to attract medium or large developed firms. It is a prestigious market with a long history, founded in 1698 maintaining its position as a home for firms from all over the world. It features strict market regulations, high eligibility criteria and ongoing obligations. Companies listed in the MM are considered of high esteem and are followed by many analysts while they have access to a large investor pool (London Stock Exchange, 2010). The AIM is the secondary market of the UK, its traits is that it is a light regulated market that allows small and high growth firms to gain access to capital on a cost-efficient manner. It was created in 1995, initially to act as a stepping stone to the MM. However, this notion changed over the years and AIM started to attract firms from all over the world including firms formerly listed in the MM (Acrot et al., 2007). Today it is considered as one of the most popular secondary markets of the globe (Doukas and Hoque, 2016). In fact, it acted as a blueprint for other light regulated markets such as the Nasdaq's First North operating in the Nordic countries, the Mercado Alternativo operating in Spain and the NewConnect operating in Poland, among others. The US has also initiated discussion with regards to secondary markets⁶¹, highlighting the increased need for regulatory attention in these markets.

Firms listed in the LSE often switch between the two markets. Firms that meet the eligibility criteria and pursue access to high analyst coverage and a larger investor pool move to the MM. This move is considered as a market upgrade and therefore perceived as good news by the market. In contrast, firms that seek to avoid the strict regulations and high costs of the MM switch to the AIM. However, this switch is characterized as a market downgrade triggering negative reaction in the market. These moves have been associated with abnormal announcement stock returns, and more specifically with positive announcement stock returns for the switches to the MM and negative announcement stock returns for the moves to the AIM (Jenkinson and Ramadorai, 2013; Campbell and Tabner, 2014).

⁶¹https://www.sec.gov/news/statement/need-for-greater-secondary-market-liquidity-for-small-businesses.html#_edn33

The existence of these abnormal announcement stock returns creates a possibility for profit generation for individuals that are knowledgeable over the upcoming switches before they are publicly announced, a phenomenon that is well documented in other major corporate events (Eyssell and Arshadi, 1993; Holland and Hodgkinson, 1994; Jabbour et al., 2000; Dubow and Monteiro, 2006; King, 2009; Siganos and Papa, 2015). This forms my motivation for the first empirical chapter (Chapter 4) in which I examine whether individuals in possession of price sensitive information prior to the market switches use their information advantage against other investors in the market by leaking that information to other individuals. In order to explore this question, I examine the stock prices and trading volume during the pre-announcement period for the firms that switch from the AIM to the MM and vice versa.

Following a standard event study methodology, I find price run-ups and abnormal trading volume approximately 60 trading days prior to the announcement of switches from the AIM to the MM and price reductions and abnormal trading volume circa 60 trading days prior to the announcement of the switches from the MM to the AIM. After controlling for several factors such as rumours or other major corporate announcement, I find that the market anticipation hypothesis may be valid, but it cannot fully explain the abnormal market reactions. This indicates that the abnormal prices could be attributed to the leakage of inside information prior to the transition announcements. In addition, employing panel regressions, I find a significant and contemporaneous relationship between the abnormal stock returns and the abnormal trading volume which is an additional sign in support of the information leakage hypothesis. I further match the switching firms with a sample of control firms that did not switch markets and I find a statistically significant difference in the abnormal stock returns of the two groups which confirms my earlier findings that firms switching between the two markets experience abnormal stock price reactions.

