
The Alternative Investment Market and the Financing of Technological Innovation

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The Alternative Investment Market (AIM) is characterized by the presence of numerous firms operating in sectors with a high rate of technological innovation. In this research we will deal with IPOs about companies active in the sector of Information Technology and Software & Computer Services. The purpose of the research is testing the market’s ability to attract the listing of new companies in these sectors and to examine the following questions:

1) Have the IPOs about economic sectors examined a concentration in specific periods?

2) Have firms’ average size, the average capital raised on the market and the share of capital on average placed with the initial offer, at the time of listing, changed during the analysed periods?

We consider three periods. The first, from the birth of the market (1995) until the speculative bubble (2001), which follows the so-called dot.com boom. The second, from 2002 to 2007, beginning of the severe economic and financial crisis, and the third from 2008 until June 2013.

Keywords: *IPO, AIM, Intangible assets, Dot-com boom, Internet company.*

Introduction

The Alternative Investment Market (AIM) was established in 1995 by the London Stock Exchange (LSE) and it has become the main stock market in the world for enterprises of average size after a few years. This market has

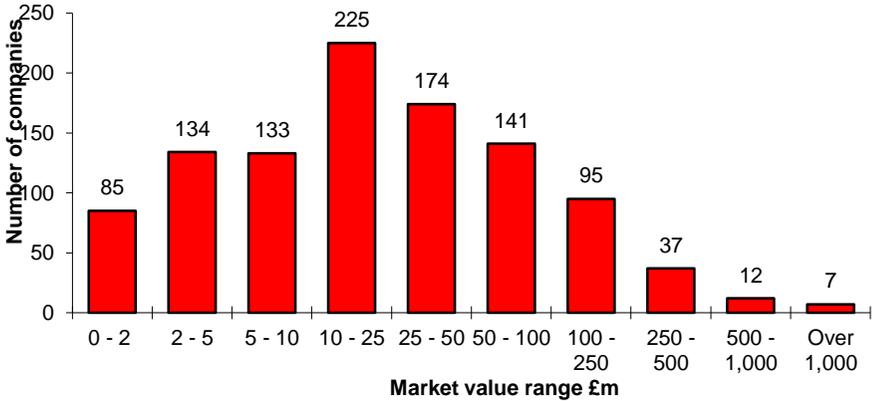
low barriers to entry because of the few formal requirements for admission, the cost of access and permanence quite content and the relative simplicity of the procedure of listing. However, the level of regulation of this market is quite high, in order to safeguard the transparency of negotiations and to provide an adequate protection to investors. Listed companies are subject to the rules of corporate governance and they must communicate to the public the “price-sensitive” information. In addition, their Financial Statements must be compiled in accordance with international accounting standards (IFRS).

The relative simplicity of the process of admission to listing depends on the verification of the quality of the company to be admitted to the market, which is entrusted to a securities intermediary, the Nominated Advisor (Nomad), who assumes the risk of image and reputation against the financial community. Minimum requirements, like a minimum capitalization, free floating and a positive track record, are not necessary to be listed. An important function of the Nomad is to assist and advice the companies, collaborating with them for the respect of the obligations, established by the regulation of the market, after the listing too. The company must also appoint a Nominated Broker, an intermediary that takes care of the placement stage of the securities and helps the creation of liquidity in the secondary market, through market making activities on securities of the company. Moreover, he has to publish equity research about the company, thereby contributing to create an additional source of information that reduces information asymmetries between the issuing company and the current and potential investors.

The asymmetric distribution of the information is also a problem for main markets, but it has a bigger importance for small and medium-sized enterprise equity markets. The reasons for this depend on different conditions, among which the minor notoriety of the companies entering the market and the smaller presence, compared to larger companies, of a disclosure of the indirect type, represented by the articles that appear on the specialist press and the reports of the financial analysts.

The organizational structure of the London market gives too much importance to the professionalism and integrity of brokers who work on it, without the presence of excessive formalities that might discourage the listing of medium-sized companies.

Table 1: Distribution of companies by equity market value



Source: web site of London Stock Exchange

The table no.1 shows that listed companies were 1086 in June 2013. Most of the listed companies had a market value between 10 and 100 million pounds. These figures confirmed the peculiar feature of this stock market that is aimed at medium-sized companies. It is shown that 352 companies had a market capitalization less than or equal to 10 million pounds, while companies with a market capitalization greater than 500 million pounds were only 19. The total market capitalization was around 68 billion pounds.

