

## **Competition among stock exchanges: are listing services part of the deal?**

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*Competition among exchanges is growing fast on trading services. Differently, competition for listing securities has so far been minimal, if not absent, especially in Europe. The purpose of this paper is to highlight the monopolistic position that many important and well renowned exchanges around the world still maintain on offering and pricing of listing services. We first try to clarify the content of listing services. We then quantify fees applied by different exchanges to companies according to their size. We consider both initial and annual fees. Our results show that US exchanges are more expensive for medium sized firms while EU markets apply higher fees to largest companies. Many exchanges, particularly in the EU, are still taking advantage of their exclusive control position by applying premium price policies to largest companies in order to cross subsidize smaller companies.*

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## I. Introduction

Competition among stock exchanges increased largely on trading activity. In the US, the New York Stock Exchange (NYSE) and the NASDAQ now retain only about a third of the total trading on the stocks they list. In Europe, the LSE retains just above half of the trading in UK shares, while Deutsche Börse (DB) and Euronext Paris do not exceed two-thirds of the trading in their domestic stocks<sup>1</sup>

The traders' mobility across trading venues is not matched by the mobility of issuers across listing venues. Historically, listing shares has been a domestic business. Barring a few exceptions, companies listed their stocks on their home country's exchanges because of the well-documented strong home bias of investors (Solnik, 1974; French and Poterba, 1991) and the issuers' need to cope with a coherent system of corporate law and market rules. Admission to foreign exchanges was sometimes sought, but usually for marketing purposes (i.e. the recent listing of Prada, the Italian luxury company, at the Hong Kong Stock Exchange) or for bonding purposes (Ferris et al., 2009) and often in addition to the domestic listing rather than as a replacement (for a review see Karolyi, 2006). Such trend is still alive, particularly in the European case, as confirmed in 2009 NYSE Euronext Annual Report, (page 16) *"In Europe we do not currently face significant competition in providing primary listing services to issuers based in Euronext's home markets because most issuing companies seek to list their shares only once on their respective domestic exchange."*

Thanks to the investors' home country bias and to the legal barriers created by corporate laws and market rules fragmented across national borders, stock exchanges have long enjoyed a monopolistic position in providing listing services to domestic companies. By law, they were

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<sup>1</sup> Data retrieved from [www.fidessa.com](http://www.fidessa.com)

recognised as the domestic listing authority. Until a decade ago, the traditional not-for-profit, cooperative and semi public organisational structure of the exchanges prevented the risk that they could exploit their monopolistic power by charging issuers excessive listing fees. During the past decade, however, exchanges around the world have turned into private corporations with for-profit motives, often listed on the same stock market they manage. The risk of excessive pricing for listing services has increased as the main exchange in many countries demutualised despite retaining its traditional role as listing authority. Indeed, to mitigate this risk, in 2001 the power of the UK's listing authority was transferred from the London Stock Exchange (LSE) to the Financial Service Authority (FSA) with the creation of a dedicated department named the UK Listing Authority (UKLA).

Few contributions of the literature deal with listing services offered by stock exchanges. In the late nineties two theoretical models by Focault and Parlour (1999) and Huddard, Hughes and Brunnermeier (1999) focused on competition for listing among exchanges. In both models listing and trading services were considered as activities offered jointly and exclusively by stock exchanges. More recently, Chemmanur and Fulghieri (2006) proposed a further model, which relates listing standards to the cost of information for investors in each market.

In a seminal paper of 2002, Macey and O'Hara raised several doubts on the survival of listing fees in the US context, at least after the transformation of stock exchanges into public companies. Similarly, Aggarwal (2002) expected a reduction of listing fees, as result of increasing competition among exchanges and eventually the dismissal of the listing function from exchanges to other entities. Karmel (2007) argued that merging with an European exchange may be a way for US exchanges to recapture the listing fees and trading profits reduced after the introduction of Sarbanes-Oxley Act of 2002.

Nowadays both Nasdaq and Nyse became public companies, as many other stock exchanges did (see table 1). Did this change influence fees and policies adopted by exchanges in the

listing business, leading to an increase in competition? What are the specialties of the EU context, given the existence of a common regulation for listing activity? What about the UK choice to separate admission to listing from admission to trading?

We try to contribute to such discussion through the analysis of the pricing policies currently adopted by major world stock exchanges for their listing services. First we discuss the actual content of listing services, arguing that nowadays listed companies are basically paying for a quality certification service, while access to liquidity has been reduced by the growth of multilateral trading facilities. Second, we verify the relevance of listing fees in today's exchange markets activity. Third, we provide the first in-depth analysis of listing fees applied by stock exchanges according to listed companies' size, shading lights on potential monopolistic behaviour applied by stock exchanges and on the effective impact of the demutualisation on the listing business.

## **II. Listing Services**

Traditionally, an exchange provided issuers with a quality certification and with the access to a well-organised pool of liquidity. Nowadays, the surge of multiple trading venues eliminated the monopoly of stock exchanges in trading activity. Consequently, listing should be interpreted mainly as a quality certification service, as the access to a pool of liquidity might be granted also by other providers, such as alternative trading venues.

The quality certification process implies that the entity where the issuer is seeking to be admitted conducts a due diligence to assess that it is fit enough and has the attributes investors are looking for. The result of this process, when positive, leads to the admission of the company to listing. In the case of a negative outcome, moral suasion by the listing authority is used to encourage the unsuitable issuer to withdraw its request.

The process of going public starts with an informal contact with the stock exchange which usually promotes meetings, focus groups and conventions to illustrate the advantages of listing, as well as its costs and obligations. Issuers usually appoint an advisor or a sponsor to receive assistance in concluding the listing process successfully. As sponsors have recurrent business relationships with the exchanges, their presence speeds up the listing process. Exchanges often require their presence since they perform a preliminary screening of listing applicants, preventing the applications with no merit.

The scrutiny performed by the listing department of an exchange can be detailed and thorough. It pays attention to items such as the issuer's financial structure, the competitive position in its main sector of activity, the business plan presented and the reasonableness of the underlying assumptions. This analysis usually leads to an issuer data form, describing the main characteristics of the company. The timing for granting the admission varies widely across countries. In Switzerland, a listing can be obtained in four weeks, whereas in Italy it may take up to six months.

Once a company is admitted to listing, exchanges perform monitoring activities to guarantee the fulfilment of all ongoing requirements by listed firms and the fairness in market trading. As for the requirements of listed firms, the first obligation concerns price sensitive information, which must be promptly filed with the authority, disseminated to the public and stored in a central mechanism. Some exchanges provide network information systems to facilitate the communication of such news to the appropriate authorities as well as to the public. Exchanges also provide regulatory assistance to listed companies, as well as educational services and investor relations support. Exchanges must monitor the trading activity on listed issuers' stocks to maintain a fair and orderly trading.