Following my findings from Chapter 4, that suggest potential informational leakage prior to the market switches, I further assess whether corporate insiders trade on their own personal accounts prior to the events in order to generate profit. Thus, Chapter 5 is motivated by the fact that corporate insiders know about the forthcoming switches several months prior to the official announcements and therefore could adjust their trading strategies in the direction of their information, as it is evident in other major corporate events such as new issue announcements (Karpoff and Lee, 1991; Kahle, 2000), leveraged buyouts (Harlow and Howe, 1993), real estate investment appraisals (Damodaran and Liu, 1993) and takeovers (Agrawal and Nasser, 2012). In order to document corporate insiders behaviour, I use three

different insider trading measures (the number of insider trades, the amount of shares traded and the value of shares traded) and separately examine the insiders' purchases, insiders' sales and insiders' net purchases calculated as purchases minus sales. Using these three measures, I assess insiders' trades relative to a time series benchmark, which compares the volume of trades during the pre-announcement period and a control period before the pre-announcement period, and relative to a cross sectional benchmark which compares the sample firms with a set of a matched control firms. Finally, I use a difference in difference methodology that serves as a dual control taking into account both of the previous benchmarks.

I find that corporate insiders decrease their purchases and increase their sales, effectively decreasing their net purchases six months prior to the switches from the MM to the AIM, in line with the active insider trading hypothesis. In addition, I find significant increases in net purchases one year prior to the public announcement of the moves from the AIM to the MM. However, the results appear to be weaker for the firms that upgrade from the AIM to the MM, which can be attributed to the lack of insider list in the AIM which could result to improper or poor recording of the insiders in the AIM firms and hence potentially missing disclosed insider trading data.

Finally, motivated by the abnormal stock price actions and market abusive behaviours reported in the previous two empirical Chapters, in Chapter 6 I investigate potential ways that could assist in mitigating those phenomena. More specifically, I assess whether reputable Nomads are a useful tool against the abnormal pre-announcement price actions, as it is reported in the literature that reputable advisors provide higher quality services and reduce potential information asymmetries (Titman and Trueman, 1986; Chemmanur and Fulghieri, 1994; Golubov et al., 2012). In order to measure the reputation of the Nomads I follow Bushman et al. (2004) and Espenlaub et al. (2012) and create a composite variable ranking method that takes into account the unweighted average of five different measurements. The first measure is the Nomads market share in terms of new issues in the year prior to the switch, the second measure is the cumulative Nomads market shares in terms of new issues in the years prior to the switch, the third measure is the Nomads market share in terms of proceeds a Nomad backed in the year before the firm market switch, the fourth measure is the cumulative market share in terms of proceeds a Nomad backed in the years before the firm market switch and the fifth measure is the Nomads age on the year prior to the switch. Finally, reputable Nomads are characterised those that belong in the top five deciles of the composite variable.

I find that the reputable Nomads reduce the abnormal stock returns observed prior to the public announcement of the switches on both the switches from the AIM to the MM and from the MM to the AIM, highlighting that high quality decentralised regulators could assist in mitigating prohibited market behaviours. However, when the Nomads act also as brokers in the same firms the reductions on abnormal stock returns decreases or even disappear, indicating a potential conflict of interest between the interests of the board of the AIM firms they supervise and their obligations towards the LSE, due to the closer relationship between the AIM firms and the Nomads. The results are robust when controlling for different ranking deciles of the composite variable such as the top four, top three, top two and top one deciles.

7.2 Implications of the study

This study has several implications on both academics and practitioners. The first major implication of the study is that it fills the literature gap on the information leakage and insider trading studies. Prior literature focuses mostly on major and popular corporate events such as takeovers, SEOs and MBOs among others (e.g. John and Larry, 1991; Eysell and Arshadi, 1993; Kahle, 2000; Jabbour et al., 2000; King, 2009; Agrawal and Nasser, 2012; Berkman et al. 2016) when it comes to insider trading and to leakage of inside information. In this thesis, I introduce a new corporate event which lacks focus by academics, yet it can trigger market abusive techniques.

In addition, the study has several implications on regulators and policy makers as I highlight that the switches between a light, decentralized regulated market and a traditional regulated market could damage the integrity and stability of the markets by creating space for illegal and market abusive behaviours. The market cleanliness statistic that examines whether the UK markets are clean from insider trading in the UK, is measured mostly by taking into account takeovers or other significant trading announcements on the FTSE 350 (Dubow and Monteiro, 2006; Monteiro, 2007; Goldman et al., 2014). This study suggests that the regulators should take a wider view on where insider trading might be lurking in order to protect their investors. Furthermore, by shading light on these corporate events, might have implications to market participants as they could potentially avoid falling victims of informed trading.