Table 2: Companies listed

Equities	Number of companies	Market capitalisation (£m)
Oil & Gas	131	13,750
Basic Materials	177	6,091
Industrials	194	7,988
Consumer Goods	62	4,458

Health Care	66	4,019
Consumer Services	102	8,692
Telecommunications	12	1,538
Utilities	15	831
Financials	219	13,280
Technology	108	7,037
Total	1,086	67,684

Source: Our elaboration from web site of London Stock Exchange

The sectorial composition of listed companies is very diverse, although the main areas for both the number of companies and market capitalization are the financial, commodity, and energy sector. The technology industry has a considerable presence in AIM and this confirms the importance of equity markets aimed at medium-sized companies as important channels of financing innovation.

Technological innovation, both production processes, products and/or services obtained, is found in almost all business activities. It is faster, and source of competitive advantage in specific economic sectors, such as, computer science, “health care”, utilities, telecommunications, biotechnology, Internet Company, etc.. In this paper we focus on the technology sector, which, according to the classification adopted by the London Stock Exchange, includes companies that operate in the field of Information Technology and Software & Computer Services. In these economic sectors the competitive advantages of the company are based on a very rapid technological innovation through massive investments in intangible assets. For this reason, incisive marketing policies are often made to bring products and services into the market, in most cases aimed at niche markets. We will examine IPOs related to companies operating in these areas, from the creation of AIM until June 2013.

We decided to divide this period into three periods. The first, from the creation of the market until the end of 2001, the year of the drastic fall in prices after the bubble of high-tech stocks. The second period extends from 2002 to the beginning of the severe economic and financial crisis (2007), whose effects are still being felt today. The third period analyzed extends from 2008 through June 2013.

The research aims to answer the following questions:

a) Have the IPOs about economic sectors examined a concentration on specific periods?

b) Have firms' average size, the average capital raised on the market and the share of capital on average placed with the initial offer, at the time of listing, changed during the analyzed periods?

Economic literature reference

The difficulties in obtaining finance for firms operating in sectors with a high rate of technological innovation and new constitution, is due to special circumstances extensively investigated by the doctrine. First of all, they have a high incidence of intangible assets which, for credit intermediaries, do not constitute adequate security in the event of financial failure of the enterprise.

Their track record is too short and, with reference to the Internet Company listed on U.S. stock markets during the period of the "dot-com boom", the operating cash flows and, sometimes, the net capital, were negative (A.J. Leone, and others, 2012).

There is a high difficulty in determining the value of the company due to the considerable complexity in determining their future cash flows. In addition, the reporting models used by financial analysts, in the 90s, were better suited to evaluate companies operating in traditional business (N. Bhattacharya and others, 2010).

The initial equity allocation of a startup is usually made by the founder of the company or people close to him, the so-called Family & Friends financing. In many cases, the birth of these business initiatives is assisted by incubators that facilitate startup. Sometimes, there is informal investors' involvement (also known as a Business Angels) in equity. Almost always it is investors who have managerial skills in the field or in related business. They see satisfactory opportunities of profit in projects that have, in many cases, high risk of failure. When financial needs become more consistent and the prospects of success of business less random, it is frequently the intervention of specialized institutional investors in the purchase of the minority shares of the company, the "venture capital companies", with the aim to hold them for medium-long periods, usually 3-5 years. In addition to supply of financial resources, these investors play an important role as a financial and strategic advice, bringing the subsidiary

company to the attention of the business community and inserting it in a network of relationships that facilitate arrangements for the production and distribution of goods and services produced.

This circumstance is particularly important because although the founders of these companies often have excellent scientific and/or technological skills, they do not have an entrepreneurial or managerial skills. When Venture Capital companies make investments, the doctrine has highlighted (Casamatta, 2003) as the acquisition of equity in stages is preferable in order to reduce the risk for the investors. The decision of a company to go public, not only has an effect on the composition of funding sources, but has consequences on corporate governance and makes it necessary to adapt organizational structures to communicate to a wider audience of stakeholders. The greater information transparency, the obligations that a listed company will have to follow and the potential conflicts of interest between the new and the old shareholders, are often an obstacle to "going public decision," particularly for small and medium companies. The listing on stock market improves the image of company towards stakeholders and gives it greater visibility, even at international level. In this way, corporate finance transactions, such as mergers and acquisitions, and operational synergies with other businesses can be facilitated.