According to Macey and O'Hara (2002), listing fees and listing requirements are a part of a complex relational contract between the stock exchange and listed companies. Authors argue

that the signalling role of listing is diminishing as other reputational intermediaries, such as investment banks, rating agencies and regulators are providing quality certification signals. Internet technology dramatically reduced the cost of research on traded companies. The usefulness of monitoring provided by a listing activity has been reduced also by the increasing role of institutional investors as more skilled than retail investors. As a consequence, in efficient economic terms, stock exchanges would be better dropping listing requirements in order to increase trading activity also on not listed firms.

Several arguments are mentioned to explain why listing fees and requirements are still applied. The main reason was the mutual ownership structure of NYSE and NASDAQ at that time, as in the short run a listing fee drop would have had a costly impact on exchange members. In addition, some companies may continue to pay listing fees for two further reasons. First, while listing certification label might add low value to largest firms, smaller enterprises and foreign companies, especially from less developed countries, might still find it valuable. Second, the size of listing fees is small relative to potential delisting costs.

We argue that the signalling role of listing is all but exhausted, even after the demutualisation of stock exchanges. Admission to listing can be considered as a quality label to a stock, similar to what happens when granting a rating to a bond. As there is a scale of ratings, the admission to the official list can also allow for a scale of different listing labels, signalling the issuer's commitment to complying with different governance and disclosure standards. Indeed many stock exchanges today offer both standard listing and premium listing admission programmes (i.e. London Stock Exchange, Deutsche Borse, Borsa Italiana and Nasdaq). Usually, the first label certifies the issuer's compliance with the basic requirements for admission to listing, while the second label certifies, in addition, compliance with even higher standards of governance and disclosure. Our interpretation is coherent with the contribution by Chemmanur and Fulghieri (2006), which develop a theoretical model to show that

exchanges use their listing standards as a tool in competing for listing with other exchanges. In such model competition among exchanges is expected to lead to a segmentation of the market for listing, where high-reputation exchanges set high listing standards and become first-tier stock markets, while low-reputation exchanges set lower listing standards and become lower-tier markets.

The label “officially listed” is also still relevant to access liquidity, both inside the stock exchange and outside. Admission to trading by regulated stock exchanges is usually granted upon recognition of admission to listing by the competent authority. On the other side, the access to large liquidity pools outside regulated exchanges is facilitated for listed companies, as alternative trading systems such as Chi-X, Bats, Turquoise, etc., concentrate their activity mainly on listed blue chips.

In the case of EU countries, also regulation indirectly recognises a value to the “officially listed” label. First, admission to the official listing implies full compliance with the minimum requirements of the Codified Listing Directive [2001/34/CE], which works as a minimum harmonization tool. Second, according to EU regulation, admission to “official listing” can be granted only by the entitled “Listing Authority”.

In practice, all main official stock exchanges tend to have more stringent admission requirements than those implied by the listing directive (see table 2). We might interpret this evidence as a way through which exchanges try to maintain the value of their quality certification function and potentially differentiate their products according to targeted clients.

As for the Listing Authority, all EU continental countries have assigned such function to the domestic stock exchange. By contrast, in the UK the historical stock exchange has lost the power of Listing Authority, which is now assigned to a special section of the domestic financial supervisory authority. In this case, admission to trading and admission to listing are always two separate processes whose final decision lies respectively with the stock exchange

and the Listing Authority. The UK government recognised the principle that regulatory powers should not be delegated to an exchange that competes for listing with other markets.

The choice adopted in the UK case aimed also at preserving the quality certification function of listing free from conflict of interests that could arise in case of business relationship between the exchange and the listed companies (see Carson, 2003) and preventing the risk of excessive pricing for listing services. The creation of a Listed Authority separated from the stock exchange favoured also the creation of new EU regulated markets (i.e. NYSE Euronext London), leading to a potential increase of competition among UK's exchanges.

The strong home bias of listed firms, combined in the EU case with the regulatory provisions for the listing function, guarantees a monopolistic position to domestic exchanges. Moreover, demutualised exchanges might have stronger incentives to manage listing fees (i.e. discriminating their application between large and small cap), in order to maximize profits.

To sum up, we argue that pricing of listing fee is influenced by two main factors. On one side more prestigious stock exchanges could apply premium policies which may be justified by their signalling role. On the other side the monopolistic structure of the business could encourage price discrimination policies regardless the quality of such signal.

In the following we will document the relevance of listing fees for exchanges revenues and provide evidence on pricing policies applied by stock exchanges for their listing services.



### III. Listing fees contribution to exchanges revenues

Listing fees represent a traditional source of revenues for official exchanges, as they remunerate the listing function which is reserved to regulated exchanges. According to the World Federation of Exchanges (WFE), listing revenues<sup>2</sup> accounted for 1.6 billion \$ in 2009, equivalent to 6.3% of total revenues for stock exchanges. Annual listing fees represent the largest percentage of listing revenues (53%) followed by initial listing fees (36%) and other listing fees (11%) concerning instruments such as warrants, ETFs, and other products. In 2004 listing fees represented 13% of total revenues, while they weighted 16% in 1999.

More detailed patterns can be appreciated from table 3, where data on individual markets are presented. According to 2009 results, listing fees contribution to total revenues varies from extremely reduced (0.6% at DB) to quite large (23.2% at TSX) values. Five years before, i.e. in 2004, such range was even wider, spanning from 0.9% (DB) to 30.8% (TSX).

During the period 2004-2009 the contribution from listing activity remained quite stable in the cases of London Stock Exchange and Borsa Italiana (now part of the same group), as well as in the case of Deutsche Borse. The only exchange that increased the weight of listing fees on total revenues was ASX. Slight reduction can be observed in the cases of BME and SIX, while TSX and TSE assisted to a more pronounced reduction. Contribution from listing fees halved in the cases of NYSE and Euronext (now part of the same group), while the most relevant drop was registered in the case of Nasdaq.

In terms of absolute value, with the only exception of TSE, all exchanges observed an increase of listing fees from 2004 to 2009. Such detail, combined with the impressive increase of total revenues in many markets, reveals that the listing activity was not able to keep the pace of the growth experienced by other business areas (in particular trading). In the same period the overall number of listed companies changed slightly (0.18%), even if differences

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<sup>2</sup> Trading revenues accounted for 53.9%, while services contributed 32.4% to total revenues.

arise among exchanges (see table 4). SIX, Euronext and Nasdaq lost a significant number of listed companies, while ASX increased the number of clients in the listing business.

To sum up, nowadays the overall contribution of listing fees to total exchange revenues has diminished in comparison with the past. The reduction has been particularly heavy for the US markets, while the impact on EU markets has been lower. Such pattern can be interpreted as consequence of the fast growth of other business areas in the stock exchange industry, combined, in some cases, with a reduction in the number of listed companies.

#### **IV. Admission Fees: Rationale and Structure**

Exchange markets charge listed companies in two ways. They first apply an admission fee when companies are admitted to listing and trading. They will then charge an annual fee for services provided to listed firms on an ongoing basis.