Finally, this research provides further insights on the decentralized regulation of the light and exchange regulated markets (in the EU are also known as Multilateral Trading Facilities). Prior literature shows that reputable Nomads could increase the survivability of the AIM firms (Eспенlaub et al., 2012) and that reputable advisors provide better information

about their firms (Titman and Trueman, 1986; Chemmanur and Fulghieri, 1994). I extend this literature by providing evidence that the reputable Nomads offer better advisory and regulatory services. This finding could have several implications on the exchanges or bodies that regulate the MTFs as they suggest that they should focus on attracting high quality and prestigious firms that can assist on improving the integrity and reputation of those markets.

7.3 Limitations of the study

The findings of this research should be considered in the context of the following caveats. First, the estimation and examination of the information leakage hypothesis is by definition limited as the methodology used cannot directly prove the existence of leakage of inside information or any other illegal activities prior to market switches. However, even though it has its limitations, it is the most reliable method to date used by academics (Keown and Pinkerton, 1981; Jabbour et al., 2000; King, 2009; Siganos and Papa, 2015), UK regulators (Dubow and Monteiro, 2006; Monteiro, 2007; Goldman et al., 2014) and oftentimes by the SEC in courts when they are in need of additional evidence to prove the guilt or innocence of individuals or firms accused for illegal insider trading (Mitchell and Netter, 1994).

Second, this study assumes that all individuals that have access to private information are registered as corporate insiders. However, the disclosed data from corporate insiders, might only capture a percentage of insider trading prior to the market moves between the two UK markets, of which especially the insider sales could have been made due to liquidity needs rather than possession of inside information (Lakonishok and Lee, 2001). In addition, as reported in the insider trading literature the most successful trades that use price sensitive information are those from the insiders that hide their existence from the market regulators managing to avoid detection (Pope et al., 1990). Hence, the limitation on the availability of disclosed data should be also taken into account as the study assumes that all director deals are reported to the LSE as required by law.

Third, even though the market share measurement for reputable advisors is well established in the literature, (e.g. Megginson and Weiss, 1991; Rau, 2000; Kale et al., 2003; Fang, 2005; Ismail, 2010 Espenlaub et al., 2012) it only serves as a proxy of reputation or advisor quality as it cannot take into account the reputation of employees working in the firms or corporate frauds such as scandals related to the advisory firms and fines imposed to the them (Karpoff and Lott Jr, 1993; Alexander, 1999).

7.4 Further work

The market switches and especially the AIM is a fruitful area for research as it is relatively a new market with a unique decentralized regulatory system which has spawned the establishment of several secondary markets throughout the world. An extension of this research could be to examine whether a combination of a reputable Nomad along with a high-quality auditor, registrar and lawyer firms could further reduce the market abusive behaviours in the market. As there is evidence that solely reputable Nomads (Espenlaub et al., 2012; Gerakos et al., 2013), reputable advisors (Kale et al., 2003; Golubov et al., 2012) and big 4 auditors (DeAngelo, 1981; Beatty, 1989; Willenborg, 1999) provide higher quality services, a research investigating this setup would give us a better understanding as to whether the qualities of several advisors and auditors synergize in order to provide a safer environment for investing and thus better quality services to investors.

