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Listing Beauty Contest – A Comparative Cost Analysis of Six Global Exchanges

Entry Standard
General Standard
Prime Standard

This brochure is based on information published in:
“Going Public and Being Public – A Global Comparison of the Impact of the Listing Decision on the Cost of Capital” by Prof. C. Kaserer and Prof. D. Schiereck.

Deutsche Börse – The International Stock Exchange Located at the Heart of Europe

Located in Frankfurt, the financial center at the heart of Europe and home of the euro and European Central Bank, Deutsche Börse is your direct gateway to the world's capital markets.

Not only are we one of the world's largest stock exchanges, we are also one of its oldest, with a history that stretches back more than 400-years. Today, we are committed to building on our rich heritage and we are widely recognized as one of the most innovative and forward thinking exchanges in existence.

We are proud of the role we have played in pioneering electronic trading – our Xetra® trading platform is regarded as one of the most reliable and advanced dealing systems in existence – and we are dedicated to delivering investors around the world the innovative solutions they need to operate efficiently.

We aim to provide a time-efficient and low-cost cross-border listing service that makes it easier for you to raise capital in all of the EU's 27 capital markets. Our listing service is based on clear and balanced regulations. We offer three market standards which match the needs of your company, whether it is young, old, small, medium or large.

- **Entry Standard:** This provides small-to-medium-sized companies with an easy, fast and cost-efficient way to access the EU's capital markets.
- **General Standard:** To list in the General Standard, companies must fulfill the minimum transparency requirements of the harmonized EU capital markets. It provides a cost-efficient listing within the EU-regulatory regime.
- **Prime Standard** offers investors the highest transparency in the EU. Companies listing in this segment have to prepare quarterly reports in English and German and publish a corporate action timetable on the Internet. They also have to hold at least one analyst conference a year. The transparency of the Prime Standard appeals to international investors, especially those who want to make comparisons of your company's prospects with those of your peers.





We are dedicated to helping you raise the capital you need to establish the market profile your company deserves. And according to a recent study by Professors Christoph Kaserer¹⁾ and Dirk Schiereck¹⁾, both renowned academics in the field of finance, Deutsche Börse is quite simply the most cost-efficient market place for international Initial Public Offerings (IPOs). We provide all the support you will need through all the stages of going public. And we will continue to help you once you are a listed company. Listing with us allows you to attract new investors in the most cost-efficient manner, helping your company reach its true potential.

We are proud that companies from over 70 countries are now listed on the Deutsche Börse. Over 60 per cent of our daily trading volume originates from

investors outside Germany. We believe these facts speak for themselves and provide good and simple measures of our success.

An attractive cost structure is a key advantage for any exchange. Deutsche Börse provides companies looking to access the international capital markets with the most time- and cost-efficient IPO process there is. The decision about which exchange to list on should require careful thought about what going public really costs. Can you really afford not to consider the Deutsche Börse, the most cost-efficient listing venue?

1) This brochure is based on information found in the following publication: Professor Christoph Kaserer, Chair of Financial Management and Capital Markets & Center for Entrepreneurial and Financial Studies at the Technical University of Munich and Professor Dirk Schiereck, Endowed Chair of Bank and Finance Management at the European Business School in Oestrich-Winkel (2007) "Going Public and Being Public – A Global Comparison of the Impact of the Listing Decision on the Cost of Capital." For a full-length version of the study, please visit www.deutsche-boerse.com.

Understanding the Costs of Capital

When deciding which listing venue is best, entrepreneurs may be surprised by the differences in the costs and fees of going public. Most transparency and capital market rules are regulated by the authorities. However, the cost of capital is a hidden opportunity, which you can actively exploit to your entrepreneurial advantage. Therefore, it makes financial sense to make an appraisal and accurate comparison of all the costs involved with being public.

But how do you form a complete understanding of what the true costs of capital are?

Seeing through the cost fog

The attractiveness of Deutsche Börse as a listing venue is supported by evidence produced in the study by Professors Kaserer and Schiereck. They looked at a sample of over 2,200 companies which listed on Deutsche Börse and five other international exchanges from the beginning of January 1999 until the end of March 2007. They then made a direct comparison and independent analysis of their true capital costs. The table below shows the market segments of Deutsche Börse and five other leading exchanges which were studied.

The hard facts about tough questions

The decision to go public can entail substantial costs for your company. At times, these can be hard to quantify. Professors Kaserer's and Schiereck's inde-

pendent analysis of all the direct and indirect costs of listing makes it easier to understand what these costs really are, answering the crucial questions you have to ask before you settle on a listing venue.

The most important questions you need to ask are:

- What total costs will we have to pay when we hold our IPO?
- What will our true costs be once we are a listed company?
- How will the exchange we list on affect our costs?
- How does trading liquidity influence the share price of our company?

The study used a set of parameters to answer these questions and then quantify the overall costs of listing. It found that charges vary and that often, if something is provided cheaply, something else will be expensive to compensate.

It is crucial, therefore, that any company intending to go public can make a valid and accurate comparison of all the costs involved. Professors Kaserer and Schiereck devised a scoring model to provide a clear and concise comparison of the total cost of listing on the six exchanges they analyzed. This is now available, making it easier for you to make an informed decision about which exchange is the best venue to list on.

Market segments by stock exchanges

Stock Exchange	Main Markets	Alternative Markets
Deutsche Börse	Prime and General Standard	Entry Standard
Euronext	Eurolist	Alternext
Hong Kong Stock Exchange (HKSE)	Main Board	Growth Enterprise Market (GEM)
London Stock Exchange (LSE)	Main Market	Alternative Investment Market (AIM)
NASDAQ ¹⁾	Large Caps	Small Caps
NYSE ¹⁾	Large Caps	Small Caps

1) No differentiation between main markets and alternative markets.

Ranking Listing Venues

The results from Professors Kaserer's and Schiereck's study are presented in the following table. Four variables relate to the indirect cost of being public and four variables cover the direct cost of going and being public. These parameters are considered the most important issues for any firm that is considering holding an IPO. The scores are based on relative deviation from the mean value for each category:

1 = very good, 2 = good, 3 = satisfactory,
4 = bad, 5 = very bad.

The results are shown for both the main and the alternative markets.

The results show that Deutsche Börse's Prime Standard and General Standard, with an overall mean score of 2.0, are the most attractive listing venues among the main markets. The Entry Standard, with an overall mean score of 1.9, is the most attractive listing venue of the alternative markets. All three of Deutsche Börse's market segments performed strongly against the benchmark criteria. The results speak for themselves – the Deutsche Börse is the most attractive listing and trading platform for companies, whether small, medium, large, young or old.