Comparing admission fees across exchanges involves comparing pricing functions rather than prices. Almost all the main markets adopt complex, non-linear pricing rules to calculate fees as a function of a parameter of the issuer's size, while limiting the fee range with both a lower (floor) and an upper bound (cap). Table 5 shows the different parameters upon which admission fees are based.

The general preference is for an *ad valorem* measure, usually defined as the issuer's market cap upon admission. All major European exchanges opt for it, BME being the sole exception since its pricing policy is based on the face value of the issuer's equity capital. Outside Europe, TSX and ASX differentiate their fees according to the issuers' market cap. At TSE, the fee depends on the Section of the main market where the issuer is admitted.

The preference for an *ad valorem* measure is not shared by the US exchanges, which base their fees on the number of shares sold through the IPO.

Admission fees may depend positively on the issuer's size because of either cost considerations or price discrimination strategies. Under the first hypothesis, exchanges adopt

a “full cost rule” pricing policy and face a cost function for their listing services that increases with the size of the issuers. However, for their verification processes, exchanges rely heavily on the comprehensive documentation prepared by the issuers’ auditors, consultants and bankers. Because it is based exclusively on deskwork, the cost for exchanges to evaluate admission requests cannot be too sensitive to the issuers’ sizes and should not justify excessive differences between the fee paid by small and large issuers.

Under the price discrimination strategy hypothesis, exchanges with strong oligopolistic powers differentiate their admission fees to capture the greater surplus that large issuers enjoy by having their shares traded on a public market compared with small issuers. Their greater surplus may derive from higher savings in terms of cost of capital or from more valuable strategic options made available by the public company status. If this is the case, an exchange may greatly differentiate its admission fees across issuers, as permitted by its market power.

Alternatively, admission fees could be fixed below the marginal cost of admitting an issuer. Exchanges are not mono product ventures. They run a series of businesses, strictly interrelated with each other: listing issuers, matching traders’ orders, delivering market pre- and post-trade information and, possibly, clearing and settling executed transactions. They may find it profit maximising to set the floor below the marginal cost of the listing service if they expect from such decision a positive contribution to future profits from any other activity they engage into, giving rise to a cross-subsidization phenomenon.

This argument challenges the assumption that admitting issuers to a public stock market must be a self-sustainable business. The listing activity may alternatively be interpreted as the investment an exchange undertakes to secure future flows of profits from the order matching activity and related clearing and settlement services, as well as from the sale of pre- and post-trade real-time market information to the investor community. If so, admission fees could even become negatively related to the size of the issuer since exchange profits from trading,

post-trading and information sales are higher for large caps than for small caps. This view of the listing business would be appropriate if the exchange providing the original admission to trading retained a competitive advantage in attracting order flows. The pattern of change in the legal framework of the securities industry worldwide and advances in electronic trading technology have made it more unlikely to treat the listing business as a feeder activity for other exchange businesses. In the US, the National Market System (NMS) Regulation forces orders to be executed on the trading venue that offers the best quote, with no advantage for the exchange where the stock is listed. Despite the absence of an equivalent legal requirement, a similar outcome is also increasingly becoming the norm in Europe, where traders and brokers make use of smart order routing systems to direct orders to the venue offering the best quote.

#### *A Comprehensive Comparison of admission fees*

To gain an effective insight into how different pricing functions compare when applied to issuers of different sizes, we ranked all companies listed in a specific market by their market caps. We then calculated admission fees for those placed at the 1<sup>st</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup> and 100<sup>th</sup> percentiles, representing the cases of micro cap, small cap, medium cap, large cap and macro cap stocks, respectively.

The market considered is the MTA managed by BIT. By the end of 2009, 264 ordinary shares of Italian companies were listed. Some further assumptions are needed to obtain the admission fees for BME, NYSE, NASDAQ and TSE. Since the pricing function of the Spanish exchange is based on the face value of equity, the market cap is assumed equal to either 3 or 10 times the face value of equity. Since the pricing function at NYSE and NASDAQ is based on the size of the IPO, issuers are assumed to float either 30% or 60% of their stocks. The results are shown in Table 6.

Many blanks appear in the first column because the market cap of the issuer in the lowest percentile (€ 10 million) does not make it eligible for admission on the main markets at Euronext, BIT, NYSE, NASDAQ, SIX, TSX and TSE. Where eligible, the admission fee charged for the microcap ranges from € 4,745 in the Spanish market, should the share market price be three times its face value, to a maximum around € 30,000 at ASX.

The second column of Table 6 gives the results for small caps based on an issuer that capitalises € 53 million, with 46 million stocks outstanding, and that is eligible for admission on all markets. TSE is the most expensive market (€ 120,000), followed by the North American markets (from around € 80,000 to around € 100,000). Markets in Europe are much cheaper, with fees ranging from € 6,500 at BME (assuming the market cap is three times the issued capital of the issuer) to around € 45,000 at LSE.

For the medium cap stock, as exemplified by an issuer whose market cap is € 170 million divided into more than 430 million stocks, the North American exchanges are the most expensive as they charge their cap (above € 170,000 at NYSE and NASDAQ; above € 130,000 at TSX). For the US exchanges, this exemplification may overstate the actual listing fees for a medium cap issuer since it is built on the case of a penny stock which would not be suitable for listing there. ASX, LSE and Euronext cluster their admission fees at around € 90,000. The remaining markets in continental Europe stick to a much lower price range. Even excluding DB, which retains its uniform pricing of € 5,500, they charge from € 10,000 (SIX) to 25,000 (BIT), or to € 60,000, should we consider the case of a Spanish issuer with a market cap three times larger than the face value of its issued capital.

The picture changes when considering a large issuer with a market cap approaching € 800 million and more than 300 million stocks outstanding. By capping their fees, the North American exchanges are now about on par with LSE and cheaper than Euronext and ASX, whose fees rise to € 314,000 and € 250,000. BME and BIT (€ 80,000, assuming that the

market cap is ten times the face value of the issued capital, and € 120,000) remain in a lower price range, even though the gap with the previous markets starts to narrow in percentage terms. The Swiss market hold onto very low admission fees (around € 17,000), still three times higher than the uniform fee charged by DB.

When the macro cap is considered (€ 70 billion market cap and 4 billion shares), the ceiling is triggered everywhere, making Europe the place with both the most expensive and the cheapest venues of the world. At the upper end, even ignoring the hefty € 3 million bill invoiced by Euronext, there are BIT and LSE. Their fees range from € 500,000 to € 400,000, being about three times greater than the cap of the North American exchanges.

BME also shows a hefty admission fee as it does not have any cap. Similar to the case of BME, the lack of an official cap on ASX fees results in an impressive nominal fee charged to the largest companies. ASX, however, has discretionary power to discount very large fees.

The pricing of TSE does not materially change even considering the higher fee (around € 140,000) charged for admission to Section 1 of its main market, a more appropriate habitat for macro caps. It is only slightly higher than the cap seen at TSX.

At the lower end, SIX and DB remain the cheapest exchanges. Even though the former charges about eleven times as much as the latter (around € 64,000 vs. € 5,500), both fees are minimal compared to any other.