Another extension of this study could be the examination of the performance of the firms that switch from a low reputable Nomad to a high reputable Nomad and vice versa as this would shed light as to whether high quality Nomads assist in the performance of the firms they supervise. Prior literature reports the reputable advisors do not assist in the performance of their clients (Michel et al., 1991; McLaughlin, 1992; Servaes and Zenner, 1996), however since Nomads have a dual role, as they act as both regulators and advisors, a link between the performance of the firms and Nomads could be possible. Finally, a further extension of this study could be an examination of the impact of the MAR on insider trading activities in the AIM market. This new stricter regulation was introduced in July 2016 and brought several changes in insider trading (for a detailed analysis of the changes brought by MAR, see section 3.2.1). An examination as to whether stricter insider trading country laws work on light regulated markets would provide us with a better understanding on these markets.

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Appendices

Appendix 1: Examples of illegal insider trading cases in the UK

In this section I present some of the criminal sanctions that were achieved by the FCA during the previous years. In total the FCA has brought seventeen insider trading criminal sanction cases during the last ten years. The first criminal sanction in the UK occurred in 27th of March of 2009. The FCA found that Mr. Christopher McQuoid, counsel at TTP communications, shared inside information with his father in law Mr. James William Melbourne in order to generate profit. More specifically, in May of 2006 Mr. McQuoid was informed that Motorola was planning to takeover TTP, while two days before the takeover his father in law, Mr. Melbourne purchased 153,824 TTP shares at 13 pence per share. When the takeover was announced, the price soared at 45 pence per share creating a profit of £48,919.20 for Mr. Melbourne, who after three months he gave a cheque of £24,459.60 (half of the profit) to Mr. McQuoid. Mr. McQuoid was convicted for 8 months of imprisonment while his father in law was convicted for the same amount of time but suspended for 12 months (Financial Times 31 March 2009; <http://www.fsa.gov.uk/pages/Library/Communication/PR/2009/042.shtml>)

In 28th of May of 2012, the FCA brought another significant case which involved the co-operation of the Federal Bureau of Investigation (FBI), the US Department of Justice (DoJ) and the US SEC. Mr. Arnold McClellan, head of mergers and acquisitions advisory team at Deloitte in San Francisco, or his wife Mrs. Annabel McClellan, passed inside information about US takeovers in the NYSE and the NASDAQ exchanges to Mr. James Sanders, a director of Blue Index, and Mrs. Miranda Sanders, Annabel's sister, who proceeded in insider dealing. Moreover, Mr. James Sanders shared that information to Mr. Swallow and encouraged clients of Blue Index to trade on the basis of this price sensitive information. The total profits earned by the defendants were £1.9 million while the total profits generated by Blue Index clients were £10.2 million. Mr. James Sanders was sentenced to four years' imprisonment with a reduction of six months after pledging guilty while Mrs. Miranda Sanders and Mr. Swallow were both sentenced to 10 months in prison. Mrs. Annabel McClellan pleaded guilty and was fined for \$1 million and sentenced to 1 month in prison without parole (Financial Times 28 May, 2012; Telegraph.co.uk 20 June, 2012; <http://www.fsa.gov.uk/library/communication/pr/2012/060.shtml>).

Another famous insider trading case was also occurred in 2012. Mr. Ali Mustafa along with his brother Mr. Ersin Mustafa, who were working on the printing facilities of UBS and JPMorgan Cazenove, were disclosing inside information about forthcoming takeovers bids to Mr. Pardip Saini, who then shared the data to Mr. Neten Shah, an accountant, Ms. Bijal Shah, the nephew of Mrs. Neten Shah and Mr. Truptesh Patel through drop box, making a combined profit of £732,044.59. Mr. Ali Mustafa, Mr. Pardip Saini and Mr. Paresh Shah were sentenced to 3 and a half years' imprisonment, Mr. Truptesh Patel and Mr. Bijal Shah were sentenced to 2 years while Mrs. Neten Shah was sentenced to 18 months. Mr Ersin Mustafa fled to the north part of Cyprus (which does not have an extradition treaty with the UK) before the trial as Judge Pegden mentioned (FT.com July 27, 2012; <http://www.fsa.gov.uk/library/communication/pr/2012/080.shtml>).

