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## An essay on the emergence, organization and performance of financial markets: The case of the alternative investment market

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# LEM

## Working Paper Series

**An Essay on the Emergence, Organization and Performance of  
Financial Markets: the case of the Alternative Investment Market**

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# An Essay on the Emergence, Organization and Performance of Financial Markets: the case of the Alternative Investment Market

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## 1. Introduction

Public equity represents a much desired, yet hardly attainable stage in the financial policy of technology-based small firms (TBSFs). The reasons are fairly clear: TBSFs enjoy rich endowments of intangible assets but lack “hard” and collateralizable assets, their track record is short, and their likelihood of survival is relatively low. The products and services offered by TBSFs largely depend on the application of scientific and technological knowledge (Allen 1992), and their founders, who often have educational backgrounds in science or technology, suffer from limited financial and marketing expertise. Partly to avoid the implied liquidity and valuation difficulties, stock exchanges usually set listing requirements in terms of minimal capitalization, profitability, free float and track record thresholds. TBSFs can rarely satisfy these conditions.

And yet, market-based financial support to TBSFs has been high on the policy agendas for the last thirty years, especially in the European Union, and market segments catering to small, young, high-tech companies have been inaugurated by virtually all European stock exchanges (Bottazzi and Da Rin 2005). The apparently paradoxical attention accorded to floating companies with low survival rates stimulates reflections on the forces behind the emergence of new markets, the interests that shape their architectures, the social desirability of their performances, and ultimately on the very role of financial markets as drivers and facilitators of innovative efforts – such as those carried out by TBSFs.

This work provides an overview of the historical evolution, the organizational forms, and the performances of the stock exchanges and market segments specialized in public equity for small and growing companies, set up in Europe in the last thirty years. Our analysis mainly deals with the Alternative Investment Market (AIM), created by the London Stock Exchange (LSE) in 1995, but our discussion involves, in passing, also the “feeder” markets established in the 1970s and 1980s, as well as

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the "New Markets" created in the 1990s. In our view, the case under study tells a lot about four issues that are of key importance for market-based financial support to TBSFs.

First of all, let us consider the role of private and public interests in market emergence. Facilitating the flotation of small and growing firms can be seen as a way to solve a market incompleteness problem that drives the economy away from Pareto optimality. This is consistent with the increasing reliance on incentive design as a key tool to achieve public goals, or with the "marketization" of public policy (Cerny 1992) that is driving the European varieties of capitalism closer to the American one (Hall and Soskice 2001). Public intervention then becomes the necessary trigger for private activity. For instance, in light of the complementarity between stock markets and venture capital (VC) funds, policy-makers may have promoted the emergence of stock markets for growing companies as a way to enlarge the exit opportunities for VC investments. This would be in line with previous evidence showing that, in setting the stage for an active private equity industry, the involvement of public bodies was essential, both in the US (Lerner 1996) and in Europe (see the evidence confirming the "seeding hypothesis" by public VC: Leleux and Surlemont 2003, Beuselinck and Manigart 2007).

Second issue: what shapes the market organizational forms, or, what lies behind the choice of a certain market architecture? With respect to stock markets for growing companies, key architectural parameters concern the admission requirements, the level of information disclosure, and the allocation of regulatory responsibilities. Light regulatory settings can run counter the monopoly positions of national stock exchanges on order flow, and can harm their liquidity if too many risky companies are allowed to go public. However, setting the entry and information requirements too high may discourage participation by TBSFs altogether, against the public goal of providing market-based financial support to new innovative ventures. How to solve this trade-off is an issue needing discussion.

A third issue concerns the macroeconomic consequences of stock market regulation. One of the lessons that we have learned from the most recent recessions is that global financial stability crucially relies on careful regulatory oversight on the financial system. Such a lesson has been translated by policy-makers into tighter requirements for financial disclosure on public companies and intermediaries (e.g. the Sarbanes-Oxley Act of 2002) and stricter capital requirements on banks (as with the Basel II Accords). However, stock market segments for growing companies create opportunities for regulatory arbitrage, therefore leaving the global financial system exceedingly open to unsuitable companies, financial fads, and even to cash shells. The entailed risks are even more likely to materialize if regulatory oversight is outsourced to financial intermediaries, possibly due to conflicts of interest. At the same time, in countries with a highly skewed firm size distribution, such as Italy, facilitating the access of small firms to public equity is seen as a way out of the macroeconomic recession (see Cardia 2010).

A fourth and last issue of interest involves the balance between social costs and benefits of

market-based financial support to TBSFs. Is the quotation of TBSFs worth the public and social costs associated with their large failure rates? Santarelli and Vivarelli (2002) asked a similar question about subsidies to new entrants, and their answer was that subsidizing entry might distort the learning processes that drive the dynamics of start-ups, and may corrode the market shares of the most efficient firms, while the positive effects are likely to vanish once the subsidy expires. All of this would result in a waste of resources. One wonders whether the same holds when financial support is provided through financial markets. Furthermore, it has been observed that architectural choices often rely on the imitation of the organizational features of foreign markets – as it is the case with European stock exchanges “copying” the Nasdaq. Yet, it is increasingly suggested that the evolution of financial systems is constrained by path dependencies, involving inertia in household saving patterns, investment behaviors, corporate ownership structures, industrial relations, welfare systems, education, and the organization of research activities (Bianco et al. 1997; Bebhuk and Roe 1999; Hözl 2006; Vitols 2005). If so, different countries have little to learn from each other’s experiences, and imitative architectural choices can impose heavy social costs if the complementary institutions (in the sense of Aoki 2001) have not adapted.

For the above mentioned reasons, it is worthwhile reviewing the main facts on the performance of high-tech stock markets, and of AIM in particular. Section 2 outlines the historical evolution of the second-tier markets for growing companies, while Section 3 illustrates some taxonomies proposed in the literature, with the aim of uncovering insights on the determinants of market architecture. The existing empirical evidence on the performance of AIM is reviewed in Section 3. Section 4 concludes.

## **2. A historical outline**

Within the European context, the earliest attempts to set up second-tier markets for growing firms date back to the late 1970s and the early 1980s. The pioneering markets for TBSFs were based on the so-called feeder principle: their function was to select the most profitable young companies and feed them upward to the main markets. The quotation of TBSFs was favoured by low admission requirements and low information standards. Posner (2004, p.6) reports an exhaustive list of the stock markets based on the feeder principle. Those early experiences were unsuccessful: most investors perceived that feeder markets housed only poorly performing companies and preferred to wait for the best ones to be promoted to the main market (Posner 2004, 2009). Most feeder markets did not survive the 1987 stock market crash (Mallin and Ow-Yong 1998; Weber and Posner 2000; Ritter 2003).

In 1993, the European Union passed the Investment Services Directive (ISD), legislation aimed at integrating national investment services, including stock exchanges, by extending the principle of mutual recognition to service providers. By virtue of the ISD, an exchange regulated in one European Union country could operate in another via electronic networks and computer terminals. This enabled the creation of a pan-European stock exchange for young high-tech companies, which was promoted by

the European Commission together with the European Venture Capital Association (Weber and Posner 2000; Posner 2004). The new market, the Easdaq, was inaugurated in 1996. Since it took the Nasdaq as an organizational model, it coupled low entry requirements with strong informational standards.