Overall, thanks to its uniform pricing policy rule, DB is the cheapest listing venue for issuers of all sizes. SIX remains close to DB in terms of price competitiveness regardless of the size of the issuer. Its fee schedule starts low and increases slowly.

DB and TSE do not engage in any price segmentation strategy. While DB charge the same fee to all issuers, the gap between the highest and the lowest fee at the TSE is around € 20,000 and depends exclusively on the segment of the market the issuer wants to enter upon listing. The difference in the absolute fee level between these two cases of uniform pricing mirrors a

different policy concerning the allocation of the cost of the exchange infrastructure between its two main groups of users: traders and issuers. DB favours the latter more than TSE does.

All other exchanges practice some form of price segmentation.

The North American markets pursue very moderate price segmentation strategies. Their maximum fee is at most twice as much the minimum fee, as in the case of NYSE. Moreover, in the US exchanges, the discrimination policy is only loosely correlated to the issuers' market cap. Being based on the number of floating shares, their fees do not even always increase in the issuers' market cap.

European exchanges are used to more aggressive price segmentation policies. The Swiss exchange shows more restraint than the others, as its maximum fee is just six times higher than its minimum fee. This ratio grows to about 10 at LSE and to 20 at BIT. The case of BME is more pronounced, even though the most extreme case of price segmentation occurs at Euronext, whose fee cap is almost 90 times higher than its floor, reaching € 3 billion for issuers with a market cap greater than € 26 billion

## **V. Annual Fee: Rationale and Structure**

An issuer admitted onto a public stock market must continuously comply with a set of requirements concerning the governance of the company's assets and the disclosure of corporate information. When planning a corporate action, an issuer must agree the timetable with the exchange to maintain an orderly and fair trading. The exchange provides the issuer with the assistance needed to meet its obligations and to maintain a record of full and proper compliance. Should this be the case, the exchange lets the issuer enjoy an ongoing quality certification service and a continuous access to a well-organised pool of liquidity, where an efficient process of stock price discovery can take place.

Because of this, exchanges charge issuers an annual fee. The rationale for the complex pricing functions seen for admission fees also applies to annual fees. The parameter used to measure

the issuer's size remains the issuer's market cap at BIT, LSE, SIX, TSX and ASX. BME and TSE switch to it as well, abandoning the face value of the equity capital and the policy of uniform pricing used for their admission fees. NYSE and NASDAQ base their pricing on the number of outstanding shares rather than on the floating shares only. Euronext does the same, abandoning the pricing based on the issuer's market cap which it uses when admitting new stocks.

#### *A Comprehensive Comparison of annual fees*

To gain a better insight into how the different pricing functions of annual fees compare with each other when applied to issuers of different sizes, we repeat the analysis of Section IV. In this case, by knowing the capitalisation and the number of outstanding shares of the issuers, fees can be calculated according to each pricing schedule without additional assumptions. They are shown in Table 7.

Some exchanges are consistent in their pricing policies across admission and annual fees. DB and NASDAQ retain their policies of uniform or limited price differentiation. BME and BIT still practice strong price segmentation. TSX maintains its middle-of-the-road approach.

Other exchanges reverse their pricing policies. Euronext, LSE and ASX opt for less pronounced price discrimination in the case of annual fees, as they impose a much lower ceiling on them. SIX and NYSE switch to a more pronounced price discrimination strategy, either lowering the minimum amount charged (SIX) or extending the range of annual fees at both the lower and upper ends (NYSE). The same does TSE which implements a price discrimination strategy based on the issuers' market cap, while retaining its separate pricing policy for Section 1 and 2 of its main market. The combined reading of Table 6 and Table 7 shows that annual fees are usually much lower than are admission fees. At Euronext and LSE, the percentage discount is greater for large caps; at BIT, BME, SIX for small and medium caps; at the remaining exchanges it is roughly comparable across all issuers' sizes. DB and



NYSE are exceptions. DB charges higher annual fees than admission fees to all issuers. NYSE does the same with respect to issuers with a large number of shares outstanding. Consequently, DB does not retain the feature of being the cheapest venue for micro caps and small caps, while BIT becomes the most expensive exchange for macro caps, ahead of BME and NYSE.

The annual charges for micro caps are usually set between € 5,000 (SIX, LSE and TSE) and € 13,000 (ASX, BIT). There are, however, some exceptions. BME charges are negligible (€ 500), while, Euronext, but especially NYSE and NASDAQ, may end up charging small caps a fee in excess of €30,000, being their pricing based on the number of shares.

The fee pattern is roughly similar for small caps, even though the median fee is now slightly higher (€ 12,500 instead of € 9,000).

Tokyo and most continental European exchanges charge medium sized stocks from € 6,000 to € 12,000 (SIX, London, DB, BME, Tokyo and BIT in ascending order). ASX, TSX and Euronext are well above € 20,000. NASDAQ is close to € 70,000, constrained by its cap. NYSE stands at around € 280,000.

For large stocks, a different pattern emerges. Only DB and SIX still charge around € 10,000, whereas London and Tokyo set fees in the € 15,000 – € 20,000 range. Madrid, Milan and ASX, whose fees are close to € 35,000, are more expensive than Euronext, whose pricing remains at around € 30,000. The NYSE remains in a league of its own, with fees above € 200,000.

Macro caps find their best habitat in terms of annual fees at DB where they pay just € 10,000, a third of the amount charged at SIX and TSE. London and Euronext are also reasonably priced, with a fee cap at around € 50,000. The biggest jump in fees, however, is recorded at BME, whose cap is at par with the cap at NYSE (about € 350,000), and close to the cap at BIT (€ 430,000). Even though the main stock markets in Milan and London are part of the

same group, the former has twice the annual fees of the latter from micro caps to large caps, and 10 times for macro caps.

*Annual Listing Costs: total revenues ranking and discrimination policies*

Table 8 provides a more complete picture of how the divergent annual fee schedules seen around the world may affect the overall bill paid by a whole group of listed issuers. All fee schedules were applied to 264 Italian ordinary shares listed on the Italian Stock Exchange at the end of 2009. Market cap, number of stocks and exchange rates are those current at that date.

NYSE would result as the most expensive market, with total revenues close to € 31 million, i.e. 2.5 times the second most expensive market (NASDAQ). The third most expensive market is Borsa Italiana, as the total bill would be very close to that of NASDAQ.

The fee schedules of all other exchanges are less onerous. The revenue collected according to both DB and SIX schedules amounts to € 2.5 million. Even the pricing adopted by LSE, the sister exchange of BIT, is more favourable to issuers, generating less than a third of the revenue produced by BIT pricing (€ 3.4 million), in line with the outcome delivered by the TSE schedule.

The gap remains large when BIT is compared with Euronext, whose fee schedule would generate only half of the revenue BIT receives (€ 62 million) from its pricing. The gap starts shrinking in comparison to TSX and ASX, which would record revenues of about € 8.3 million, but, most of all, in comparison to Madrid where the income generated by the annual fee would be just short of € 11 million.