The last example is one of the most famous UK cases with the higher sentence ever served in the UK. In 12th of May of 2016 Mr. Martyn Dodgson, a senior investment banker, and Mr. Andrew Hind, a Chartered Accountant, have been sentenced to 4.5 years and 3.5 years' imprisonment, respectively. Mr. Martyn Dodgson was passing insider information to Andrew Hind who shared the information to wealthy individuals, Mr. Itaj Prvizi and Mr. Ben Anderson in order to trade. They made profit of millions of pounds. Mr. Itaj Privzi and Mr. Ben Anderosn were acquitted due to the fact that they didn't know that the information from Mr. Andrew Hind was inside information (Financial Times 9 May, 2016; Bloomberg.com 28 June, 2016; <https://www.fca.org.uk/news/press-releases/insider-dealers-sentenced-operation-tabernula-trial>).

Appendix 2: The main differences between the UK and the US insider trading regulations

While in the UK the insider trading legislation was introduced in 1980 in the US it started decades earlier in 1933 with the Securities Act of 1933 and the Securities Exchange Act of 1934 through Section 16 (a) (b), Section 10(b) and rule Rule 10b-5. The two legislations serve the same purpose, which is to protect shareholders from market abusive techniques and to keep the markets free from fraud. However, the legislation differences between the two countries are major with the US following a stricter approach. The following table shows the main differences between the two countries.

The main differences between the UK and the US insider trading legislations

	UK	US
Year of insider law introduction	1980 (Companies Act of 1980)	1933 (Securities Act of 1933)
Regulation body	FCA	SEC
Insider definition	Directors, executives, and any individual that has the power to make managerial decisions (Section 96b of FSMA)	Directors, officers, key employees, shareholders with more than 10% of equity (Section 16 (a) of the Securities Exchange Act of 1934)
Short swing profits prohibition	No	Yes (Section 16 (b) of the Securities Exchange Act of 1934)
Close periods	Yes (Model Code)	No
Disclosure period	Up to 4 days (DTR 3)	Up to 2 days (Section 16 (a) of the Securities Exchange Act of 1934, after the amendment of SOX section 403)
Penalties	7 years of imprisonment and unlimited fine (Criminal Justice Act 1993)	20 years of imprisonment, up to \$5million fine for individuals and up to \$25 million for corporations (Section 32 (a), Securities Act of 1934)

This table reports the main differences between the UK and the US insider trading legislations. The differences are up to 2015. For the construction of the table I use legislation and regulatory handbooks provided by the LSE and the SEC websites. Close period is a rule that prohibits insider trading 60 days prior to yearly and interim earnings announcements and 30 days prior to quarterly results. Short swing profits is a rule that prohibits profits that are realised by insiders in their own company's stocks in a period shorter than six months.

The main differences are the following: First, on the definition of the insider. According to section 16 (a) of the Securities Exchange Act of 1934 in the US insiders are considered to be the officers, directors, shareholders with more than 10% equity and key employees while according section 96b of FSMA in the UK to are considered to be only the directors, executives and any individual that has the power to make managerial decisions (PDMRs). Second, on the notification period on which insiders must report their trades. According to section 16 (a) of the Securities Exchange Act of 1934 in the US the insiders must report their trades to the SEC within up to 2 business days⁶² while under the DTR 3 in the UK the insiders must report their trades to the LSE within 4 days. Third, the US prohibits short-swing profits⁶³ generated by corporate insiders in their own firm's stock (Section 16 (b) of the Securities Exchange Act of 1934) while in the UK there is no legislation with regards to short swing profits. Fourth, in the UK applies the close periods (see section 3.5.1) while in the US there is not such restriction.