The forthcoming creation of the Easdaq was felt by national exchanges as a threat: the risk that financial activity might migrate to the new pan-European stock market led most national exchanges to set up their own versions of stock markets for growing companies at the domestic level. The London Stock Exchange anticipated by creating the Alternative Investment Market (AIM) in June 1995. The Paris Bourse responded in 1996 by inaugurating the Nouveau Marché, and in 1997 the Deutsche Boerse established the Neuer Markt. Finally, trading on the Italian Nuovo Mercato began in June 1999. The so-called New Markets (NM) were designed according to the Nasdaq organizational model, except the AIM, that was closer to the old feeders. Admission and listing requirements on NMs have been summarized and analyzed by Clatworthy and Peel (1998), Bottazzi and Da Rin (2002), Goergen et al. (2004), Burghof and Hunger (2004) and Posner (2009) among others. The NMs set milder requirements than the main markets regarding capitalization, profitability, pre-IPO shareholder equity, IPO value, free float and track record, but tighter information disclosure rules appointing sponsors to certify the company's compliance with the financial requirements and offer supervision and advice in the quotation process and in communications to the regulatory authorities; appointing market makers who match buyers and sellers; providing accounting information in line with international standards; and complying with lock-up rules constraining the disposal of shares by insiders.

The historical evolution of the main European NMs is represented in Table 1, reporting the number of member companies and the capitalization (in million USD) of the AIM, the Neuer Markt, the Nouveau Marché, the Nuovo Mercato and the Nasdaq for comparison, between 1995 and 2008. As it can be easily grasped, none of the European markets comes even close to matching the size of the Nasdaq. The New Markets created by national exchanges in continental Europe experienced very fast growth only in the early years. The Neuer Markt soon came to be the leading high-tech exchange in Europe, reaching a capitalization peak of more than USD 113 billion in 2000; in the same year, the Nouveau Marché overtook the AIM in capitalization terms, with the younger Nuovo Mercato almost catching up with them. All of this urged the London Stock Exchange to make the AIM rules more rigorous, and to set up the TechMARK segment in 1999, aiming to allow clearer identification of innovative and R&D-intensive companies within the official listing. Since then, the AIM has sought to broaden its focus to SMEs in general, also outside high-tech sectors; moreover, prior admission to the LSE was an eligibility requirement in the TechMARK. In a way, these facts testify that the enthusiasm of the British for the quotation of TBSFs dried up quite early.

As of 2001, the burst of the so-called Internet bubble hit all the markets quite hard. Several companies were forced to admit that they could not meet the earning forecasts declared in the introduction prospectuses, and the ensuing bankruptcies contributed to a general downward trend in

stock prices and capitalization, resulting in numerous de-listings and making new IPOs rare. Between 2000 and 2002, the drop in capitalization was dramatic: -91% in the Neuer Markt and -68% in the French and Italian NMs, less so in the Nasdaq (-44%) and in the AIM (-25%). The Neuer Markt and Easdaq ceased operations in 2003. In January 2005, the Paris Bourse replaced the first market, the second market and the French NM with a single official list (Eurolist by Euronext). The Italian NM was replaced in September 2005 by MTAX; the relevant legislation shows that admission requirements are now very similar to those in the main market.

The corporate and accounting scandals that marred the Internet bubble, rooted in conflicts of interest and insufficient regulatory controls, pushed regulators post 2001 to reinforce both the capital requirements on banks (see the Basel II Accords) and the requirements for financial disclosure on public companies and intermediaries - as with the Sarbanes-Oxley Act of 2002 (SOX). The restrictions on credit supply implied by the former may have stimulated the demand for public equity by TBSFs, while European markets seem to be better suited to satisfy such greater demand, in light on the opportunities for regulatory arbitrage between the US and Europe induced by the SOX. At the same time, the process of harmonization of the investment services across the European Union, commenced with the ISD, was further developed by means of the Financial Services Action Plan (FSAP) of 1999, the Lamfalussy process, and their main offspring, namely the Markets in Financial Intermediaries Directive (MiFID). Issued in 2004, and transposed into national legislation in most EU countries by November 2007, MiFID challenged the dominant positions of the national stock exchanges in two ways. First, it repealed the concentration rule (Art. 14(3) of the 1993 ISD), according to which retail orders handled by financial intermediaries had to be executed on a regulated market. Second, it allows other trading platforms (the so-called Multilateral Trading Facilities, or MTF) to compete with regulated markets for order flow.

Against the background of a changing financial landscape, the AIM managed to survive and experienced accelerated growth in capitalization and in the number of listed companies. NYSE-Euronext reacted to the enhanced post-MiFID competitive environment by setting up Alternext, a MTF closely modeled on the AIM (Davies 2008, Degryse 2009), while First North was inaugurated by Nasdaq-OMX. The AIM model was "exported" also as Tokyo AIM (2009) through a joint-venture between the LSE and the Tokyo Stock Exchange, and as AIM Italy (2009) following the acquisition of Borsa Italiana by the LSE. After the implementation of MiFID in the UK, the stocks listed on the AIM started to be traded on Plus, a British MTF focusing on small-caps. The increasing influence of the AIM regulatory model is witnessed also by recent developments in US stock markets, such as the birth of OTCQX (Mendoza 2008). Outside Europe, the TSX Venture Exchange (formerly Canadian Venture Exchange, established in 1999) stands out as yet another long-lasting second-tier market for growing companies, competing with private venture capital for micro-cap firms at the pre-revenue stage (Carpentier, L'Her, and Suret 2010).

### **3. Taxonomies of market organizational forms**

In this section, we describe the organizational forms of stock markets for growing companies by means of three taxonomies proposed in the literature, and we give some insights as to the determinants of such organizational forms.

#### **3.1. Listing requirements, information disclosure, and regulatory responsibilities**

In a rather general way, one can view the architecture of a stock market as made up of building blocks. Specifically, a stock market features: a listing process, an information disclosure process, a trading system or price determination process, an oversight process, a sanction process, a graduation process, and the exchange's governance structure. Not all stock markets include all such components. For instance, many MTFs are mere trading systems (e.g. Chi-X Europe) as they trade in stocks listed in regulated exchanges. Graduation is the process through which a company delists from a second-tier market and is admitted on a first-tier market, and as such, it is absent from first-tier markets. The organizational innovations brought about by feeders in the Seventies and Eighties and by the New Markets in the Nineties mostly concerned the listing and information disclosure processes. The turn of the century has witnessed changes in the governance of stock exchanges, which are increasingly undergoing demutualization, whereas MiFID pushes the national stock exchanges to improve their trading systems along several dimensions, such as execution price, speed, likelihood of execution, likelihood of settlement - a goal sometimes attained by integrating the competitors' trading technologies into their own system - as with LSE's acquisition of Project Turquoise.

A few attempts have been made at classifying the architecture of markets for growing companies, focusing on the way the above mentioned building blocks are arranged. A first taxonomy, based on the trading system, distinguishes between order-driven and quote-driven markets. Such a classification is not specific to second-tier markets, and has been widely studied in the literature on market microstructure (O'Hara 1995, Spulber 1999). A second taxonomy, introduced by Posner (2005, 2009), maps exchanges along two dimensions: barriers to listing and informational standards. Finally, the listing, disclosure, and sanction processes can be organized according to alternative regulatory models, inspired respectively to the rules-based approach and the principles-based approach (Rousseau 2007). These taxonomies explore complementary aspects of market functioning, and are partly overlapping.