Table 8 shows also the shares of the total revenue contributed by each quartile according to the different schedules. On average, the fee schedules are such that a little more than 10% of the revenue is generated by the first quartile, around 15% by the second, more than 20% by the third and more than 50% by the top quartile.

The most pronounced price discrimination strategy is found at BME. Its pricing allocates a negligible share of total cost to the first two quartiles, less than half the average share to the third quartile, while forcing the top quartile to account for more than 86% of the total revenue. BIT follows closely, extracting 6.7% of the total revenue from the first two quartiles; 8.9%, the lowest percentage among all pricing schedule, from the third quartile and 77% from the top quartile. LSE and SIX also practice price discrimination strategies which are slightly more pronounced than the average/median exchange.

At the other end of the spectrum, besides the obvious case of DB, the least discriminating pricing functions are found at Euronext, TSE and especially at NASDAQ. They allocate to the top quartile a share of the total fee that goes from 34% (NASDAQ) to 43% (Euronext, TSE), shifting the burden onto either the lower two quartiles (NASDAQ and Euronext) or the third quartile (TSE).

The NYSE, ASX and TSX schedules are more closely aligned to the median/average profile of revenue generation.

In a recent paper Cetorelli and Peristiani (2009) ranked equity markets according to their prestige for both ipo activity and trading flows. By comparing their ranking with our results on costs (see table 8, last two columns) we observe that only in a few cases more expensive markets deliver higher prestige. This is the case of the US markets. The expensive fees charged by the Italian and the Spanish markets do not correspond to an outstanding prestige ranking, while LSE and TSE seem to return higher value for the listing fees they receive.

## **VI. Fee Comparison over Time**

Lazzari (2003) compares the admission and annual fee schedules which were current at the beginning of the last decade. To appreciate the evolution through time of the pricing policies, we repeat the analysis of Sections IV and V to quantify the amount which the same issuers

considered by Lazzari (2003) would pay according to the 2009 schedules. A comparison is then made with his results to detect any fee change implemented since then.

Table 9 shows that, on average, since 2003 the admission fee schedules have overall remained stable, if not edged slightly up. The privatisation of the exchanges, the productivity increase stimulated by a higher competition and the economies of scales made possible by a more intense securities market activity are all factors whose benefits have not trickled down in terms of lower listing costs.

BIT has slightly reduced the fees charged to medium and large companies, but it has increased those for small companies. LSE has increased admission fees for all companies, particularly for medium and large caps. TSX has followed a similar path, increasing fees on large companies by more than 60%. Euronext, NYSE and NASDAQ have kept their admission fees constant.

DB reduced its fees significantly, except for micro caps, whose fees were increased by 40%, as it shifted from a strategy of slight price discrimination anchored to the face value of the equity capital to a policy of uniform pricing. The comparison overestimates the actual drop in the fees, especially for large issuers, as Lazzari (2003) used the market cap as a proxy of the face value of the equity capital.

According to Table 10, over the same period annual fees have increased on average for all issuers. There are, however, some noticeable differences among exchanges. Changes have been minimal at NYSE, as its fees have increased slightly only for small companies. LSE has cut its charges for smaller and medium issuers following the OFT investigation, and raised them for larger issuers. BIT has cut its fees across all class of issuers, but more so for the macro caps. NASDAQ, TSX and Euronext have done the opposite. DB introduced annual fees for all listed companies in 2003 with no further change so far. Prior to it, only issuers in

the now defunct Neuer Market and in the then premium segment for small companies (SMAX) were charged the annual fee.

## **VII. Admission and Annual Fees in Self Regulated Markets**

In EU countries issuers can also acquire the status of a public company by having their shares admitted to a self regulated market, legally an MTF in the terminology of the MiFID [2004/39/CE, section 3, articles 36–47]. These trading venues, which match orders sent by several traders, are managed by a market operator, either an investment firm or an exchange, in accordance with non discretionary rules.

Following the recent wave of new self regulated markets, any fee comparison would be incomplete if such venues were excluded. The self regulated markets considered here are Aim London, the first to be launched in 2004 by the LSE Group; Aim Italia launched by BIT; Alternext and the Entry Standard run by NYSE-Euronext and DB (see table 11). These markets aim to attract small and medium-sized issuers, offering them a lighter regulatory regime compared with EU regulated markets.

Table 12 compares the admission fees charged to issuers of different sizes along the lines of section IV. Macro caps are not considered since it is not plausible that an issuer with a market cap of billions of euro to seek admission to a self regulated market. The higher floor fee makes Aim Italia the most expensive venue for micro caps. For small, medium and large caps, Alternext overtakes this position due to a pricing function that displays a higher rate of growth. Aim London is more expensive than is Aim Italia for small and medium caps, but is cheaper for large caps because its fee cap becomes binding at a lower market capitalisation.

Table 13 reports the annual fees with same approach used in section V. A uniform pricing policy is applied not just at the Entry Standard, but also at Aim London. Both markets charge similar fees, € 5,000 or slightly more, not even half the minimum fee charged by Aim Italia and about twice the minimum fee at Alternext. In sum, Aim London and DB's Entry Standard

have fee schedules that are more favourable to issuers than those of their respective main markets. Alternext and Aim Italia, instead, have basically the same pricing as their respective main markets.

### **VIII. Conclusions**

The analysis of listing fees revealed that listing services are priced very differently around the world.

Our admission fees survey revealed two main results. First, the divergence in pricing schedules is more pronounced among European markets than it is among US markets. Second, exchanges take a different approach towards price discrimination. In some cases, discrimination is held at a minimum or is absent altogether. In other cases, the gap between the highest and lowest fee paid to be admitted onto the same market runs into millions of euro. Overall, the most expensive EU market for admission to listing is Euronext. For smaller and medium size issuers, on average, the US markets are more expensive than are EU markets.

The main US markets diverge in terms of annual fees as NYSE and NASDAQ have similar floors but the cap at the former is five times higher than at the latter. Among EU exchanges, some markets take advantage of their monopolistic power charging hefty fees to the largest companies, possibly cross-subsidising smaller companies. Other markets keep their fees closer to the actual costs they bear for the services offered to listed firms. Euronext is the most expensive EU market in terms of annual fees for small and medium issuers, while BIT replaces DB for large issuers.

If we consider the number of domestic and foreign listed companies (Table 4) as a proxy of the signalling value of listing we might argue that US markets pricing policies can be explained with the higher value associated with the label “listed in the US”. In particular, NYSE is able to apply a premium price policy on an ongoing basis, as revealed by the level of

annual fees. Also prestige ranking provided by Cetorelli and Peristiani (2009) suggests such interpretation. Differently, the explanation for large price discrimination applied by some Continental European exchanges is more a story of monopolistic behaviour, as also the small number of foreign listings and low prestige ranking confirm. Despite their diminishing weight on total revenues of stock exchanges, listing fees represent still an important and stable flow, particularly for EU exchanges.