Finally, and probably the most important difference, is in the level of insider laws enforcement. Under the section 32 (a) of the Securities Act of 1934, the penalties for engaging in illegal insider trading in the US are up to 20 years of imprisonment and/or fine up to \$5 million for individuals and up to \$25 million for corporations. According to the Criminal Justice Act of 1993, in the UK the penalties are 7 years of imprisonment and unlimited fine. In addition, the SEC has filed 1501 enforcement actions with regards to market abusive activities for the last 3 years (SEC enforcement results, 2015-2017) while the amount of FCA penalties imposed for the same period is 92 (FCA enforcement statistics, 2015-2017). Hence, both the penalties and enforcement in the US are stricter compared to the ones in the UK which could make it easier for the UK corporate insiders to indulge in illegal profit temptations.

⁶² Prior to 2002 the disclosure period was up to 40 days, that is within 10 days of the month following the month of the execution of the trade (Persons, 1997; Fidrmuc et al., 2006). However, the section 413 of the Sarbanes-Oxley Act (SOX) of 2002 amended the section 16 (a) of the Securities Exchange Act of 1934 requiring insiders to report their trades within two business days.

⁶³ Short-swing profits are the profits that are realised in a period shorter than six months.

Appendix 3: Examples of market switching announcements and their reasons for the switch

Some examples of market switching announcements are presented below:

1) Macau Property Opportunities Fund Limited (moving from the AIM to the MM)

Macau Property Opportunities Fund Limited is pleased to announce that it intends to seek a Premium Listing of its ordinary shares on the Official List of the UK Listing Authority and admission to trading on the London Stock Exchange plc's Main Market for listed securities ("Admission"). It is expected that Admission will occur during the second quarter of 2010. Collins Stewart Europe Limited will be acting as Sole Sponsor and Broker to the listing. The Board believes that a Premium Listing will bring about a number of potential benefits including greater share liquidity, enhanced market profile and a wider shareholder base, and will also offer the most appropriate platform for the continued development of the Company. In the longer term, there is also the added potential for the Company to enjoy the benefit of eligibility for inclusion in the FTSE AllShare Index. Further details of the Admission proposal, including the expected timetable, will be announced in due course. It is expected that a general meeting of the Company will be convened in order to seek shareholder approval for the Admission proposal, including the making of certain amendments to the Company's articles of association.

2) Havelock Europa plc (moving from the MM to the AIM)

The Company today announces its intention to seek the cancellation of the listing of its Ordinary Shares on the Official List and to apply for its Ordinary Shares to be admitted to trading on AIM. The Board believes that AIM is a more appropriate market for a company of Havelock's size and resources and that a transfer of the Ordinary Shares to trading on AIM should lead to lower ongoing costs associated with being a publicly quoted company and a simplification of the Company's administrative and regulatory requirements. The Board also believes that AIM will offer greater flexibility, particularly with regard to corporate transactions, and should therefore enable the Company to agree and execute certain transactions more quickly, if acquisitions or other opportunities arise in the future. The Board envisages no material alteration in the standards of reporting and governance which the Company maintains. The Company will today post a circular to its shareholders containing details of the Proposals. The circular explains the background to and reasons for the Proposals and contains a notice convening a General Meeting of shareholders to be held at the Company's offices at ... on 1 July 2010, at which approval for the Proposals will be

sought. The last day of dealings in the Company's Ordinary Shares on the main market of the London Stock Exchange is expected to be 29 July 2010. The anticipated date of cancellation of the listing of the Company's Ordinary Shares on the Official List is on or around 8.00 a.m. on 30 July 2010, being not less than 20 business days following the expected date of approval of the Proposals by the Company's shareholders as required by the Listing Rules. Admission of the Ordinary Shares to AIM and commencement of dealings in the Ordinary Shares on AIM is expected to occur simultaneously with such cancellation, on or around 8.00 a.m. on 30 July 2010.

Appendix 4: Examples of rumours and other major corporate announcements

Some examples of rumours prior to the official announcement of the market switches are presented below:

- 1) Genus PLC rumours about their move to the MM on 8th of June 2006 in FT.