The doctrine (Yosha, 1995), examined the relationship between the degree of technological innovation of enterprises and their aptitude to go public. According to this survey, firms characterized by a high degree of technological innovation, addressing the equity markets, will have to provide more extensive and complete information which could create advantages for competitors. Therefore, only if this risk is offset by adequate benefits, the company will opt for access to the stock market. The choice of funding sources can also have an indicative value based on the type of confidential information known by insiders, among which we highlight the firm's managerial staff, researchers and shareholders who own substantial shareholdings. An authoritative doctrine (Leland & Pyle, 1977) has long highlighted, through empirical analysis, as the equity share held by the original shareholders, during the placement of the securities to the public, might be a "signal" about the expected profitability of corporate investments for the stock market. The maintenance of a higher stake by shareholders at the moment of the placement of the securities is generally associated with a

greater confidence in the future prospects of the company by the same subjects. It is important to remember that it is a general consideration, for this reason it cannot be used for individual cases or not sufficiently large and representative samples. There is one other thing we should not forget, the opportunistic behavior by controlling shareholders, who are aiming to listing the firm after strong gains in the equity markets. A research (J. Coakley and others, 2007), found that the IPOs of innovative enterprises carried out in the U.S. market during the "Hot Market", led to the listing of low-quality firms, which then showed a high risk of failure. A study of firms operating in innovative sectors, even if it is specifically based on the biotechnology firms with shares held by venture capital firm (Lerner, 1994), established that there is a very high probability to resort to the stock market when the current level of prices is high. The concentration of share placements in periods of high levels of market indices is common for companies active in other sectors of the economy, and has been widely discussed in various studies. Among many studies, there is an important research (M Lowry, 2003) about IPOs carried out in the U.S. equity markets, between 1960 and 1996. This phenomenon has been empirically verified with reference to the equity markets of countries that have had significant economic growth over the last decade, like China, India, Brazil and South Africa (Bellonia A. and others, 2013). The remarkable growth of the market prices of the shares occurred until 2000 in the U.S. equity markets, could be explained by the behavioral finance and excessive expectations by investors about the prospects for future growth and profitability of companies active in this sector. A study (M. Cooper, 2001), shows how the only change of a company name, by introducing the words "dotcom", "dotnet" or "internet", has led to significant revaluations of the same. An authoritative doctrine (Akerlof, 1970) has highlighted the risk of inefficient resource allocation implemented by the equity markets. Companies characterized by attractive growth prospects and the best return/risk, not recognized by the market as a result of information asymmetries, would not be listed, since the control group would not be able to get a fair price for the securities to distributed. This might be a problem of adverse selection, leading to a listing of companies of characterized by lesser quality or for which the IPO's price is inconsistent with the outlook of the return/risk of the enterprise. Other scholars (Ritter, 1997), focused on analysis of the high fixed costs that the process of listing in regulated markets entails. These costs represent one of

the major drawbacks to the "going public decision," which would exclude from the market smaller companies, because they would have a too high cost impact, in relation to the capital raised, too high. In this regard can be shown that just a securities market specifically dedicated to medium-sized companies, where these costs are relatively low, can concretely encourage the listing of the same.

Data Analysis

The data used for the research derive mainly from the website of the London Stock Exchange, from the statistics section we downloaded the excel file "New Issue and IPO Summary". From the same site we downloaded other data about AIM. We detected Index values Nasdaq100 at the end of each year from the site "yahoo finance". We proceeded then processing them, first we used the search filters of the same file and then we worked with them in another spreadsheet to perform the processing useful for this work. Reference was made both descriptive statistics and studies of correlation between variables, in order to test the research hypotheses examined.

In the first four years of life of AIM, until 1998, there was not any listing of companies operating in the Technology sector. In the U.S., during the same period, the index NASDAQ100, which shows the trend in the prices of companies operating in the innovative sectors of the economy, raised by 250%. The index reached its peak in March 27, 2000 with a closing at 4,705 points, and even higher values during trading. The listed companies in the london market, active in this sector, were 10 in 1999, and other 37 were listed in 2000. The World Wide Web made its appearance in 1993, but only a few people had access. It ended up to be a mass phenomenon, in the second half of the 90s. Before its advent, personal computers for home use were used mainly for word processing, for video games and a few other applications. The birth of the Internet encouraged business startup active online, like E * Trade.com, Amazon.com who created innovative forms of business with huge value creation for shareholders. Instead, in many other cases, the growth of quotations was not supported by appropriate developments of these new businesses, which went bankrupt or presented levels of risk / return not adapted to the levels of prices achieved. The suffix "com", frequently indicated in the naming of these companies, has consequently meant a big increase in share prices as the "dot.com boom". The speculative

bubble of the securities hi-tech, according to one of the greatest stock traders of all time (G. Soros, 2012), some peculiarity compared to other speculative bubbles. Indeed, it was not stimulated by excessive credit expansion and leverage. Of the 176 companies listed subject to IPO since they were born on this new market, 108 are still listed.