##### **3.1.1. Order-driven vs. quote-driven markets**

The explicit consideration of trading rules in the analysis of stock markets highlights two major trading systems or price-determination processes, yielding two polar market settings: price-driven markets (market making) and order-driven markets (where orders are stored in a book). In the former case, prices are set by market makers and contribute to raise orders. In the latter case, the confrontation of



sell orders and buy orders generates prices. The Nasdaq, followed by the LSE, is historically the main instance of a price-driven market, while countries in continental Europe and in Japan tend to use order-driven systems. Nowadays almost all stock exchanges have adopted a hybrid system, combining an electronic book with market makers. The main advantage of a market making system is the high liquidity provided by market makers (see for a synthesis Madhavan, 2002). Market makers allow to reduce the temporal imbalances in order flow by maintaining a presence (Gossman and Miller, 1988; Venkataraman and Waisburd, 2007), and contribute to fill gaps from unbalanced order arrivals (Demsetz, 1968, Nimalendran and Petrella, 2003). The liquidity provided by market makers can also be viewed as a public good with positive externalities (Gromb and Vayanos, 2002). A more recent and original argument comes from Mao and Pagano (2007), who consider the market maker as a risk manager who may play a crucial role during excessive volatility periods. Such beneficial effects on liquidity can be helpful especially for low capitalization companies. On the other hand, the main disadvantages of a market governed by prices are the high transaction costs that are contained in the bid-ask spread (Pagano and Roell, 1990; Neal, 1992). Market making can be viewed as favorable for large institutional investors because they can negotiate prices within the market makers' spread (Madhavan, 1993), hence retail investors may be discouraged, limiting the extent of the market. Ultimately, the discrete power of the market makers can favor non competitive behaviors as it was the case in the Nasdaq during the mid-Eighties (Christie and Schulz, 1994, Barclay, 1997, Huang and Stoll, 1996, Kandel and Marx, 1997, Dutta and Madhavan, 1997 among others). In 1994, investigations conducted by the Securities and Exchange Commission (SEC) and the American Department of Justice on the Nasdaq reported non-competitive transactions. Nasdaq market makers adopted numerous illicit practices such as price collusion and spreading of private information (Guennif and Revest, 2005). Ultimately, whether TBSFs benefit from market making or not, it depends on the balance between risk mitigation and market power exercised by the market makers.

### **3.1.2. Barriers to listing and informational standards**

The taxonomy proposed by Posner (2005) ideally maps markets in a two-dimensional space defined by the strength of listing requirements and by the degree of information disclosure. Information disclosure can be proxied by the accounting standards (national or international), the obligation to publish quarterly reports, the ad hoc disclosure of significant news, and the use of the English language in company reports. The barriers to listing concern the minimal initial requirements in terms of capitalization, assets, equity capital, trading history, and free float. Traditional stock exchanges are characterized by high listing requirements and tight disclosure, whereas markets for growing companies usually impose low listing requirements. However, while informational disclosure was rather low in the so-called feeders, it was higher in the Nasdaq, Easdaq and the markets in the Euro.NM circuit.

Posner's emphasis on admission requirements and information disclosure is easily explained. The shares of small, relatively untested companies are unlikely to be floated if the companies have to comply with the strict admission requirements of the official listings. It is well understood that high-tech small and young enterprises are informationally opaque by the very nature of their business. Tight information standards are aimed to overcome such opacity. A company's decision to submit to tight information disclosure rules may nevertheless be interpreted as a signal of high entrepreneurial quality, possibly triggering positive selection dynamics. Further, the information disclosure process works as an interface between a national stock market and foreign players (be them TBSFs, intermediaries, or investors), since the adoption of accounting standards and the use of a widely diffused language makes information intelligible worldwide. By attracting the quotation of foreign TBSFs, tight information rules enlarge the pool of potential market entrants, thereby increasing the likelihood that the market attracts companies with high business potential. Also, greater compliance with international standards improves coverage by international analysts, possibly yielding beneficial reputation and risk-mitigation effects. By the same token, low information disclosure can discourage international investors, but quite interestingly it can serve the interests of the national shareholders and stakeholders against inflows of foreign capital, and can shield the national stock exchanges from mutual competition, preserving their positions as national monopolists on order flow. Instituting markets with low information standards is in line with the European tradition of stakeholder-oriented corporate governance systems (Charreaux and Desbrières 2001, Balling 2004). Whether TBSFs benefit from stock markets run in the interest of stakeholders is an empirical question, since other stakeholders (e.g. large and established companies) may have more influence on how the stock market is run.

### **3.1.3. Rules-based vs. principles-based regulation**

A third and last taxonomy builds upon the difference between rules-based and principles-based regulatory approaches (Verheij et al. 1998, Burgemeestre et al. 2009). In a rules-based regulatory system, the content of regulation is made up of general, abstract, and universal rules, defined ex-ante, i.e. before adoption and implementation. Neither exceptions, nor discretionary behaviours are allowed. In “producing” the rules, the legislator takes duly into account the principles that lay behind the policy goals. In turn, principles give rise to reasons in favour (“pro-reasons”) and against (“con-reasons”). The legislator then assigns a weight to each reason, and each rule is the outcome of a weighted comparison between pro- and con-reasons. In a principles-based regulatory system, instead, the weights to the pro- and con-reasons are assigned by the regulator or by an auditor case by case, and case-specific circumstances are taken into account when determining the weights. Participants in the regulative process, therefore, hold discretionary power. Rules-based regulation prescribes how business should be conducted, whereas principles-based regulation leaves companies free to decide how to align their conduct to the policy goals (Walsh 2008).

Rousseau (2007) applies the rules-based vs. principles-based taxonomy to stock markets, with reference to the admission, oversight, and disclosure processes. In markets regulated through a rules-based approach, the listing requirements are objectively defined, and the listed companies have to comply with formal rules, while in the principle-based regulatory approach, assessing the suitability of a company is outsourced to specialized financial intermediaries who hold discretionary power in performing their assessment (see Rousseau 2007). Such "trust intermediaries" are called nominated advisers in AIM and sponsors in Alternext. Nasdaq, Easdaq, the markets belonging to the Euro.NM circuit, and TSXV fall into the rules-based camp.

The case of AIM is an interesting illustration of the principles-based approach. AIM requires that every company seeking admission appoints a Nominated Advisor (Nomad). "A Nomad must be a legal entity with at least two recent years of corporate finance practice, having at least four "qualified" executives and at least three relevant transactions for the same two years" (Litvintsev 2009, quoting AIM Rules for Nominated Advisers, article, February 2007). Nomads have to assess whether a company seeking admission is suitable for quotation, and later to provide assistance in order to ensure that the companies respect their continuing obligations. Nomads have to carry out a rigorous examination of the applicant's business and must understand in detail the applicants' activities: business plan, managerial structure, financial and legal status, and so forth. AIM recommends the Nomads to visit the applicant's site of operation and to employ external experts to analyze the firm's business (Mendoza, 2008, p. 301). Such a suitability assessment replaces the formal listing requirements set by traditional stock markets. Nomads may also play an important role in corporate governance decisions, by persuading their clients to satisfy certain standards. As a matter of fact, the AIM rules do not mandate the adoption of specific corporate governance structures, and unlike LSE companies, AIM companies are not required to comply with the UK Corporate Governance Code.

All in all, Nomads act as gatekeepers, advisers and, ultimately, regulators of AIM-listed companies. Consistent with such decentralization/privatization of regulatory oversight responsibilities, the securities traded on AIM are not regulated by the UK Listing Authority (UKLA), and they do not need to be consistent with the EU directives implemented in the UK. Admission documents are not pre-vetted by the exchange or UKLA in most circumstances. The discretionary power of the Nomads is compensated by the investors' ability to prosecute Nomads if they are misled. Yet, reputation seems to be the most effective tool to limit the Nomads' arbitrary power.

The main advantages and disadvantages of a principles-based regulation emerge quite vividly. With a faster admission process and customized oversight and disclosure, companies going public on AIM save on transaction costs, that otherwise are born disproportionately by small companies. On top of this, the Nomads can perform certification and coaching roles for the quoted companies, much alike venture capitalists. Yet, with decentralized, discretionary admission and monitoring, the viability of the market ultimately rests on the competence and integrity of the sponsors/nominated advisers. For one,

applying principles requires greater case-specific knowledge than applying rules, as well as deeper understanding of the interdependencies between different, possibly conflicting principles. Outsourcing the regulatory responsibilities to financial intermediaries may provide high-powered incentives towards building such necessary competences, but knowledge tacitness (M. Polanyi 1967) and bounded rationality (Simon 1972) could seriously compromise the effectiveness of regulatory oversight, however tailored. Moral hazard may arise, too, since Nomads are hired and paid by the companies that they monitor, and can at the same time act as brokers and auditors for them (Gerakos et al. 2011). Social ties between market participants are likely to be rather strong, since the majority of the AIM investor's base turns out to be made of "sophisticated investors", more precisely institutional investors and investors specialized in the AIM companies (Mendoza, 2008, Gerakos et al., 2011). Institutional investors and the Nomads usually know each other well: the admission mechanism often involves private placements, where few institutional investors are invited to acquire shares in the applicant firm before the IPO. This mechanism points out the case of a market not really open to the public.