When compared with the previous research (Lazzari 2003), the price of issuers services do not show any relevant change. On the whole, admission fees have been roughly stable, while the annual fees have increased in some markets (Euronext, NASDAQ and TSX). Only BIT has decreased the annual fee, even though solely for the largest issuers. Therefore, contrary to literature expectations (Aggarwal, 2002; Macey and O'Hara, 2002) demutualization of exchanges did not result in lower listing costs, at least up to now.

In the EU context maybe stronger competition could be promoted in the future by the growth of self regulated exchanges. By now only some exchanges price the admission to trading and the permanence on their self regulated market less than the admission on their main market, while others share the same pricing schedule of their respective main markets. However, this is not a very supporting signal, should we believe that market forces alone will be able to promote higher competition in the exchange industry.

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Table 1: General statistics on regulated exchanges included in the analysis (Data from WFE at 31st December 2009)

<b>Exchange</b>	<b>Governance</b>	<b>Domestic companies Market capitalisation (\$ millions)</b>	<b>Average daily trading turnover (\$ millions)</b>
Borsa Italiana (BIT)	Listed group (LSE)	655,848	3,487
Euronext (ENXT)	Listed	2,869,393	7,740
London Stock Exchange (LSE)	Listed	2,796,444	13,404
Deutsche Borse (DB)	Listed	1,292,355	8,608
Bolsas y Mercados Españoles (BME)	Listed	800,603	5,058
Swiss exchange (SIX)	Private ltd company owned by members	1,064,687	3,025
New York Stock Exchange (NYSE)	Listed	11,837,793	70,574
NASDAQ	Listed	3,239,492	114,886
Toronto Stock Exchange (TSX)	Listed	1,676,814	4,940
Australian Stock Exchange (ASX)	Listed	1,261,909	3,668
Tokyo Stock Exchange (TSE)	Demutualized but not publicly listed	3,306,082	16,424

Table 2. Comparison of listing requirements in main markets

		Listing requirements				Ongoing requirements		
Market operator	Market Name	Minimum free float	Minimum mkt cap	Track record	Intermediaries	Price sensitive information	Annual reports	Relevant transactions
BIT	Mta	25%	40 mil €	3 financial statements, last year certified	Obligation to have a sponsor	Communicated to Borsa which then make it available to the public	Quarterly, half-year and annual reports certified	Obligation to communicate
ENXT	Eurolist	25%	50 mil €	3 certified financial statements	Specialist required	News must be published on the company web site and communicated to euronext	Half yearly and annual audited financial report, quarterly reports	Obligation to disclose shareholding held by an individual entity exceeding 5%
DB	Amtlicher	25%	1,25 mil €	3 years	Obligatory and must be recognised by the Admission Office	Must be communicated	Annual report and a note every six months	Must be communicated
BME	Main market	At least 100 shareholders must own < 25%	1,5 million €	3 years audited accounts	n.a.	Must be communicated	Annual reports certified, half year reports and quarterly notice	Obligation to disclose shareholding held by an individual entity exceeding 5%
LSE	Main market	25%	700,000€	3 certified statements of account	Obligation to have a sponsor	Market must be informed of all price-sensitive info	Half year and annual reports certified	Obligation to communicate
<i>EU Listing Directive Requirements</i>		25%	1,5 million €	3 previous balance sheets to be deposited at disposal of public	-	-	-	-
SIX	Main market	25%	CHF 25 millions	3 years of certified statements of accounts	One advisor must be recognised by Six	All potential price sensitive facts must be communicated	Annual reports and six months interim report	A listing application must be submitted to Six Admission office before capital increases, splits and share exchanges
NYSE	Nyse	1,100,000 shares	60 mil \$ free float; minimum mkt value must be from 25 to 100 million \$	3 years with positive earnings	Underwriter ensure the offering meets Nyse's standards	Timely disclosure to the Nyse and the media	Annual and half year interim reports must be filed with the Sec	Timely disclosure to the Nyse and the media

		Listing requirements				Ongoing requirements		
Market operator	Market Name	Minimum free float	Minimum mkt cap	Track record	Intermediaries	Price sensitive information	Annual reports	Relevant transactions
NASDAQ	Global select mkt Global market Capital Market	1.250.000 shares 1.000.000 shares 500.000 shares	70 mill\$ (free float) 8 mil \$ (free float) 1 mil \$ (free float)	3 years record of meeting financial standards on revenues or earnings	Underwriter ensure the offering meets Nasdaq's standards	Timely disclosure to Nasdaq	Annual and half year audited interim reports	Timely disclosure to Nasdaq
TSX	TSX	At least 1,000,000 freely tradeable shares having an aggregate market value of Cad \$4,000,000	Industrial sector: Net tangible assets 2 million Cad Mining: net tangible assets 1 of \$4 million Cad Oil and gas: proved developed reserves 32 of 7,5 million Cad	Pre tax earnings Cad 200,000 in the previous year	Sponsorship of an applicant company by a Participating Organization of the Exchange is required	Timely disclosure	Annual and half year audited interim reports	Timely disclosure
TSE	1 <sup>st</sup> section  2 <sup>nd</sup> section	35%  30%	50 billion yen  2 billion yen	3 years of continued bsn records Min. profit for the most recent 2 years: 1 <sup>st</sup> : 100 million yen 2 <sup>nd</sup> 400 million yen	n.a.	Obligation to communicate	Annual, half year and quarterly reports	Obligation to communicate
ASX	Official list	Minimum 400 investors and 25% held by unrelated parties	A\$10 million market capitalisation or A\$2 million Net Tangible Assets or A\$1 million net profit over past 3 years +A\$400,000 net profit over last 12 months	3 years of certified statements of accounts	Advisor must be appointed	Obligation to communicate	Annual reports and six months interim report	Obligation to communicate

Table 3: Listing fees contribution to exchange total revenues (data from annual reports 2004 and 2009)

Exchange	Currency	2004			2009		
		Listing revenues (in million)	Total revenues (in million)	Listing fees contribution to revenues	Listing revenues (in million)	Total revenues (in million)	Listing fees contribution to revenues
Borsa Italiana (BIT)	EUR	22.3	195.4	11.4%			
London Stock Exchange (LSE)	GBP	35.0	250.0	14.0%			
LSE Group	GBP	50.7*	387.8*	13.1%*	90.6	671.4	13.5%
Euronext (ENXT)	EUR	43.3	886.8	4.9%	59.0	1,208.0	
New York Stock Exchange (NYSE)	USD	329.8	1,089.5	30.3%			
NYSE Euronext Group	USD	388.8*	2,297.5*	16.9%*	406.0	4,687.0	8.7%
Deutsche Borse (DB)	EUR	13.1	1,449.6	0.9%	13.3	2,061.7	0.6%
Bolsas y Mercados Españoles (BME)	EUR	23.7	200.5	11.8%	26.0	297.0	8.7%
Swiss exchange (SIX)	CHF	17.8	358.8	5.0%	49.9	1,448.0	3.4%
NASDAQ	USD	159.3	540.0	29.5%			
NASDAQ OMX Group	USD	n.a.	n.a.	n.a	209.0	3,409.0	6.1%
Toronto Stock Exchange (TSX)	CAD	75.0	243.2	30.8%	129.2	556.3	23.2%
Australian Stock Exchange (ASX)	AUD	84.8	450.4	18.8%	104.1	538.4	19.3%
Tokyo Stock Exchange (TSE)	YEN	9,504.0	48,643.0	19.5%	8,073.0	67,090.0	12.0%
WFE	USD	n.a.	n.a	13%	1,662	26,511	6%