Table 3: IPOs

Years	Number of Companies listed	Market Value	Capital Raised	Nasdaq100	Return % from 1995
millions of £					
1995	0	0	0	592	
1996	0	0	0	922	55.74%
1997	0	0	0	1,071	80.91%
1998	0	0	0	2,127	259.29%
1999	10	230.74	110.33	3,570	503.04%
2000	37	1,090.52	303.15	2,593	338.01%
2001	9	84.02	20.74	1,550	161.82%
2002	5	52.49	13.09	983	66.05%
2003	4	54.83	17.77	1,493	152.20%
2004	30	858.61	336.65	1,520	156.76%
2005	37	1,191.33	405.98	1,711	189.02%
2006	20	868.96	258.63	1,792	202.70%
2007	11	498.91	113.05	1,841	210.98%
2008	0	0	0	1,180	99.32%
2009	1	2.97	1.19	1,741	194.09%
2010	3	245.58	87.15	2,282	285.47%
2011	1	28.96	15.36	2,468	316.89%
2012	4	159.30	44.13	2,732	361.49%
2013	4	62.70	14.92	2,933	395.44%
(six month)					

Total	176	5,429.91	1,742.14
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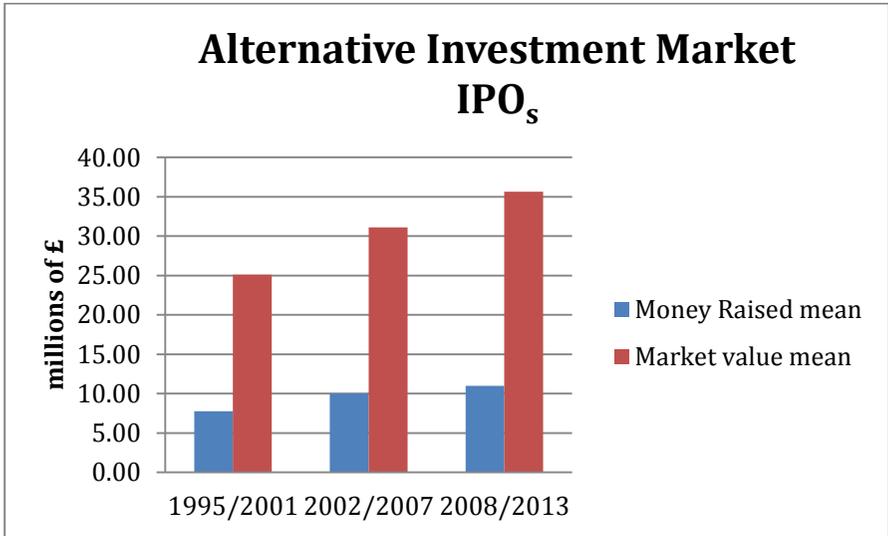
Source: our elaboration

Examination of the table below, in the three periods in which we have divided our analysis, it is clearly visible a progressive increase of the raised capital through placements of equity for each firm and their average market capitalization at the time of listing. Decreases, however, the average equity portion placed by existing shareholders before the IPO. This may have caused less use of "windows of opportunity" by the control group or those shareholders who owned shares of qualified minority and they deemed appropriate to liquidate, in whole or in part, with the listing of the company. It should be noted that in the third period examined the average level of market indices declined drastically during 2008, due to the economic and financial crisis began in 2007. In subsequent years, there has been a significant recovery in the U.S. stock market and an increase in placements regarding to the amount of capital raised.

Table 4: Average values in millions of pounds

	1995/2001	2002/2007	2008/2013
Average money raised	7.75	10.02	10.97
Average market value	25.09	31.13	35.65
Money Raised/Market value (average)	32.03%	31.89%	27.32%

Source: Our elaboration



We conducted an analysis of the correlation between the performance of the Nasdaq100 and some parameters concerning the IPOs examined. The reason why I chose as reference the index of the U.S. stock market is the fact that in the U.S., especially in Silicon Valley, these businesses were originally developed. We therefore considered more important to relate the market price with a parameter that, was more representative of a global phenomenon. It is important to note that the index Nasdaq100 summarizes the stock market performance of the innovative sectors of the economy, and it must be understood in a broad sense, so it includes not only the companies working in the computer industry. The analysis focused on the correlation between the performance of Nasdaq100 and the number of listed firms in each year, their market value and the capital raised in the primary market through the initial placement.