The performance of its collection of prize bulls and boars helped Genus, the global animal genetics company to lift operating profit from £10.9m to £18.3 in the year to March. However, after exceptional changes – including goodwill amortisation on the acquisition last year of the much bigger Sygen International- pre-tax profit fell from £8.1m to £1.1m.... The company is also expected to move up from the AIM to the Official List.

- 2) Minorplanet Systems rumours on their move to the MM on 12th of November 2001 in Sunday Telegraph hand collected through Nexis database.

Shares in Minorplanet Systems, the supplier of satellite based systems, have almost halved this year falling as low as 172.5p in late September. The company is predicting a doubling in sales in the UK and mainland Europe next year to about 80m. It is expected to announce a move from the AIM to the Main Market in the next few weeks, which should help increase demand for shares. Buy.

In addition, below are presented some examples of other major corporate announcements along with the market switches. Note that only the parts of interest of the announcements are presented.

- 1) Mithril Capital PLC, now known as Be Heard Group PLC, announcement of acquisition of Agenda 21 Digital Holding Limited along with the announcement of the move to the AIM on 12th of October 2015:

Mithril Capital PLC (LSE: MITH) announces that it has conditionally agreed to acquire the entire issued share capital of digital media agency Agenda 21 Digital Holding Limited (“Agenda 21”) (the “Acquisition”) in a reverse takeover. The company has requested an immediate suspension of trading in its shares and intends to cancel its listing on the Official List and seek re-admission of the Company’s shares to trading on AIM in due course.

- 2) Dominion Energy PLC announcement of acquisition of Startup Station business and of the move to the AIM on 31st of March 2000:

The Company has agreed to acquire the business of Startup Station for a cash consideration of £346,000 from Startup Holdings Limited.... The company has requested cancellation of its current listing on the Official List of the London Stock Exchange and has applied for its shares to be traded on AIM. Dealings are expected to commence following the EGM. The Directors believe that there are certain advantages to the admission to AIM. Companies quoted on AIM are deemed to be unlisted for the purposes of various areas of taxation law, and certain shareholders of such companies are able to enjoy various reliefs associated with, and investment in, certain qualifying unlisted companies, of which the Directors anticipate the Company will be one. In addition, AIM provides greater flexibility in issuing shares to fund future development.

Appendix 5: Initial list of Nominated Advisers used for the reputation measurement

Albert E. Sharp Securities	Cairn Financial Advisers LLP	Deutsche Bank AG London
Allenby Capital LTD	Canaccord Genuity LTD	Dolmen Securities LTD
Altium Capital LTD	Cantor Fitzgerald Europe	Dowgate Capital Advisers LTD
Ambrian Partners LTD	Capital Ventures PLC	Dresdner Kleinwort
Apax Partners & Co	Cazenove & Co	Dresdner Kleinwort Benson
Arbuthnot Securities LTD	CCF Charterhouse Corporate	Durlacher LTD
Arden Partners LTD	Cenkos Securities PLC	English Trust Co. LTD
ARM Corporate Finance LTD	Charles Stanley Securities	Ermgassen & Co LTD
Arthur Andersen	Charterhouse Securities	Ernst & Young LLP
Barclays de Zoete Wedd LTD	Citigroup Global Markets UK Equity LTD	Evolution Securities LTD
Beaumont Cornish LTD	City Financial Associates LTD	Fairfax I.S. LTD
Beeson Gregory LTD	Close Brothers Corporate Finance LTD	finnCap LTD
Bell Lawrie White & Co	Coopers & Lybrand Corporate Finance	Fox-Davies Capital LTD
Blomfield Corporate Finance LTD	Corporate Synergy PLC	Fox-Pitt, Kelton LTD
BOFA Merrill Lynch	Credit Lyonnais Securities	Gerrand Vivian Gray LTD
Brewin Dolphin Securities LTD	Credit Suisse Securities (Europe) LTD	Goodbody Corporate Finance LTD
Bridgewell LTD	Daniel Stewart & Company PLC	Grant Thornton UK LLP
British Linen Bank (The)	Davy Corporation	Granville Baird LTD
Brown Shipley & Co LTD	Dawnay, Day Corporate Finance LTD	Granville Davies
Butterfield Securities	Deloitte & Touche LLP	Greig Middleton & Co. LTD