\* Figurative data calculated by adding fees from merged exchanges

Table 4: Number of companies listed on main exchanges (Data from WFE at 31st December 2004 and 2009)

Exchange	2004			2009			% Change 2004-2009		
	Total	Domestic companies	Foreign companies	Total	Domestic companies	Foreign companies	Total	Domestic companies	Foreign companies
BIT	278	269	9	296	291	5	6.47%	8.18%	-44.44%
ENXT	1,333	999	334	1,160	990	170	-12.98%	-0.90%	-49.10%
LSE	2,837	2,486	351	2,792	2,179	613	-1.59%	-12.35%	74.64%
DB	819	660	159	783	704	79	-4.40%	6.67%	-50.31%
BME	229	200	29	233	200	33	1.7%	0%	13.80%
SIX	409	282	127	339	275	64	-17.11%	-2.48%	-49.61%
NYSE	2,293	1,834	459	2,327	1,832	495	1.48%	-0.11%	7.84%
NASDAQ	3,229	2,889	340	2,852	2,569	283	-11.68%	-11.08%	-16.76%
TSX	3,604	3,572	32	3,700	3,624	76	2.66%	1.46%	137.50%
ASX	1,583	1,515	68	1,966	1,882	84	24.19%	24.22%	23.53%
TSE	2,306	2,276	30	2,335	2,320	15	1.26%	1.93%	-50.00%
TOTAL	18,691	16,782	1,909	18,724	16,803	1,921	0.18%	0.13%	0.63%

Table 5: Parameters Used to Quantify Admission Fees

<b>Exchange</b>	<b>Parameter</b>
Borsa Italiana (BIT)	Market capitalization
Euronext (ENXT)	Market capitalization
London Stock Exchange (LSE)	Market capitalization
Deutsche Borse (DB)	None
Bolsas y Mercados Españoles (BME)	Face value
Swiss exchange (SIX)	Market capitalization
New York Stock Exchange (NYSE)	Number of shares offered
NASDAQ	Number of shares offered
Toronto Stock Exchange (TSX)	Market capitalization
Australian Stock Exchange (ASX)	Market capitalization
Tokyo Stock Exchange (TSE)	Market Segment

Table 6: Admission Fees on the Main Markets by Issuers' Size (amounts in €)

<b>Issuer's Data</b>	<b>1st Percentile</b>	<b>25th Percentile</b>	<b>50th percentile</b>	<b>75th percentile</b>	<b>Largest</b>
<i>Capitalization (ml. euro)</i>	10.75	53.30	170.84	797.00	71,338.00
<i>Number of shares (ml.)</i>	57.88	46.34	431.31	322.67	4,007.75
<b>Exchanges</b>					
BIT	-	25,000	25,626	119,550	500,000
ENXT	-	35,977	92,336	313,101	3,000,000
LSE	10,956	44,989	81,807	164,330	397,187
DB	5,500	5,500	5,500	5,500	5,500
BME* (mkt cap = 3xface value)	4,745	18,925	58,107	234,724	n.a.
BME* (mkt cap= 10xface value)	n.a.	6,490	18,244	80,860	921,540
SIX	-	9,445	10,620	16,882	63,755
NYSE (IPO 30%)**	-	87,115	174,310	174,310	174,310
NYSE (IPO 60%)**	-	96,864	174,310	174,310	174,310
NASDAQ (IPO 30%)**	-	104,544	174,310	156,872	174,310
NASDAQ (IPO 60%)**	-	104,544	174,310	174,310	174,310
TSX	-	83,185	133,333	133,333	133,333
ASX***	30,949	56,146	92,346	244,049	12,916,992**
TSE****	-	119,582	119,582	119,582	142,003
<i>AVERAGE*****</i>		53,551	86,177	146,724	551,194
<i>MEDIAN*****</i>		44,989	92,336	157,792	174,310

\* BME charges are set according to the face value of the issuers' equity capital. The market cap is thus assumed to be either 3 or 10 times the face value of their issued capital. Only the first assumption is considered for the smallest issuer, while only the second assumption is plausible for the largest issuer.

\*\*The US exchanges charge on the basis of the number of shares offered in the IPO. We thus assume that either 30% or 60% of the shares outstanding are offered.

\*\*\* Fee calculated according to the published fee schedule. ASX has the discretionary power to discount very large fees on a case by case basis. The reported value does not contribute to the average.

\*\*\*\* TSE fees are obtained considering the admission to Section 2 of its main market for all but the largest issuer which has been considered admitted to Section 1.

\*\*\*\*\* BME and the US exchanges contribute with the average of the fee calculated under both the scenarios considered in each case.

Table 7: Annual Fees on the Main Markets by Issuers' Size (amounts in €)

<b>Issuer's Data</b>	<b>1st Percentile</b>	<b>25th Percentile</b>	<b>50th Percentile</b>	<b>75th Percentile</b>	<b>Largest</b>
<i>Capitalization (ml. euro)</i>	<i>10.75</i>	<i>53.30</i>	<i>170.84</i>	<i>797.00</i>	<i>71,338.00</i>
<i>Number of shares (ml.)</i>	<i>57.88</i>	<i>46.34</i>	<i>431.31</i>	<i>322.67</i>	<i>4,007.75</i>
<b>Exchanges</b>					
BIT	12,600	12,600	12,600	34,112	430,000
ENXT	18,600	14,200	23,208	29,470	50,000
LSE	4,518	4,518	5,891	15,280	44,535
DB *	7,500	7,500	7,500	10,000	10,000
BME	484	2,398	7,688	35,865	325,000
NYSE	37,534	30,051	279,674	209,232	348,481
NASDAQ	32,410	26,137	69,348	69,348	69,348
TSX	9,193	12,596	21,479	60,317	60,317
SIX	4,150	4,576	5,738	12,013	38,390
ASX	13,198	19,749	24,268	38,820	123,977
TSE**	5,381	10,762	10,762	21,525	34,081
<i>Average</i>	<i>13,233</i>	<i>13,190</i>	<i>42,560</i>	<i>49,000</i>	<i>139,272</i>
<i>Median</i>	<i>9,193</i>	<i>12,596</i>	<i>12,6</i>	<i>34,112</i>	<i>63,333</i>

\* When considering DB, Blue Chips are charged the Prime Standard annual fee, while issuers on the standard segment are charged the General Standard annual fee.

\*\* When considering TSE, issuers up to the 75<sup>th</sup> percentile are charged the Section 2 fee, while the largest issuer is charged the Section 1 fee.