Discover more about the benefits of listing on Deutsche Börse on the following pages.

Ranking for main and alternative markets

	Rspread	TVO/MV	VOL	ZTR	IPO-TFC	SEO-GS	Admission Fees	Listing Fees	Overall Score
Main Markets									
Deutsche Börse: Prime/General Standard	2	2	3	1	3	3	1	1	2.0
HKSE: Main Board	3	3	3	5	3	2	1	3	2.9
NYSE ¹⁾ : Large Caps	1	3	3	3	3	3	4	4	3.0
Euronext: Eurolist	3	5	3	3	2	3	5	1	3.1
LSE: Main Market	5	3	3	5	3	2	5	1	3.4
NASDAQ ¹⁾ : Large Caps	3	3	4	2	3	5	3	5	3.5
Alternative Markets									
Deutsche Börse: Entry Standard	2	1	3	1	3	3	1	1	1.9
NYSE ¹⁾ : Small Caps	1	1	2	1	3	3	5	5	2.6
Euronext: Alternext	4	5	3	1	2	3	3	1	2.8
NASDAQ ¹⁾ : Small Caps	1	1	3	1	3	5	5	5	3.0
LSE: AIM	5	5	3	5	4	2	1	2	3.4
HKSE: GEM	4	4	3	5	5	3	1	3	3.5

Rspread = Relative Spread, TVO/MV = Trading Volume/Market Value, VOL = Volatility, ZTR = Zero-Trade-Ratio, IPO-TFC = Initial Public Offering-Total Flotation Cost, SEO-GS = Season Equity Offering-Gross Spread (Gross Spread refers to the underwriting fee)
These parameters are explained further in this brochure.

1) Since there is no differentiation between main markets and alternative markets at the NYSE and NASDAQ, Professors Kaserer and Schiereck artificially created small and large segments for companies with market capitalizations of less and more than €100 million respectively. This was only used for analysis of the initial total flotation costs. For the other parameters no distinctions were made and the same values were taken for both segments.

The Cost of Listing

Companies have to judge whether the benefits of listing are greater than what it costs to go public. Broadly, there are two different types of costs to consider:

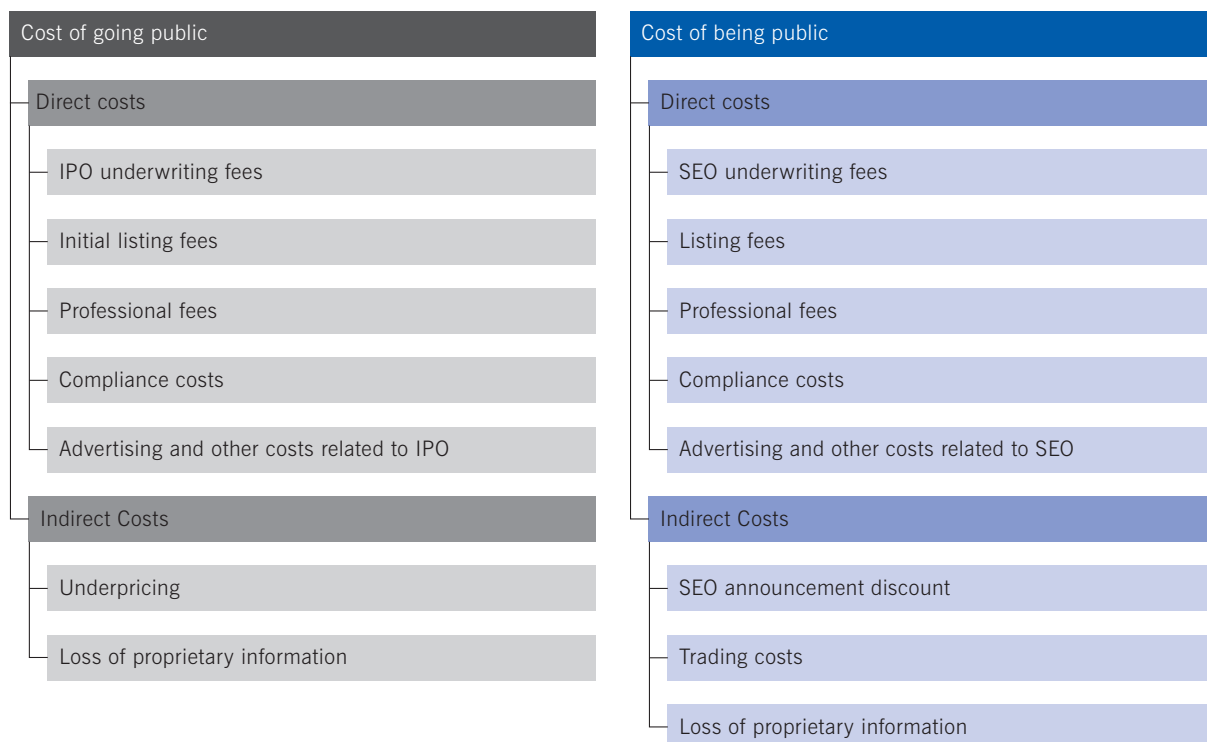
- The direct costs of holding the IPO, and;
- Ongoing listing costs, including those associated with any future Seasoned Equity Offering (SEO).

These two categories can be sub-divided into direct and indirect components. All the expenses incurred at the IPO are classified as direct costs. These include underwriting, legal and accounting fees. Direct costs also cover the fees paid to the exchange, advertising

and marketing expenses, and fees from rules and regulatory compliance. As the graph shows, underpricing is another indirect cost.

Once your company is listed, you need to consider the ongoing direct fees you will have to pay, such as exchange and professional fees. But indirect costs, which may not be so apparent, can be just as important. These include the trading costs incurred by yourself and your investors.

The transaction costs of the listing decision



The Cost of Going Public

Flotation Costs – Deutsche Börse’s compelling value proposition

When going public, your initial focus should be on your total flotation cost. This has two key components: underwriting fees, which are paid to the investment banks and non-underwriting fees, such as the lawyers’ and auditors’ charges, as well as other expenses.

Among the main markets, Euronext, the NYSE and Deutsche Börse provide the lowest total initial flotation costs compared with their peers. The same picture emerges for the alternative market. The LSE’s AIM and the HKSE’s GEM are far behind Euronext’s Alternext and Deutsche Börse’s Entry Standard markets. The ranges of the total flotation costs are illustrated in the graphic below.