The research shows a significant and positive correlation between the following variables:

- X2: Performance of the market in one year
- X3: Performance of the market in two years
- Y4: Number of listed companies
- Y5: The average market capitalization at the time of listing
- Y6: Capital collected through initial placement on average

The data relating to the variable “Y” refer to the following year (n +1). The reason why I examined the correlation with data relating to the year (n +1), arises from the fact that between the decision to list a company and the concrete realization of the operation, generally there is a time interval of several months. Consequently, the going public decision of a company could only be made in the following year. The data suggest that there is a non-significant positive correlation with the returns generated by the market during the previous three years of the listing.

Table 5: Correlation analysis

	Return % to 1995 X_1	Return to one year X_2	Return to two years X_3	Return to three years X_4
New Companies listed (Y_1)	-0,011	-0,176	+0,090	+0,267
Market value (Y_2)	-0,002	-0,117	+0,121	+0,254
Capital raised (Y_3)	+0,002	-0,044	+0,205	+0,278
New Companies listed (n+1) (Y_4)	+0,211	+0,370	+0,491	+0,287
Market value (n+1) (Y_5)	+0,141	+0,390	+0,447	+0,223
Capital raised (n+1) (Y_6)	+0,058	+0,429	+0,399	+0,167

Source: our elaboration

These correlation values show a concentration of IPOs in the years after periods characterised by large price gains. If we analyse the table n. 3, it is clearly demonstrated that these years are 2000 and the period from 2004 to 2007. A significant part of the listing of new companies to be exact 98, takes place in these four years. This value represents 55.68% of new businesses admitted to the market compared to the total placements. The

previous considerations show that the AIM had the ability to attract the listing of new businesses beyond the stage of "dot.com boom". This might depend on the microstructure organization of the market, through the presence of securities firms that reduce information asymmetries between issuers and investors. Additionally, the market position in the city of London is pretty significant, which offers international visibility to listed companies and the presence of institutional investors specializing in the selection and monitoring of investments in companies that belong to this size class.

Table 6: IPO for Market Value

Year	Total	<=5 m.£	>5<10	>10<50	>50
1995					
1996					
1997					
1998					
1999	10	1	0	8	1
2000	37	2	3	25	7
2001	9	4	3	2	0
2002	5	0	4	1	0
2003	4	1	0	3	0
2004	30	3	6	16	5
2005	37	3	5	24	5
2006	20	1	5	10	4
2007	11	1	2	5	3
2008	0	0	0	0	0
2009	1	1			
2010	3	0	0	1	2
2011	1	0	0	1	0
2012	4	0	0	3	1
2013	4	0	0	4	0

Totale	176	17	28	103	28
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Source: Our elaboration from London Stock Exchange web site

As can be seen from the previous table, the majority of listed companies had a market capitalization, at the time of its admission to listing, between 10 and 50 m. £. It is noted the presence of 17 companies characterized by a market value of less than 5 m. £ at the time of listing. Such search results, in the writer’s opinion, confirm the ability of this market to attract the listing of companies with small dimensions but with high growth potential. Finally, it is important to emphasize that does not fall within the scope of this report to examine property, economic and financial data that follow the listing or other variables like the rate of sales growth, or investment and the performance of these securities in terms of return realized by investors. In my opinion, it might be an interesting research topic to examine in future studies.

Conclusions

Our analysis shows that there are seasonal trends in the timing of share placements. They are not particularly accentuated and, moreover, they happen with the same intensity as firms active in traditional sectors of the economy. The concentration of a great proportion of the equity placements in the period 2004-2007 demonstrates the market’s capabilities to attract the listing of new companies beyond the period of the so called "dot.com boom". The average size of the companies at the time of their admission to the market and the average capital raised through the initial placement of securities with investors, are gradually increased over the three periods. It should be noted that the majority of listed companies had a market value between 50 and 100 million pounds. It should be noted, however, a decrease in the share of capital on average placed on the market at the time of the IPO. These results show the ability of AIM to attract the listing of companies in the areas of Information Technology and Software & Computer Services. In the writer’s opinion, this all depends on the microstructure organizational of this stock market, adapted to medium-sized companies and the favorable geographical location in the city of London. In this context, there are securities firms that offer financial services particularly qualified and

institutional investors specializing in investments in companies belonging to this size bracket. The AIM also provides international exposure to listed companies and improves the manner in which a company is perceived by stakeholders. For all these reasons, the several attempts to reproduce its organizational structure in other contexts, have not led to the expected results to date.

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