In rules-based regulation, it is the policy-maker who needs competence and information to design general, abstract, and universal rules, and he/she needs them in advance, before actual implementation. Subsequent, unforeseen events may make those rules ineffective vis-à-vis the attainment of the underlying policy goals. Moreover, political economy considerations may cast doubts on the efficient collection and use of information by regulators and policy-makers - and consequently, on the adequacy of the rules. Therefore, uncertainty and government failure are the main threats of rules-based regulation.

### **3.2. Insights on the determinants of market organization**

In line with Fligstein's (1996, 2001) approach of markets as social and political constructions, historical works in the fields of Sociology and Economics have underlined the connections between politics and the rise of financial markets (Carruthers, 1999, Neal and Davis, 2005). The former contribution insists on the continued interactions between the political elites, public finance and the stock exchanges in the rise of financial markets in UK during the eighteenth century. The latter contribution emphasizes the impact of the rules that governed memberships during the emergence of the LSE, the NYSE and the Paris Bourse, from 1792 to 1914. The authors showed to what extent incentives for innovation depended on the sources of income of the traders, which in turn were determined by the institutional context and memberships rules. While Carruthers' analysis is really close to Fligstein's (1996) proposal that markets should be viewed as political constructions (Preda, 2007), both historical works share the view that national regulation and powerful groups of actors play a role in the design of a financial market. Yet, regulatory changes can produce unexpected consequences as it was illustrated in the case of the Paris Stock Exchange, through the 1893 and 1898 reforms (Hautcoeur et al., 2009).

Consistently, the history of European stock markets for growing companies provides a peculiar view-point on how the organizational forms can be described by the adaptive responses and interactions of public and private actors to the threats and opportunities posed by ever changing macroeconomic and technological environments. In particular, one can identify two main tendencies: on the one hand, the role of supranational financial reforms in the emergence of stock markets for growing companies, and on the other hand, the role of the national stock exchanges - as parent organizations of the newly instituted markets - in shaping their market architectures.

Posner's (2005) account of the emergence high-tech stock markets in Europe is enlightening. Second-tier markets were established in the Seventies and Eighties under political pressure to help SMEs garner access to public equity. The design of such markets, however, was left to national stock exchanges, and is revealing of a misalignment between the policy goals and the private interests of the exchanges. As a matter of fact, in the design of their second-tier markets, the national stock exchanges had to satisfy only one constraint for compliance with the policy goals: the entry barriers had to be low, in order to allow flotation of young small caps. Given that, the exchanges had considerable degrees of freedom in designing the other "building blocks". Such architectural choices were made in order to avoid two main risks. First, quoting small and untested companies might have scared investors, due to the implied information asymmetries, harming in turn the liquidity of large caps. Second, although the opacity of TBSFs might have been mitigated through tight information disclosure rules, tight information standards were incompatible with the positions of the exchanges as national monopolies on order flow. Markets such as the USM (UK) and the Second Marché (France) adopted lax information standards, and pro-actively used the graduation process (or feeder mechanism) to make sure that the best second-tier companies would feed upwards to the main market.

The birth of Easdaq and the ensuing flurry of New Markets can be traced back to public influence, too, through at least two channels. For one, the project of setting up a pan-European stock market would not be feasible without the Investment Service Directive, since Easdaq exploited the principle of mutual recognition and the enhanced opportunities for electronic trading permitted by the ISD. This highlights the role of the European legislature as enabler of market emergence. But, as reported by Posner (2005), public actors did more. In particular, the European Commission (EC) officials from DG13 (Information and Innovation) and DG23 (SMEs, Enterprise) actively promoted Easdaq. The interests of European Commission officials were aligned with key private actors, such as the EVCA. The EC officials pursued the goal of integrating the national financial markets, and at the same time were eager to find solutions to the structural unemployment and technology slow-down problems incurred by the European economies. EVCA sought wider exit opportunities for the investments made by their associates, and believed that new exit opportunities could best be provided by a broad, international, liquid stock market tailored to the needs of high-tech companies with little trading history but high growth potential. The European Commission promoted political discourse

linking job creation to venture capital investments, used its resources and encouragement to convince EVCA members that were against the Easdaq project, provided financial support to two preliminary studies to the non-profit organization EASD, and gave subsidies for Easdaq's early times of operation (Posner 2005). Private initiatives by the national stock exchanges for the supply of new markets only surfaced when the threat of a publicly-subsidized pan-European stock market materialized. The national stock exchanges would probably have been better off without high-tech segments housing risky ventures, but because the other national exchanges set up their own high-tech segments, it was in their own interest to respond. One may envisage a sort of strategic complementarity between the stock exchanges' decisions to supply new markets, with the entailed multiple equilibria problems.

Interestingly, all of the so-called New Markets but AIM adopted a market design tailored to closely follow the Nasdaq approach (tight information standards, low entry barriers). The reason why Nasdaq was chosen as the reference model is still disputed. Although it has been viewed through the lens of efficiency by economists, explanations rooted in the quest for political consensus have been advanced, too (see Posner 2005). Nasdaq was publicized as a vital factor in the American success with new technologies, such as biotechnology (see Coriat, Orsi and Weinstein, 2003).

However, given the feeders' inability to perform, Nasdaq must have appeared as the only credible alternative design regardless of its purported macroeconomic effects, a view that allows for an adaptive learning perspective. In line with a knowledge-based approach to institutional change, Easdaq and the New Markets could be thought of enacting imitation strategies targeting the Nasdaq market architecture. Not by chance, Posner (2005) speaks of "Nasdaq copies". Following Rivkin (2000), the likelihood of success of an imitation strategy is tuned by complexity of the targeted market architecture. The relevant definition of complexity, here, is that provided by Simon (1962): market architecture is complex if it consists of many components and those components are highly interdependent, so that novelties imply an extensive reorganization of the whole architecture. Complexity implies causal ambiguity, namely the difficulty to fully understand the causal connection between architectural features and market performance (liquidity, efficiency, viability). Therefore, highly complex architectures can withstand successful imitation attempts even when information about them is open to public scrutiny, or when several ingredients are correctly reproduced by the imitators. If such intuition is correct, the historical record of collapsing New Markets provides circumstantial evidence that the building blocks of high-tech stock markets are richly interdependent, and shows that much knowledge required to imitate market architecture is tacit. Nonetheless, interactions between economic agents are framed not only by formal rules, but also by informal constraints. The informal practices and routines that have materialized in a particular market can hardly be codified, let alone the social relationships that lay behind the networks of actors (see White 1981, Baker 1984, Granovetter 1985 on financial markets). The broad, country-specific institutional context where a new market is implemented matters, too, with all its complementarities which, however, may be rather elusive. With

hindsight, the perspective of complexity could have warned the EC and the national exchanges against setting up Nasdaq-like high-tech segments.

The recent trend of AIM imitators (see Alternext) and of AIM-initiated markets (as with AIM Italy and Tokyo AIM) can be best understood by means of Winter and Szulanski's (2001) concept of replication strategy, and Rivkin's (2001) analysis of the comparative difficulties faced by imitators and replicators at various levels of complexity. Although AIM possesses an informational advantage with respect to its imitators, in the form of a better assessment of the original "template", Rivkin's (2001) analysis indicates that with high complexity, replication of market architecture by AIM can be nearly as difficult as its imitation by competitors. It is only at moderate complexity levels that the replicator reaps the benefits of its superior information on the template.