The average of the total IPO flotation cost was 7.6% of the gross offering proceeds at Euronext, 7.7% at the NYSE, 8.3% at the Deutsche Börse, 9.5% at NASDAQ, 12.6% at the LSE and 14.6% at the Hong Kong Stock Exchange.

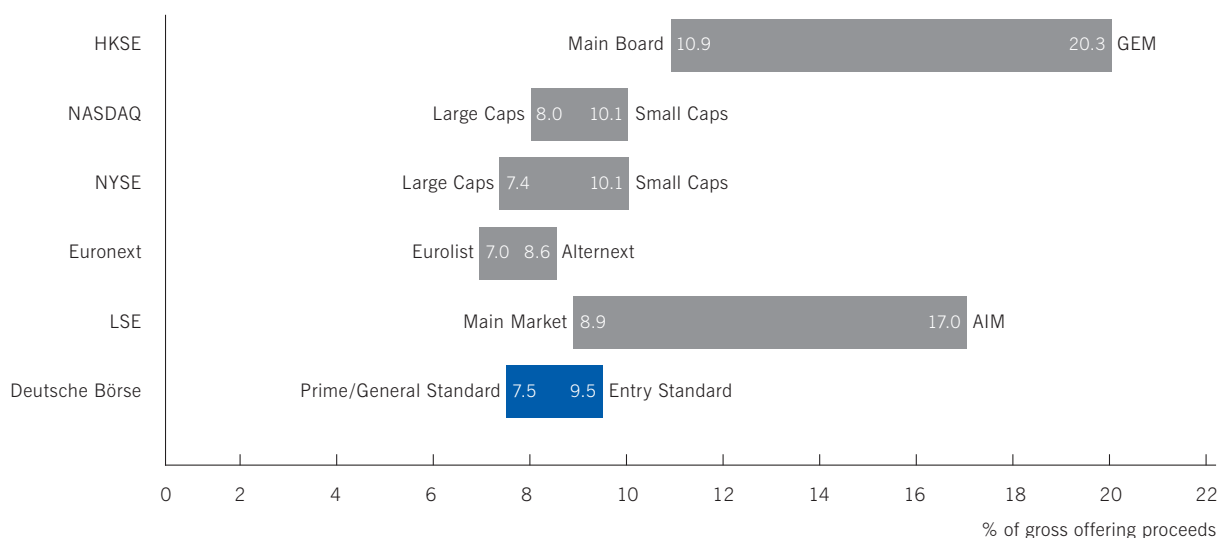
Paying the price of admission

It is also wise to look at the prices of admission. There is a huge variation in the admission fees charged by the six exchanges analyzed by Professors Kaserer and Schiereck. They found that Deutsche Börse was the most competitive for companies of all sizes.

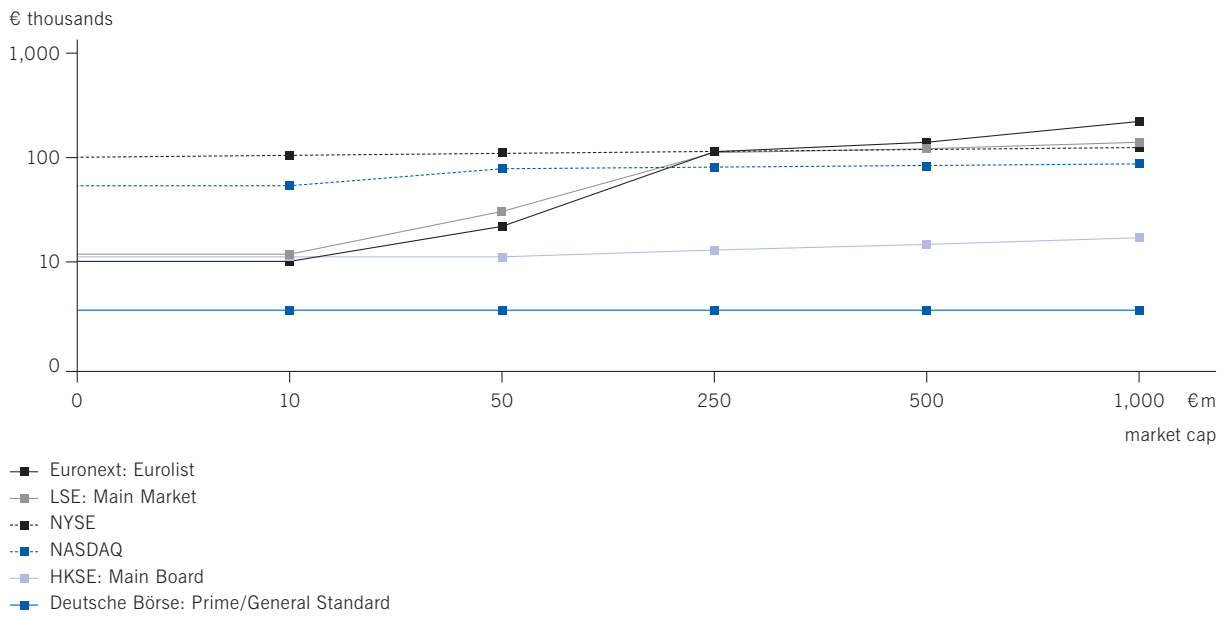
For companies with a very large market capitalization, the authors found that Euronext is the most expensive market to list on and the LSE, NYSE and NASDAQ are all substantially more expensive than Deutsche Börse.

The same is also true for the alternative markets. In particular, NYSE and NASDAQ are very expensive venues for small companies to list on.