Table 8: Annual Fee Revenue Generated by Different Pricing Schedules: the Case of Italian Issuers (amounts in €)

Exchanges	Total Fees	Breakdown by Quartile of Issuers				Country ranking based on prestige index***	
		First Quartile (Small Cap)	Second Quartile	Third Quartile	Fourth Quartile (Large Caps)	Ipo activity	Trading value flows
NYSE	31,383,478	9.0%	17.4%	24.0%	49.7%	1 <sup>st</sup>	1 <sup>st</sup>
NASDAQ	12,713,498	16.1%	23.4%	27.1%	34.1%	1 <sup>st</sup>	1 <sup>st</sup>
BIT	12,493,883	6.7%	6.7%	8.9%	77.7%	11 <sup>th</sup>	7 <sup>th</sup>
BME	10,787,112	0.8%	2.8%	10.2%	86.3%	19 <sup>th</sup>	10 <sup>th</sup>
ASX	8,448,686	12.3%	17.3%	23.3%	47.1%	9 <sup>th</sup>	11 <sup>th</sup>
TSX	8,321,111	8.4%	12.8%	28.5%	50.2%	8 <sup>th</sup>	8 <sup>th</sup>
ENXT	6,236,015	14.8%	19.0%	23.1%	43.1%	6 <sup>th</sup>	5 <sup>th</sup>
TSE*	4,186,547	11.1%	17.2%	28.3%	43.4%	5 <sup>th</sup>	2 <sup>nd</sup>
LSE	3,469,086	8.6%	9.6%	16.0%	65.8%	2 <sup>nd</sup>	3 <sup>rd</sup>
SIX	2,806,995	10.2%	11.9%	18.2%	59.7%	17 <sup>th</sup>	26 <sup>th</sup>
DB**	2,330,000	22.7%	23.8%	25.1%	28.3%	3 <sup>rd</sup>	14 <sup>th</sup>
AVERAGE	9,379,674	11.0%	14.7%	21.2%	53.2%		
MEDIAN	8,321,111	10.2%	17.2%	23.3%	49.7%		

\* When considering TSE, issuers in the first three quartiles are charged the Section 2 fees, while issuers in the top quartile are charged the Section 1 fees.

\*\* When considering DB, Blue Chips are charged the Prime Standard annual fee, while issuers on the standard segment are charged the General Standard annual fee.

\*\*\* Reported from Cetorelli N. and Peristiani S.(2009).

Table 9: Admission Fees: Percentage Change 2003–2009

<b>Exchange</b>	<b>1st Percentile</b>	<b>25th Percentile</b>	<b>50th Percentile</b>	<b>75th Percentile</b>	<b>Largest</b>
BIT	25.00%	16.01%	-19.51%	-5.80%	-1.96%
ENXT	0.00%	0.00%	0.00%	0.00%	0.00%
LSE	18.73%	43.10%	32.61%	25.77%	34.77%
DB*	41.03%	-45.00%	-57.69%	-74.42%	-99.13%
NYSE	0.00%	5.20%	0.00%	0.00%	0.00%
NASDAQ	0.00%	0.00%	0.00%	0.00%	0.00%
TSX	-49.15%	42.64%	62.60%	62.60%	62.60%
<i>Average</i>	<i>5.09%</i>	<i>8.85%</i>	<i>2.57%</i>	<i>1.16%</i>	<i>-0.53%</i>
<i>Median</i>	<i>0.00%</i>	<i>5.20%</i>	<i>0.00%</i>	<i>0.00%</i>	<i>0.00%</i>

\* In 2003, DB switched from a pricing based on the face value of the issuers' equity capital to a uniform pricing policy. The drop in the fees shown in the Table overestimates the actual drop as Lazzari (2003) proxied the face value of equity with the market cap.

Table 10: Annual Fees: Percentage Changes 2003–2009

<b>Exchanges</b>	<b>1st Percentile</b>	<b>25th Percentile</b>	<b>50th Percentile</b>	<b>75th Percentile</b>	<b>Largest</b>
BIT	-3.08%	-3.08%	-3.08%	-3.78%	-14.00%
ENXT	9.23%	18.33%	43.30%	15.00%	150.00%
LSE	-21.87%	-23.25%	-15.22%	-21.00%	-8.70%
DB	0.00%	0.00%	0.00%	0.00%	0.00%
NYSE	8.57%	8.57%	0.00%	0.00%	0.00%
NASDAQ	41.51%	25.76%	65.83%	48.33%	65.83%
TSX	46.42%	26.26%	9.76%	46.15%	46.15%
<i>Average</i>	<i>11.54%</i>	<i>7.51%</i>	<i>14.37%</i>	<i>18.10%</i>	<i>34.18%</i>
<i>Median</i>	<i>8.57%</i>	<i>8.57%</i>	<i>0.00%</i>	<i>15.00%</i>	<i>0.00%</i>

Table 11: General statistics on Self Regulated Markets (Data from WFE at 31st December 2009)

<b>Self Regulated Markets</b>	<b>Market cap (\$ million)</b>	<b>Number of listed companies</b>	<b>Admission fees parameter</b>	<b>Annual fees parameter</b>
Aim London	91,445.2	1,293	Market capitalization	None
Aim Italia	680.0	5	Market capitalization	Market capitalization
Euronext – Alternext	5,997.1	125	Market capitalization	Number of shares
DB – Entry standard	12,076.5	116	None	None

Table 12: Admission Fees at Self Regulated Markets by Issuer's Size (amounts in €)

<b>Company Features</b>	<b>1st Percentile</b>	<b>25th Percentile</b>	<b>50th Percentile</b>	<b>75th Percentile</b>
<i>Capitalization (ml. euro)</i>	<i>10.75</i>	<i>53.30</i>	<i>170.84</i>	<i>797.00</i>
<i>Number of shares (ml.)</i>	<i>57.88</i>	<i>46.34</i>	<i>431.31</i>	<i>322.67</i>
<b>Self Regulated Markets</b>				
Aim London	10,493	24,295	43,618	81,444
Aim Italia	20,000	20,000	25,626	119,550
Euronext – Alternext	10,453	35,977	92,336	313,101
DB – Entry standard	750 / 1,500	750 / 1,500	750 / 1,500	750 / 1,500

Table 13: Annual Fees on Self Regulated Markets by Issuer's Size (amounts in €)

<b>Company Features</b>	<b>1st Percentile</b>	<b>25th Percentile</b>	<b>50th Percentile</b>	<b>75th Percentile</b>
<i>Capitalization (ml. euro)</i>	<i>10.75</i>	<i>53.30</i>	<i>170.84</i>	<i>797.00</i>
<i>Number of shares (ml.)</i>	<i>57.88</i>	<i>46.34</i>	<i>431.31</i>	<i>322.67</i>
<b>Self Regulated Markets</b>				
Aim London	5,753	5,753	5,753	5,753
Aim Italia	12,600	12,600	12,600	34,112
ENXT – Alternext	18,600	14,200	23,208	29,470
DB – Entry standard	5,000	5,000	5,000	5,000