Guinness Mahon & Co LTD	John East & Partners LTD	Nabarro Wells & Co. LTD
Hanson Westhouse LLP	Johnson Fry Securities	NCB Stockbrokers LTD
Hawkpoint Partners LTD	JPMorgan Cazenove LTD	Neill Clerk Capital LTD
HB – Corporate	Kaupthing Singer & Friedlander	NM Rothschild & Sons LTD
Henderson Crosthwaite Corporate Finance	KBC Peel Hunt LTD	Noble & Company LTD
Henry Ansbacher & Co LTD	Kennedy Gee Corporate Finance	Nomura Code Securities LTD
Henry Cooke Corporate Finance	KPMG LLP	Northland Capital Partners LTD
Hichens Harrison and Co	Landsbanki Securities (UK) LTD	Nplus1 Singer Advisory LLP
Hoare Govett LTD	Lazard & Co. LTD	Numerica Capital Markets LTD
HSBC Investment Bank	Lazard Asset Management	Numis Securities LTD
ING Bank N.V.	Lehman Brothers Europe LTD	Old Mutual Securities
Insinger de Beaufort	Libertas Capital Corporate Finance LTD	Old Park Lane Capital PLC
Insinger Townsley	Liberum Capital LTD	Oriel Securities LTD
Investec Bank (UK) LTD	Macquarie Capital (Europe) LTD	Panmure Gordon (UK) LTD
Investec Henderson Crosthwaite	Marshall Securities LTD	Pelham Bell Pottinger
J Henry Schroder & Co LTD	Matrix Corporate Capital LTD	Piper Jaffray LTD
J M Finn & Co	Merchant John East Securities	PricewaterhouseCoopers LLP
J&E Davy	Merchant Securities LTD	Raphael Zorn Hemsley LTD
Jefferies International LTD	Merrill Lynch International	Rathbone Neilson Cobbold
JM Finn Capital Markets LTD	Morgan Stanley & Co International LTD	RBC Capital Markets

RBC Europe LTD	Ruegg & Co LTD	SVS Securities
RBS Hoare Govett LTD	Sanlam Securities UK LTD	Teather & Greenwood LTD
Rea Brothers LTD	SBC Warburg Dillon Read	Townsley & Co
Religare Capital Markets (UK)	Seymour Pierce LTD	UBS Investment Bank LTD
Renaissance Capital LTD	SG Securities (London) LTD	USB LTD
RFC Ambrian Group LTD	Shore Capital & Corporate LTD	W.H. Ireland LTD
RFC Corporate Finance LTD	Singer Capital Markets LTD	Westhouse Securities LTD
Robert Fleming & Co. LTD	Smith & Williamson Corporate Finance LTD	WestLB AG
Robert W. Baird LTD	Societe Generale Strauss Turnbull	WestLB Panmure LTD
Rowan Dartington & Co LTD	Solomon Hare LLP	William de Broe PLC
Royal Bank of Canada Europe LTD	SP Angel Corporate Finance LLP	ZAI Corporate Finance LTD
RP&C International LTD	SPARK Advisory Partners	Zeus Capital LTD
RSM Robson Rhodes Corporate Finance	Strand Partners LTD	

This table provides the initial list of Nomads used for the construction of the reputable Nomad composite variable in alphabetical order. Since Nomads may change name during their life-time, the list reports only the last name of the Nomads. The data are retrieved for the “*New issues and IPO summary*” spreadsheet provided by the LSE website. Any missing data are hand collected using the annual reports of the AIM firms which were downloaded through the Perfect Information database.