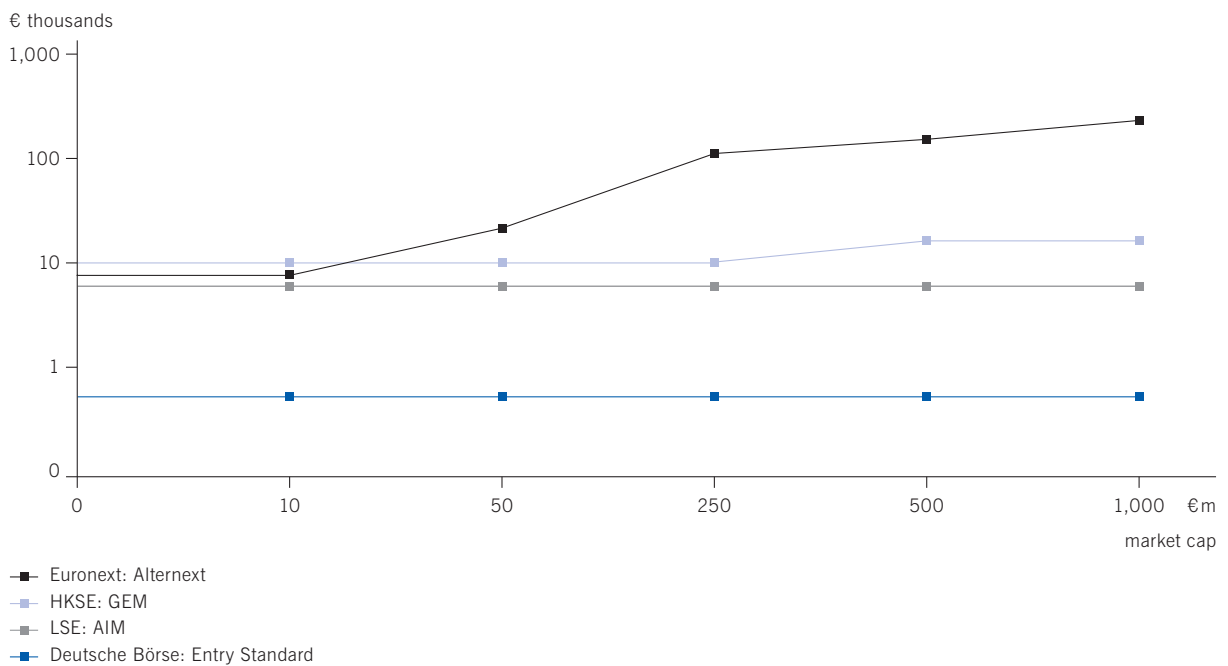
Ranges of total initial flotation costs for main and alternative markets



Admission fees for main markets



Admission fees for alternative markets



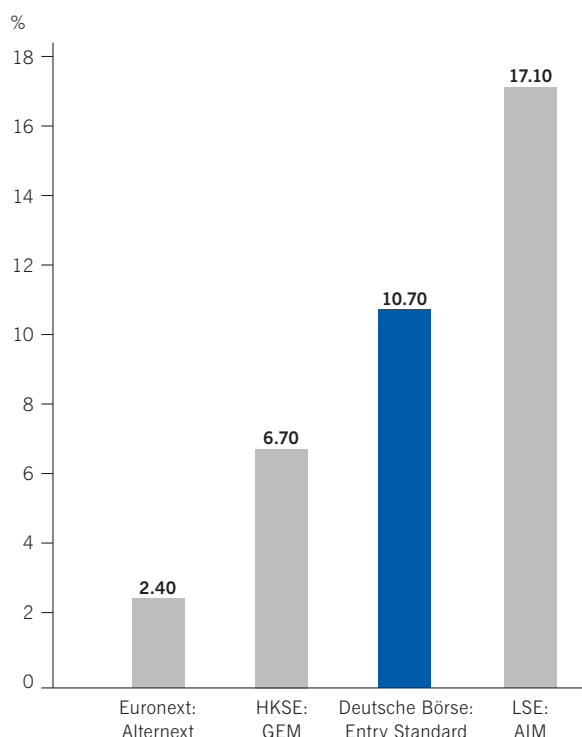


Underpricing: Getting the balance right

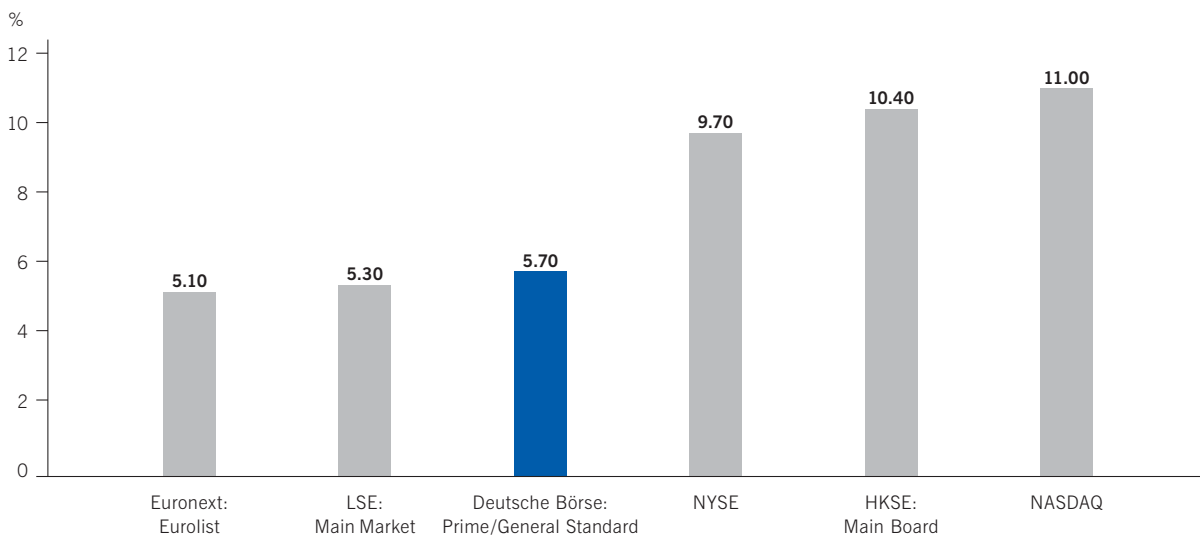
Setting the right price for your company’s IPO can be a difficult balancing act. Attracting investor interest is vital, but you will obviously not want to do so by selling shares in your company too cheaply. If you do, your IPO will result in a significant indirect cost for your company. However, setting too high a price may serve to dampen investor interest.

According to Professors Kaserer and Schiereck, a moderate underpricing best serves the interests of both investors and issuers. They state: “Deutsche Börse seems to provide the optimal condition for aligning these different interests.” The conclusion is IPOs held on Deutsche Börse are generally neither over- or underpriced.