A concrete illustration of the difficulties to replicate a financial market has been provided in the case of the French New Market by Revest (2010). The French Market Authorities did not give enough weight to the Paris Stock Exchange history and to the skills and experience of the intermediaries. For instance, market making was a completely new function in Paris and intermediaries were not able to perform it in an effective way.

#### **4. The AIM: Success and threats**

Since its inception, the AIM market capitalization has evolved from 82.2 million pounds in 1995 to 81,276.8 million pounds in April 2011, and money raised by companies has increased from 96.5 to 2,088.2 million pounds during the same period (Table 2). The number of listed companies has increased from 10 in 1995 to 1,165 in April 2011. The AIM underwent trouble after the burst of the Internet bubble, as well as during the current financial crisis, yet it proved more resilient than most other markets for growing companies. Examining the listing, one finds that while most companies are based in the UK, some of them have significant assets outside the UK and can be viewed as international companies (Bauer and Boritz, 2006). In addition, a growing number of foreign firms – and notably, US firms - have entered the market in the last decade. The number of international companies quintupled between the end of 2003 (60) and August 2006 (304). Between 2004 and 2008, the number of new listings was higher on the AIM than on the LSE main market and on the Nasdaq (Gerakos et al. 2011, see Table 3). Quite interestingly, AIM was also able to attract companies from the Main Market, which outnumbered the companies graduating from AIM to the Main Market (see also Jenkinson and Ramadorai 2008, Gerakos et al. 2011). We have already mentioned in Sections 2 and 3 that AIM has replicated its market architecture in Italy and Japan, and its competitive pressure has spawned imitation efforts by NYSE-Euronext (Alternext) and by Nasdaq-OMX (First North).

All these figures and facts testify to the success of AIM if seen in terms of capitalization growth and increasing market participation (i.e. dimensional growth). One goal of this section is to review the main theoretical reasons behind such “popularity”. Yet, the process of dimensional growth of the

market can threaten the achievement of a satisfactory “quality” of the listed companies and the market's ability to support TBSFs. We explore this issue by reviewing the results of empirical studies about the performance of AIM companies.

#### **4.1. Why is the AIM so popular?**

How comes a market catering to relatively untested small caps managed to survive across nearly two decades constellated with financial bubbles, to experience dimensional growth, and even to attract an increasing flow of international companies? To date, this question has not yet been subjected to empirical scrutiny, but a number of theoretical explanations can be formulated, including regulatory arbitrage, sector diversification of the listing, and location advantages. Such explanations should by no means be viewed as strict substitutes, since the underlying mechanisms may be at work at the same time, and may even reinforce one another.

##### **4.1.1. Regulatory arbitrage**

The concept of regulatory arbitrage refers to the fact that companies can exploit differences among regulatory regimes in order to increase their profits. The migration of IPO activity from tightly regulated to lightly regulated markets, and the AIM's ability to attract companies previously listed on the LSE Main Market and US companies, look like outcomes of regulatory arbitrage. In this view, regulatory arbitrage was triggered by factors that increased the comparative advantage of AIM as a provider of liquidity and trading services. AIM's low fees, fast admission procedure, and customized oversight may have increased its attractiveness, whereas the attractiveness of other stock markets may have been diminished by regulatory changes, such as the Sarbanes-Oxley Act (SOX) in 2002.

To begin with, AIM offers low admission costs and listing fees to public equity for small firms. The total cost of an AIM initial listing appears to be lower than a Nasdaq initial listing. The cost is equal to 3,426,300 US\$ for the AIM against 4,472, 000 for the Nasdaq, based on the premise of a company seeking to launch a \$50 million IPO on both AIM and Nasdaq (Mendoza, 2008, p. 307). The direct ongoing listing costs are also limited for the AIM (\$ 147,300) compared to the NASDAQ (\$ 3,515,500), in the case of a completed \$50 million IPO. In addition to the low admission and listing fees, the AIM guarantees a rapid introduction procedure. The standard procedure takes between three to six months to complete (Rousseau, 2007). It involves the production of an admission document (a prospectus) that is not appraised by the LSE authorities. Since 2003, companies can also use the fast-track route, available for issuers that are already listed on recognized foreign exchanges. In that case, the company does not have to produce an admission document. Further savings are related to the customized regulatory oversight guaranteed by the Nomads (see Section 3.2 for more details).

The cost advantages implied by the peculiar AIM model are reinforced by regulatory reforms affecting the competitiveness of other markets. The purported role of SOX in the erosion of the US



financial markets competitiveness and the migration of IPO activity towards non-US financial markets is a hotly debated topic. Opponents of SOX blame it for increasing the costs of listing on US exchanges, and are favorable to a lighter approach to securities regulation (Blumberg-Schumer Report, 2007; Mendoza, 2008). In their view, US companies after SOX feel the presence of a regulatory burden and prefer to go public on lightly regulated markets, such as the AIM (Piotroski and Srinivasan, 2008; Coates, 2007; Leuz, 2007; see also the Report of the Committee on Capital Market Regulation, or Paulson Report, 2006). Since the higher regulatory costs are imposed without regard to firm size, SOX seems to particularly stimulate the migration of smaller firms (Mendoza, 2008). Consequently, the post-SOX improved attractiveness of AIM is rooted in novel US regulation that does not discriminate between small and large firms (Mendoza, 2008; Jenkinson and Ramadorai, 2008; Hoque, 2011; Doidge, Karolyi and Stulz, 2008).

In an alternative perspective, the US companies attracted by AIM may be unable to comply with strict information requirements, and their move to a lighter regulatory setting would signal their lower chances of survival. Indeed, supporters of SOX claim that its higher costs are more than offset by the long-term benefits related to positive selection effects. In particular, SOX may exert a dissuasive effect on fraudulent behaviors. Moreover, and consistent with the regulatory bonding hypothesis, companies that do submit to high regulatory standards signal higher quality to their investors (Coffee, 1999, 2002; Stulz, 1999; Reese and Weisbach, 2002; Doidge, Karolyi and Stulz, 2004, Zingales, 2007). Also, controlling shareholders find it more difficult to extract value from minority investors under the SOX legislation (Duarte et al., 2011).

#### **4.1.2. Sector diversification of the listing**

The diversification of the listing across sectors has presumably allowed AIM to avoid the collapse undergone by the European New Markets in 2000-2002. The composition of the AIM listing may have diluted an otherwise overly risky listing based on TBSFs, thereby attracting companies, intermediaries, and investments. Even during the Internet bubble, the AIM listing was more diversified than the other European NM, which housed mainly companies from a narrow set of R&D-intensive sectors. By the end of 1999, more than 80% of the Easdaq companies belonged to technology-based sectors, such as software, electronics, IT, biotech and medical equipment, telecommunications, and specialized equipment (Charlesworth, 2000). On the Nuovo Mercato, telecommunications accounted for the largest emission share (over 40%); biotech and IT had relevant weights too (Petrella, 2001). Conversely, high technology firms on the AIM have never accounted for more than 25% of market turnover (AIM Statistics; see also Mallin and Ow-Yong 2009), and over time it has broadened its scope including companies from traditional sectors, such as mining, oil, gas and real estate (Mendoza, 2008). AIM has extended its scope including firms engaged in a wide variety of activities. Among them, the three most represented sectors are Financials (24%), Industrials (19%), and Consumer Services (15%) (Mallin and Ow-Yong, 2009).