Underpricing for alternative markets



Underpricing for main markets



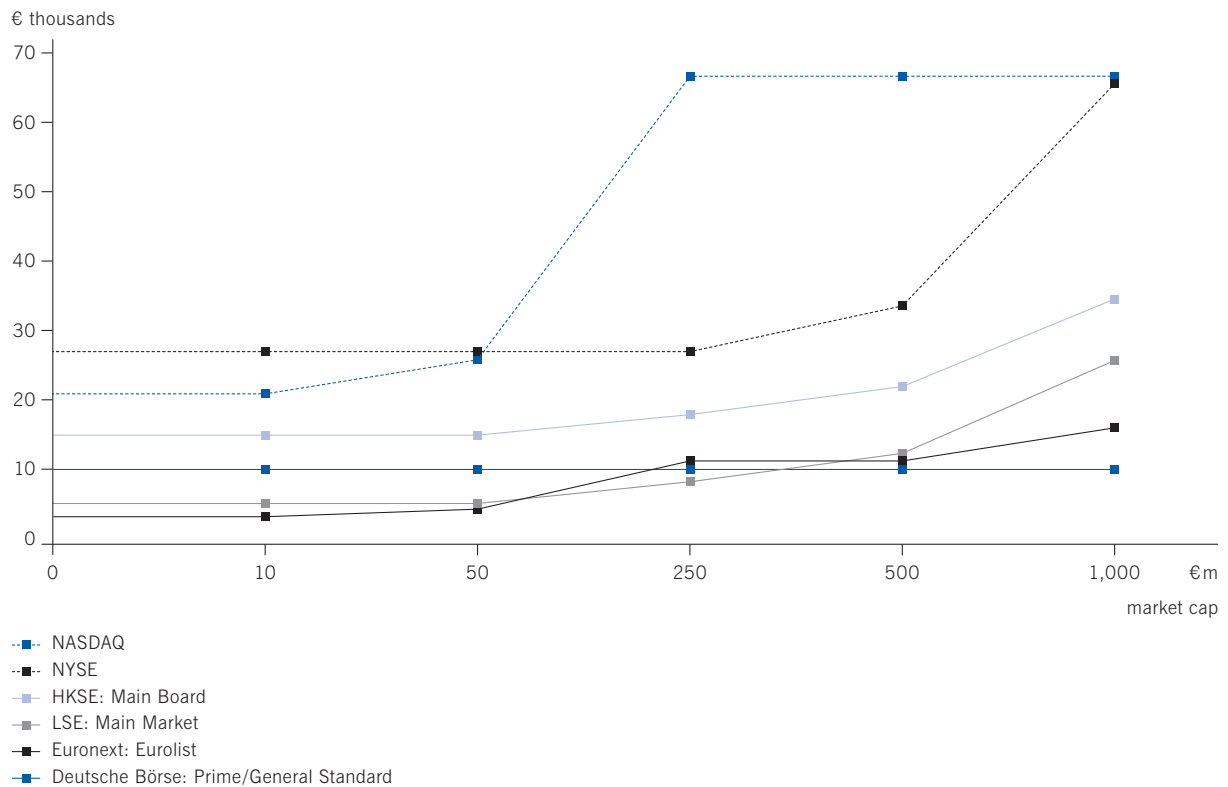
The Cost of Being Public

Beware of ongoing listing fees

Listing fees vary substantially across stock exchanges, particularly for large companies. Deutsche Börse's Prime Standard offers the most attractive fee structure

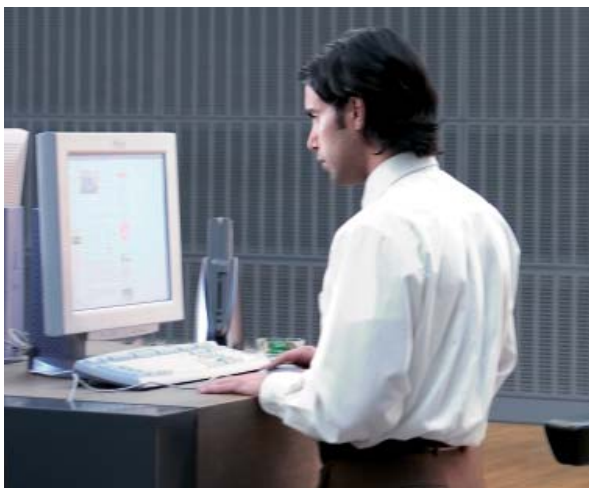
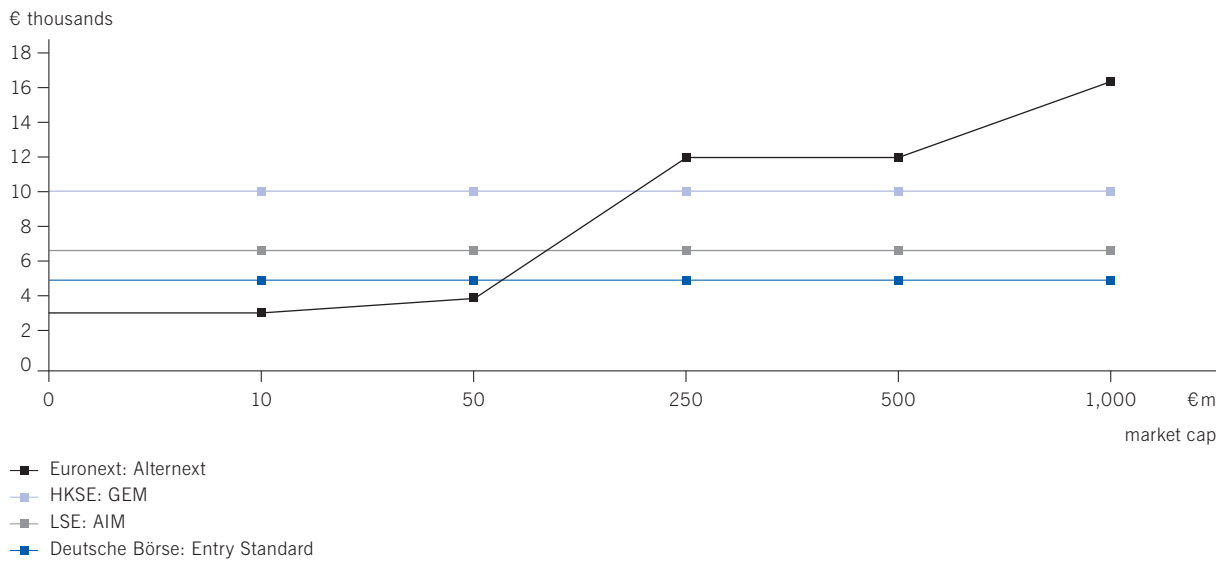
of the six big exchanges for large companies with a market capitalization of more than €250 million. The NYSE and NASDAQ are the most expensive.

Listing fees for main markets



The difference in listing fees for small companies is less pronounced, but Deutsche Börse's Entry Standard is again extremely competitive.

Listing fees for alternative markets



The impact of liquidity on costs

Although not so easy to measure, the impact of liquidity on trading costs should be carefully considered when you make your choice about which exchange to list on. This is because investors are increasingly looking to maximize the net returns on their portfolios. They may be willing to pay a higher price for your shares if the total transaction costs of trading are low. This can impact your gross return when you list and look to raise further equity through the stock market.