#### **4.1.3. Location advantages**

Location-specific advantages provide yet another set of explanatory factors. In particular, AIM seems to enjoy positive reputation spillovers from the London financial centre and from the relatively large size of the UK venture capital industry. London attracts a large pool of sophisticated institutional investors, who build close links with both the companies and the Nomads. In addition, it hosts a large number of specialists, such as investment banks, underwriters, and brokers, endowed with cumulated experience and competencies. Previous studies on cross-listing have shown the importance of analyst coverage and experienced specialists, as well as “be with your peers” effects for young high-technology companies (Blass and Yafeh, 2001, Pagano et al., 2002). The attractiveness of AIM is also related to the UK venture capital being the main venture capital industry in Europe, representing about 21% of the European venture capital industry in 2009 (EVCA statistics; Revest and Sapio, 2010). On top of this, it must also be noted that UK venture capitalists over time slightly improved their attitude towards young and small firms, while in the early Nineties they tended to give priority to large deal sizes and large companies (Murray 1999, Jeng and Wells 2000, Lockett et al. 2002, Mayer, Schoors and Yafeh 2005). A robust venture capital industry such as the one in the UK may have supported the growth of AIM: AIM offers exit opportunities to venture capital investments, and in return venture capitalists supply AIM with high potential companies that benefited from their advices.

#### **4.2. The existing empirical evidence: Contrasting views on the performance of AIM**

The increasing number of domestic and international firms listed, the continued capitalization growth, the replication and imitation of the AIM model around the world - all testify to the popularity of AIM. At the same time, one may envision a trade-off between dimensional growth of the market and the average “quality” of the listed firms. Indeed, there are reasons to expect that the marginal entrant will be significantly worse than the extant firms in terms of long-term returns, survival rates, solvency, growth rates, R&D productivity. Conflicts of interest between the Nomads and the companies they supervise, rooted in AIM’s discretionary screening and oversight approach, may attract companies that struggled to survive on the official listing, as well as cash shells. Therefore, a question naturally arises: Is dimensional growth of the market achieved at the expense of listing quality? And what are the consequences for the market’s ability to support TBSFs? Recent and on-going empirical studies shed light on two main issues: the characteristics and performances of the firms listed on AIM, and the influence of the level of regulation on IPO migrations between AIM and the LSE Main Market (Jenkinson and Ramadorai, 2008, Campbell and Tabner, 2010, Hoque 2011).

##### **4.2.1. Characteristics and performances of the listed companies**

A number of empirical works have examined the performance of the companies listed on AIM, with

respect to dimensions such as operating performances, stock returns, survival rates, and corporate governance structures. The insight behind those works is that facilitating the access to public equity can stimulate unsuitable companies to go public - and as those companies underperform and leave the market, small investors suffer losses, and the public resources spent to support TBSFs get wasted.

**Operating performances and stock returns.** Hoque (2011) examines the operating performances of firms listed on the AIM and on the Main List. Over the period 1995-2010, the operating performance in the 5 years after IPO, on average, is negative for AIM for all years, and positive for the main market. Stock returns are lower on the AIM than on the Main List. AIM companies are less likely to make acquisitions, produce lower dividends, and are more likely to be cancelled. Yet, the probability of Seasoned Equity Offerings (SEOs) is higher on the AIM than on the Main List. Relatively bad operating performances by AIM firms are underlined by Gerakos et al. (2011), too, who perform a comparison between the AIM, the LSE Main List, the Nasdaq and the OTCBB. AIM post-IPO share prices are found to under-perform IPOs on other markets. AIM firms tend to under-perform even when they are accompanied by Nomads who are also brokers and auditors, and more generally, the choice of Nomads does not have an influence on performance. Another test performed by the authors concerns the ability of the AIM to support the most promising firms. AIM's fast growing firms do not receive extra-returns: they are less likely to have extra positive outcomes than firms listing on other exchanges. Finally, the performance of AIM companies appears to be rather close to that of Pink Sheet companies as regards liquidity and informational asymmetry.

**Survival rates.** "I'm concerned that 30 per cent of issuers that list on AIM are gone in a year. That feels like a casino to me". This statement by Roel Campos, an SEC commissioner (Bawden and Waller 2007), has triggered two empirical studies, asking whether the estimated survival rates of AIM companies are as low as suspected. Espenlaub et al. (2008) have found that AIM IPOs exhibit high survival rates over the short-term (1 to 2 years after IPO), controlling for size, age, initial returns, country of incorporation, VC-backing, sector and time dummies. Over the long run (five years post IPO), the probability of surviving is positively related to age at IPO, size, and UK incorporation. Lastly, IPOs in information technology tend to have higher probability of failure (over 5 years) than IPOs in other sectors. Consequently, the results by Espenlaub et al. show that AIM cannot be seen as a casino. Such optimistic results are contradicted by Gerakos et al. (2011), who show that AIM firms have higher instantaneous failures rates than firms listings on the Nasdaq, LSE Main Market, or the OTCBB: 24,8% of the AIM sample firms fail within a year of listing, quite strikingly in line with Campos' prediction. It must be said, however, that Gerakos et al. (2011) only control for market value at listing, sector fixed effects, and year fixed effects, therefore raising robustness issues.

**Corporate governance.** The topic of company quality is approached by Mallin and Ow-Yong (2009) through the analysis of the determinants of corporate governance voluntary disclosure on the AIM. Based on the examination of 300 financial reports, voluntary corporate governance disclosure is

positively associated with company size, board size, positive turnover, and is higher for companies coming from the main market. At the same time, young companies with little or no trading history display a high commitment to corporate governance practices. Two main results can be emphasized: firstly, corporate governance practices largely depend on the internal characteristics of the AIM companies. Secondly, among the companies that are involved in good corporate governance practices, two different groups emerge. One group includes recently-established and young firms listed on the AIM which want to produce a positive signal toward investors. The other group contains mature firms that are used to corporate governance practices or that have the required internal competencies.

#### **4.2.2. Who are the switchers?**

A comparison of the firms' listing changes between the AIM and the Main List of the LSE and their determinants has been performed by Jenkinson and Ramadorai (2008) and Campbell and Tabner (2010). Assessing the characteristics of the switching companies can be useful in order to understand whether attracting main market companies is beneficial or harmful for the average quality of the companies quoted on AIM. The quality of the companies switching from the Main Market to AIM can be inferred by exploring the reasons behind the switches or, alternatively, by estimating the effect of a listing change on the switchers' stock returns.

Concerning the determinants of the switches, the reasons quoted by the managers to explain why they switch from the Main market to the AIM appear to be consistent with the specificity of the AIM's model: lighter regulation, low listing costs, and a market design more favorable to small firms (Campbell and Tabner, 2010). Among other reasons, it is worth mentioning the willingness to attract new shareholders. A particular firm profile emerges: companies that switch from the LSE main list to AIM are rather small and credit constrained, do not generate enough cash flow, and suffer from a too rigid and costly regulation. In other words, their expected reward from staying in the main list is negative. A shift to the AIM allows them to raise equity through Seasoned Equity Offerings, which are more numerous on the AIM, partly because firms on the AIM do not need shareholders approval for these transactions (Hoque 2011).

When the movements come from the AIM toward the main market, the predominant explanatory factors can be split in two interdependent categories (Campbell and Tabner, 2010). First, companies may desire to increase their shareholders base. The empirical evidence shows that ownership concentration is declining when there is a switch from the AIM to the Main Market. In addition, being listed on the main market may be synonymous of a more desirable profile and reputation in order both to attract new investors and talented personnel. Second, the market for corporate control seems more dynamic in the main market than in the AIM (Hoque 2011, Campbell and Tabner 2010). Consequently, companies may believe that they will have more opportunities to realize mergers and acquisitions in the main market. Campbell and Tabner (2010) shape also the

agency-based hypothesis that managers can choose to go to the main market at the end of a period of good performance in order to maximize their personal wealth.