If the overall transaction costs are relatively high, investors have to be compensated with a higher gross return, either in the form of capital gains or received dividends. This ultimately feeds through to your company. It is estimated that a modest 10% increase in transaction costs lead to a 1.4%–1.7% increase in the post-tax cost of equity capital.

Overall transaction costs can be split into explicit and implicit trading costs.

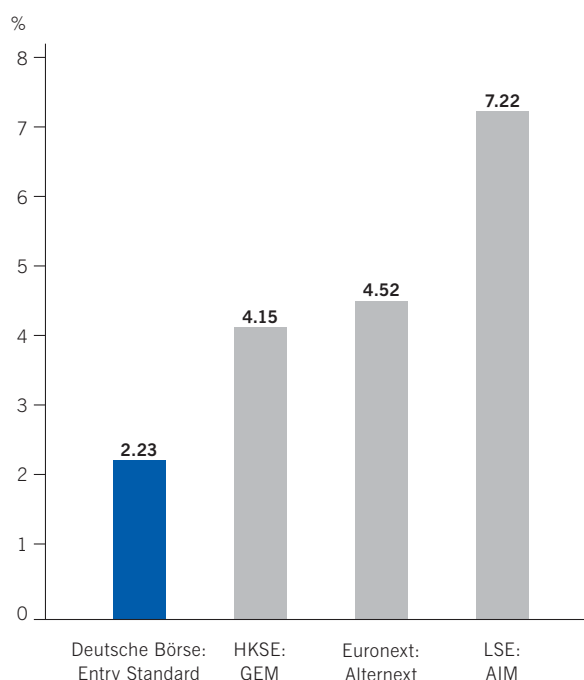
Implicit costs – the value of narrow spreads

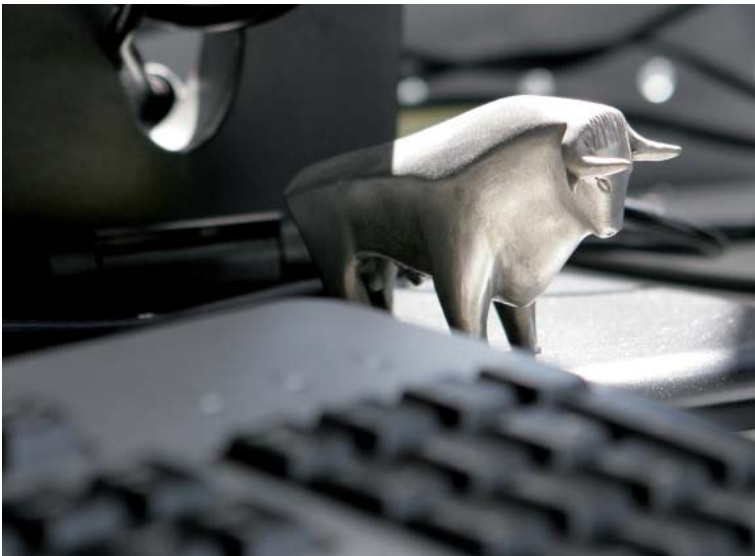
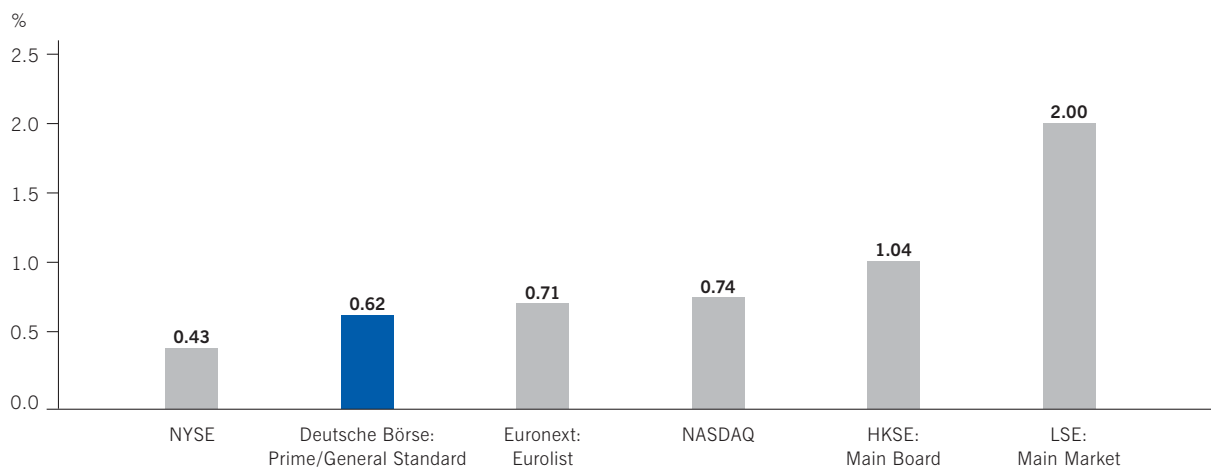
All too often, both investors and issuers fail to realize the impact of implicit costs, which are primarily dictated by the liquidity of the underlying stock and the difference between its buying and selling price – its relative spread. Deutsche Börse has put in place initiatives to lower implicit trading costs. Among the main markets, only the NYSE can claim it has a lower relative spread than Deutsche Börse.

For small companies, implicit costs are an even bigger consideration. The spreads found on our Entry Standard segment are by far the most competitive of the six major stock exchanges analyzed by Professors Kaserer and Schiereck.

It is a simple equation: greater liquidity + low dealing charges = lower cost of capital