Jenkinson and Ramadorai (2008) and Campbell and Tabner (2010) have examined whether the decision to change listing status between the LSE Official Listing and the AIM affects stock returns. Even if the two studies exhibit a few technical differences (Table 4), they converge to the same results: firms that shift from the Main List to the AIM exhibit negative abnormal returns at the announcement and positive abnormal returns after the implementation. The reverse movement is observed when firms move from the AIM to the main list: they are characterized by positive abnormal returns at the announcement and negative abnormal returns afterwards. A switch from AIM to the Main List signals that the company is ready to face higher standards of disclosure and corporate governance, justifying a lower cost of capital - in line with the bonding hypothesis. The increase in the bonding costs is outweighed by a lower cost of capital, and the switchers' stock prices rise. After the implementation, expected returns fall because the risk premium for investors is lower, taking agency risk into account (Campbell and Tabner, 2010). In the case of a switch from the main List to the AIM, investors estimate that the agency risk will be higher in the AIM than in the Official List (because of a decrease in the bonding costs and a higher cost of capital), so the switchers' stock prices fall. Then, after implementation, the abnormal positive returns can be interpreted as a reward to shareholders for bearing increased levels of agency risks. Overall, agency risk plays a crucial role in explaining the differential returns of firms in two regulation regimes, in the spirit of Skaife et al. (2004). Jenkinson and Ramadorai (2008) insist particularly on the role of institutional investors. They observe a small increase in aggregate institutional holdings in the six months following a switch to the AIM, from 23% to nearly 25%. This suggests that institutional investors are not abandoning companies once they switch to the segment with lighter regulation. The conclusion is that there exist particular investor clienteles for the two markets.

Overall, switches from AIM to the Main Market may deprive AIM of dynamic companies, while companies that switch from the Main Market to AIM are rather low-quality.

#### **4.2.3. Voluntarily delisted companies and cash shells**

As we have previously mentioned, the dimensional growth of a stock market can come at the expense of the quality of the listing. The positive trend in market admissions can threaten the AIM functioning inasmuch as an increasing number of foreign entrants is made up of offshore vehicles and cash shells. If investors perceive the market as increasingly risky, many promising TBSFs may find it convenient to delist.

Cash shell through reverse takeover operations and under the guise of investment companies have abused the market, as shown by the scandals involving Regal Petroleum and Chariot. In an attempt to fix this problem, in 2006 AIM introduced a new rulebook for Nomads in order to increase their

eligibility criteria, to fix their responsibilities, and to make them more accountable for the companies they introduce (Mendoza, 2008). A new rule was also implemented, according to which cash shells that raise less than 3 million pounds on listing and do not complete a deal within a given time receive a six month trading suspension since April, 2006. Because of this, 38 companies were suspended from trading in 2006 (Bauer and Boritz, 2006). In 2007 a new scandal altered the AIM functioning. The Langbar International Fraud which represents the biggest fraud discovered until now. Enquiries showed that this company had none of the assets it declared (375 million £).

Pour and Lasfer (2011) estimate the impact of firm's capital structure on the probability to voluntarily delist, using a sample of AIM listed companies. The findings suggest that the firms that choose to delist had, at the time of IPO, a higher leverage, a higher share of intangible assets, less growth opportunities and lower capital expenditure than those choosing to stay listed. Such evidence is in line with the theoretical expectations about companies that go dark and companies that go private, included among voluntary delisting in the paper. Companies that choose to go private feel a necessity to change: they may be inefficiently managed, under-leveraged or undervalued by the market (see for instance Lehn and Poulsen, 1989, Lichtenberg and Siegel, 1990, for studies on other financial markets). On the other hand, going dark appears as an answer to financial difficulties and distress. Companies that choose to go dark are usually small companies characterized by poor performance and low growth, whose difficulties are worsened by stock market regulation. According to Leuz et al. (2008), the decision to go dark may also be motivated by agency problems and insiders interests. For instance, managers can avoid dismissal due to poor performance by going dark. Also, managers can choose to go dark in order to extract private benefit or protect themselves against regulatory actions.

## **5. Conclusion**

Our main objectives in this paper were to explore the historical evolution of European stock markets for growing companies, to illustrate their organizational forms, and to evaluate their performances. We focused on the AIM because of its long-lasting dimensional growth that led it to be recognized as a possible organizational model of a financial market able to bridge the equity gap of TBSFs.

What have we learnt from the history of the European financial markets dedicated to TBSFs? A first result refers to the variety of the market architectures which succeeded one another. There is no unique model for the stock market for growing companies, but several ones, according to different criteria such as listing requirements, information disclosure and regulatory responsibilities. Each organizational architecture displays both advantages and drawbacks for TBSFs. Secondly, the different forms of market organization result from adaptive responses of public and private actors to the threats and opportunities posed by the changing macroeconomic and technological environments. Public bodies at the national and supranational level (especially the EC) as well as the national stock exchanges have played a crucial role in shaping market architecture. Yet, the variety of the actors

involved may induce conflicting views and the market design may result from severe negotiations, or appear as a compromise. Thirdly, the emergence and development of financial markets dedicated to TBSFs have to be examined through the regulatory changes that could stimulate or at the opposite slacken a market's expansion. Regulatory changes produce unintended consequences which can be judged as positive or negative for a particular market, such as the beneficial effects of SOX on the AIM. Fourthly, the history of financial markets dedicated to TBSFs sheds light on the issue of replicating a market. In the case of the "New markets" created during the 1990s in continental Europe, "copying" Nasdaq turned out to be a failing strategy. The complexity of market architectures, compounding many highly interdependent elements, combined together through the heavy use of tacit knowledge, makes the replication of a market a very difficult task (Rivkin, 2001). More broadly, if we consider markets as institutions, imitation of market organizational forms is also viewed as a delicate issue because of the presence of informal rules and the continued interactions between formal and informal rules.

In this context, how can we explain the expansion of the AIM? The AIM does not arise from the European wave of Nasdaq copies. We have suggested that the AIM's popularity relies on regulatory arbitrage induced by some regulatory changes (e.g. SOX) that made the AIM relatively more attractive - at least for those companies that view tight regulation not as a signal of financial soundness, but rather as a heavy burden. AIM's ability to expand also relies on diversification of its listing across sectors, that dilutes the risk attached to companies in high-tech industries, and has allowed the AIM to better withstand the consequences of the Internet Bubble crash. Finally, the AIM benefits also from location advantages, i.e. from positive externalities coming from the London financial center.

Nevertheless, a detailed analysis of the empirical performances of the AIM – and especially relating to the characteristics of the firms listed, reveals contrasted views and shadow zones. On the one hand, for some scholars the AIM is not as risky as a casino, and AIM IPOs exhibit quite a high survival rate over the short term (Espenlaub et al., 2008). Several arguments are advanced to explain the AIM's attractiveness both from the viewpoints of firms and investors. Firstly, there exists a specific class of investors for this market, who are rewarding for bearing increasing levels of agency risk - compared to the main market (Jenkinson and Ramadorai, 2008; Campbell and Tabner, 2010). Secondly, different reasons may push firms to be listed on the AIM: because firms are too small and credit constrained, they do not expect rewards from being listed on the main market. The AIM offers to this particular profile of firms a less rigid and costly regulation, and the opportunity to raise equity through Seasoned Equity Offerings (Campbell and Tabner, 2010; Hoque, 2011). Hence, the existence of the AIM and its popularity is justified by the argument "one size does not fit to all" (Mendoza, 2008). On the other hand, the empirical evidence raises the issue of the firms' quality. Operative performance and stock returns on the AIM are shown to be negative over the medium term (Hoque, 2011, Gerakos et al., 2011). The performances of AIM's companies are worse than those on the LSE main market and on the

Nasdaq (Gerakos et al., 2011).

The low quality of the firms appears as a major threat for the future of the AIM, and especially through cash shells and reverse takeovers. Scandals and anomalies already happened, but regulatory concerns increase with its growth. Will a market characterized by a principle based regulatory approach be able to control and sanction fraudulent behaviors, if the number of listed firms continues to increase? In other words, the characteristics of the AIM's market model which were at the origin of its success - few rules, close relationships between few actors, Nomads and institutional investors, reputation effects - can be transformed in harmful features for the long term stability of the market. This debate is all the more necessary as the AIM model spreads in the world. The role of the policy makers is to take the measure of the threat in order both to avoid a new financial crisis as the Internet bubble crisis and in order to allow these markets to finance the promising and high quality companies.

In our view, future studies on the AIM should focus on two topics: the profile of the investors and the operations conducted by the firms listed on the AIM. Although the AIM was tailored to a certain extent for retail investors, institutional investors are in majority (Mendoza, 2008, Gerakos et al., 2011). The related question is: who are really these investors? What are their profiles? Why do they invest in companies that generally underperform with respect to firms in other markets? At the same time, in order to better understand why firms choose the AIM, one could explore the issues of takeovers, acquisitions and mergers. One hypothesis is that this market can be seen more as a market for corporate control than a market that allows firms to raise capital.

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**Table 1.** Historical evolution of high-tech stock markets in Europe, 1995-2008, compared to the NASDAQ: end-of-year listed companies and capitalization (in Million USD).

Listed companies	AIM	Nouveau M.	Neuer M.	Nuovo M.	NASDAQ
1995	121	--	--	--	n.a.
1996	252	18	--	--	5556
1997	308	38	17	--	5487
1998	312	81	64	--	5068
1999	347	111	201	6	4829
2000	524	118	339	40	4734
2001	629	164	327	45	4063
2002	704	153	264	45	3649
2003	754	137	--	43	3294
2004	1021	128	--	40	3229
2005	1399	--	--	38	3164
2006	1634	--	--	--	3133
2007	1694	--	--	--	n.a.
2008	1550	--	--	--	n.a.

Capitalization (\$ Mln)	AIM	Nouveau M.	Neuer M.	Nuovo M.	NASDAQ
1995	3670.3	--	--	--	1519939.8
1996	8809.8	956.7	--	--	1511824.4
1997	9420.8	1655.9	n.a.	--	1737509.7
1998	7411.7	5069.5	46636.0	--	2243734.0
1999	21740.9	15261.1	74571.8	6996.9	5204620.4
2000	21824.8	22791.3	113596.8	20811.2	3597085.9
2001	16731.8	13604.3	29942.1	11120.0	2739674.7
2002	16262.2	7243.8	10341.7	6706.0	1994494.0
2003	32162.3	10267.4	--	10425.3	2844192.6
2004	61233.3	10753.0	--	9071.8	3532912.0
2005	98816.3	--	--	8615.1	3603984.9
2006	177978.1	--	--	--	3865003.6
2007	196917.1	--	--	--	4013650.3
2008	56113.5	--	--	--	n.a.

Sources: AIM Market Statistics, World Federation of Exchanges. AIM data have been converted in USD using the average December USD-GBP exchange rates (source: New York Federal Reserve website). "n.a.": not available.



**Table 2** Historical evolution of the AIM, 1995-2011. Capitalization and money raised in £m. The number of companies takes into account the number at the beginning of each year .

	Number of companies			Market value (£m)	Number of admissions			Money raised £m		
	UK	International	Total		UK	International	Total	New	Further	Total
19/06/1995	10	0	10	82.2						
1995	118	3	121	2,382.4	120	3	123	71.2	25.3	96.5
1996	235	17	252	5,298.5	131	14	145	521.3	302.3	823.6
1997	286	22	308	5,655.1	100	7	107	341.5	350.2	691.7
1998	291	21	312	4,437.9	68	7	75	267.5	317.7	585.2
1999	325	22	347	13,468.5	96	6	102	333.7	600.2	933.9
2000	493	31	524	14,935.2	265	12	277	1,754.1	1,338.3	3,092.4
2001	587	42	629	11,607.2	162	15	177	593.1	535.3	1,128.4
2002	654	50	704	10,252.3	147	13	160	490.1	485.8	975.8
2003	694	60	754	18,358.5	146	16	162	1,095.4	999.7	2,095.2
2004	905	116	1021	31,753.4	294	61	355	2,775.9	1,880.2	4,656.1
2005	1,179	220	1,399	56,618.5	399	120	519	6,461.2	2,481.2	8,942.4
2006	1330	304	1,634	90,666.4	338	124	462	9,943.8	5,734.3	15,678.1
2007	1347	347	1,694	97,561.0	197	87	284	6,581.1	9,602.8	16,183.9
2008	1233	317	1,550	37,731.9	87	27	114	1,107.8	3,214.5	4,322.3
2009	1052	241	1,293	56,632.0	30	6	36	740.4	4,861.1	5,601.6
2010	965	229	1,194	79,419.3	76	26	102	1,219.4	5,738.1	6,957.6
2011 to Apr	941	224	1,165	81,276.8	18	4	22	87.1	2,001.2	2,088.2

Source: London Stock Exchange.

**Table 3:** Comparison of new listings: firms that listed and raised capital on the AIM, the LSE Main Market and the NASDAQ over the period June 1995 through December 2008, and on the OTC Bulletin Board over January 1999 to December 2008.

	<b>AIM</b>	<b>LSE Main Market</b>	<b>NASDAQ</b>	<b>OTCBB</b>
<b>Year</b>				
<b>1995</b>	14	10	165	0
<b>1996</b>	66	38	358	0
<b>1997</b>	45	38	296	0
<b>1998</b>	17	31	240	0
<b>1999</b>	38	19	379	135
<b>2000</b>	120	51	269	36
<b>2001</b>	68	9	62	37
<b>2002</b>	53	17	72	47
<b>2003</b>	54	9	66	33
<b>2004</b>	<b>208</b>	20	170	46
<b>2005</b>	<b>280</b>	23	135	75
<b>2006</b>	<b>279</b>	41	142	77
<b>2007</b>	<b>179</b>	50	137	74
<b>2008</b>	<b>40</b>	11	22	53
<b>Total</b>	1,461	367	2,513	613

Source: Gerakos, Lang and Maffett (2011).

**Table 4:** Decision to change listing status: a comparison between Jenkinson and Ramadorai (2008) and Campbell and Tabner (2010).

Authors (year)	Jenkinson, Ramadorai (2008)	Campbell, Tabner (2010)
<b>Markets</b>	LSE, AIM	LSE, AIM
<b>Data</b>	210 firms down from MM to AIM 53 firms up from AIM to MM	245 firms down from MM to AIM 86 UK firms up from AIM to MAIN
<b>Years</b>	1997-2006	1995/1996-2008
<b>Source</b>	LES, Datastream	LES, Datastream
<b>Methodology</b>	Event study methodology Use weekly returns plus a Carhart (1997) four factor model	Event study methodology Use daily returns plus a benchmark returns model that control for industry residual returns and the possible interaction between market risk and change of listing status
<b>Research question</b>	How much do equity investors value regulation?	Does the regulatory environment influence the cost of capital?
<b>Main results</b>	Main to AIM: negative abnormal return in the 3 weeks surrounding the announcement and positive abnormal returns in the six month period following the switch  AIM to MAIN: positive abnormal return in the 3 weeks surrounding the announce and negative abnormal returns in the six month period following the switch	Main to AIM: negative abnormal returns at announcement, between announcement and implementation; positive abnormal returns after implementation  AIM to MAIN: positive abnormal returns at announcement, between announcement and implementation and abnormal returns after implementation
<b>Interpretation</b>	There exist particular investors clienteles for the two markets	Agency risk responsible for changes in firms returns over the announcement and implementation period