Relative spreads for alternative markets



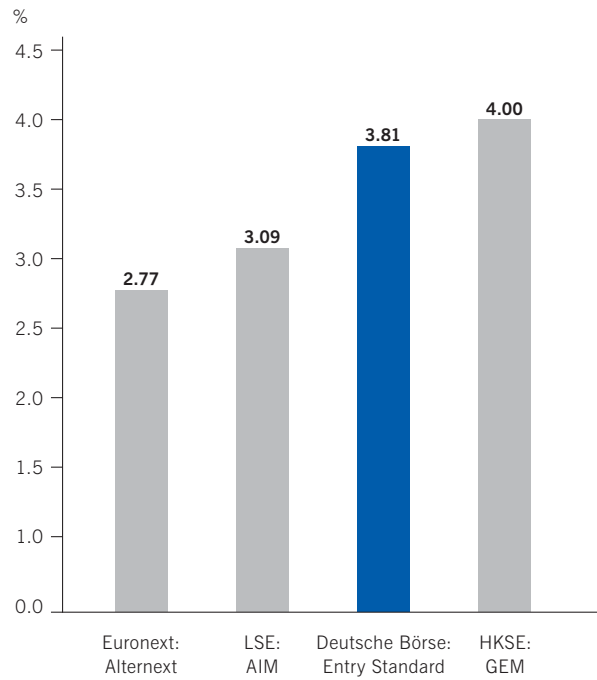
Relative spreads for main markets

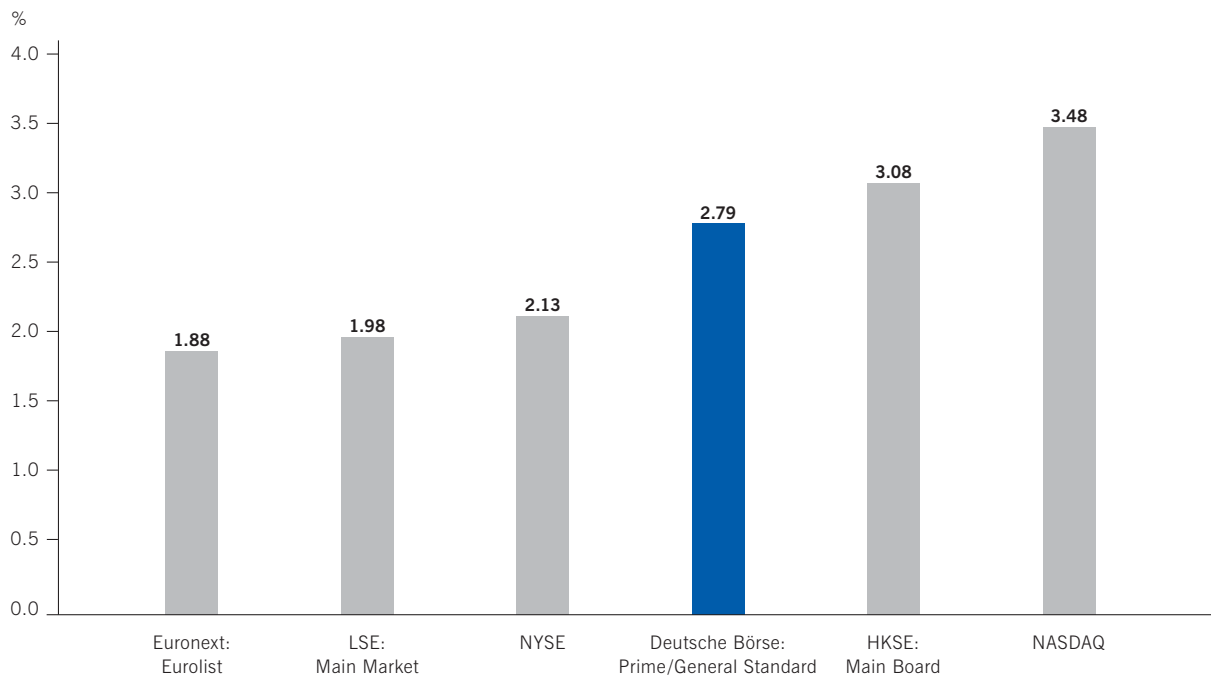
The impact of volatility

Stock return volatility (VOL) is the standard deviation on daily returns. Low volatility is sometimes seen as another indicator of good liquidity. Looking at the main markets, the VOL of firms listed on Deutsche Börse’s Prime and General Standard market segments (2.79%) is significantly lower than that for large-cap companies listed on the HKSE and NASDAQ, but not as low as that found on Euronext, the LSE and the NYSE.

VOL ranges from around 2.77% to 4.00% on the alternative markets. The VOL of firms listed on our Entry Standard comes in at 3.81%, close to the higher end of the range.

Stock return volatility for alternative markets



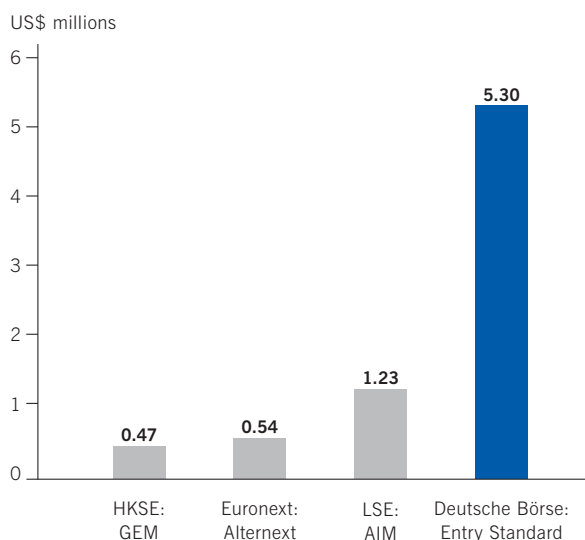
Stock return volatility for main markets

Higher trading volume helps build liquidity

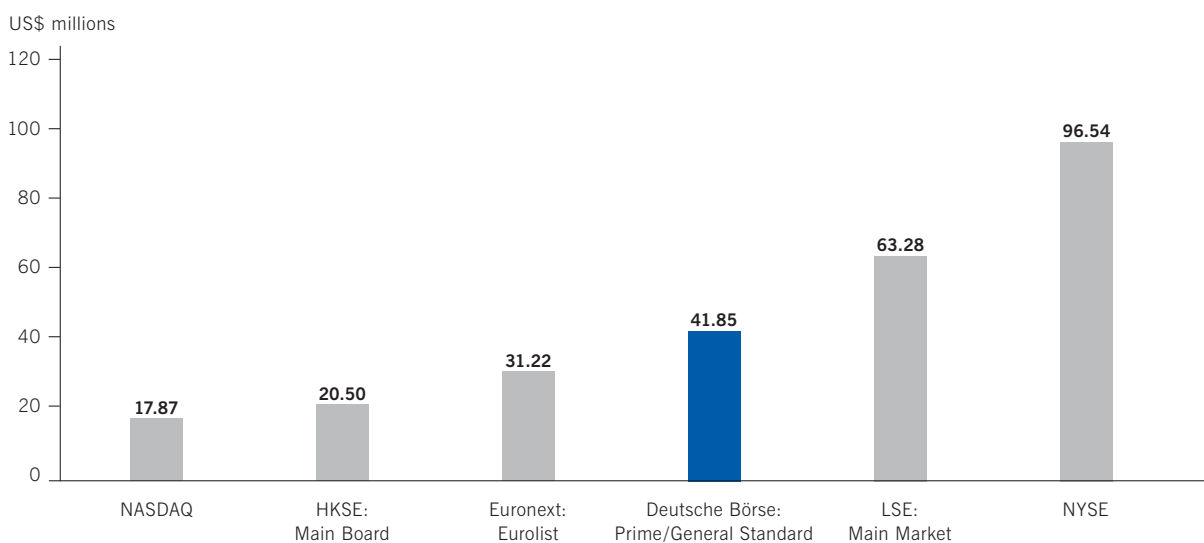
Trading volume is one of the key components of a stock’s liquidity. The average value of the stock traded for each company listed on our Prime Standard market is US\$ 41.85 million. Although less than the average value of turnover on the LSE and NYSE, it is higher than the levels seen on the main markets of Euronext, the HKSE and NASDAQ.

Our Entry Standard market is the most liquid of the alternative markets when measured by the average value of stock turned over each day. Around US\$ 5.3 million worth of shares change hands each day, a value far higher than that found on the LSE’s AIM, Euronext’s Alternext and the HKSE’s GEM.

Daily trading volume per stock for alternative markets



Daily trading volume per stock for main markets

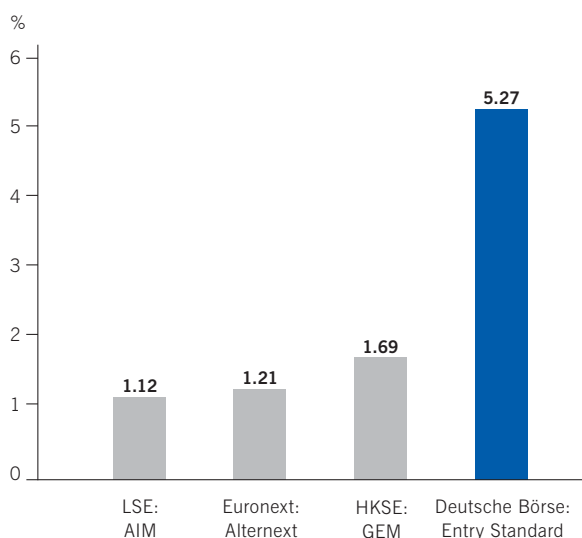


Turnover velocity – another indicator of liquidity

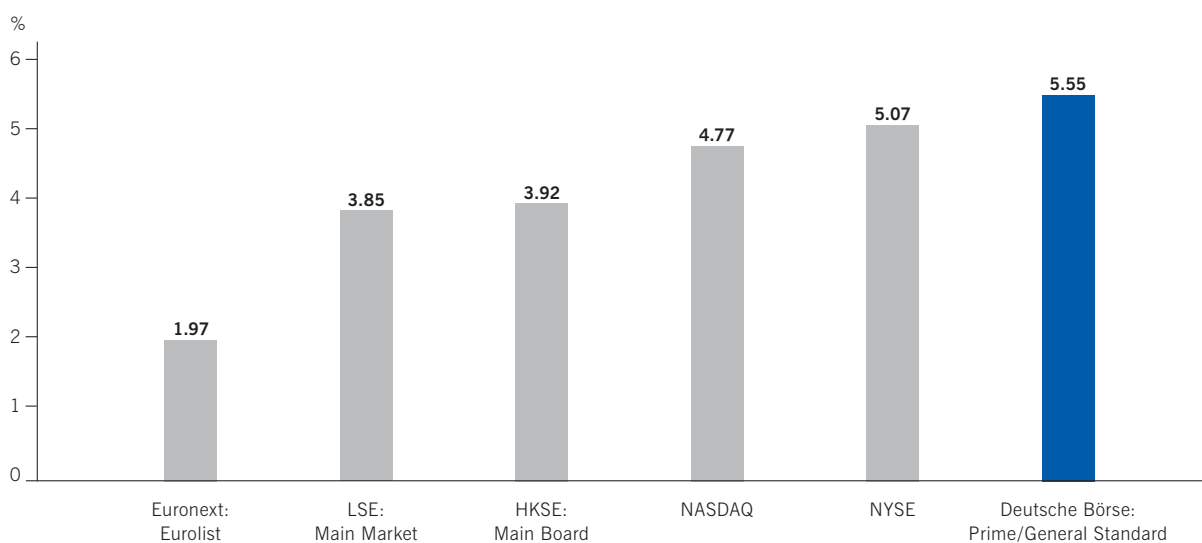
Turnover velocity is another way to measure a stock’s liquidity. It is calculated by dividing a stock’s trading volume (TVO) by its market value (MV). After you hold your IPO, it is important to establish a solid turnover velocity for your company’s shares – after all, initial impressions always count.

The turnover velocity of the shares of companies listed on Deutsche Börse in their first five days of trading is higher on our main and alternative markets than that seen on the LSE, Euronext, the NYSE, HKSE and NASDAQ. In other words, companies listing on Deutsche Börse attract good investor attention from the moment they list.

Turnover velocity for alternative markets



Turnover velocity for main markets

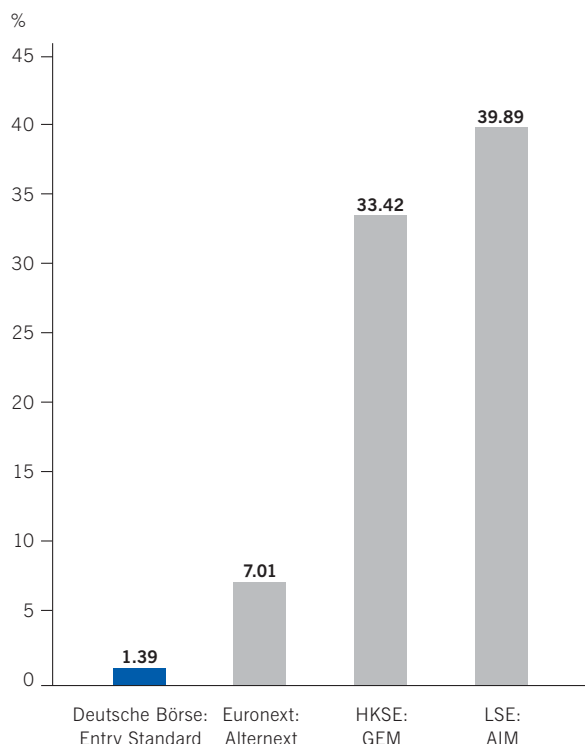


Zero-Trade-Ratio – A Measure of Poor Liquidity

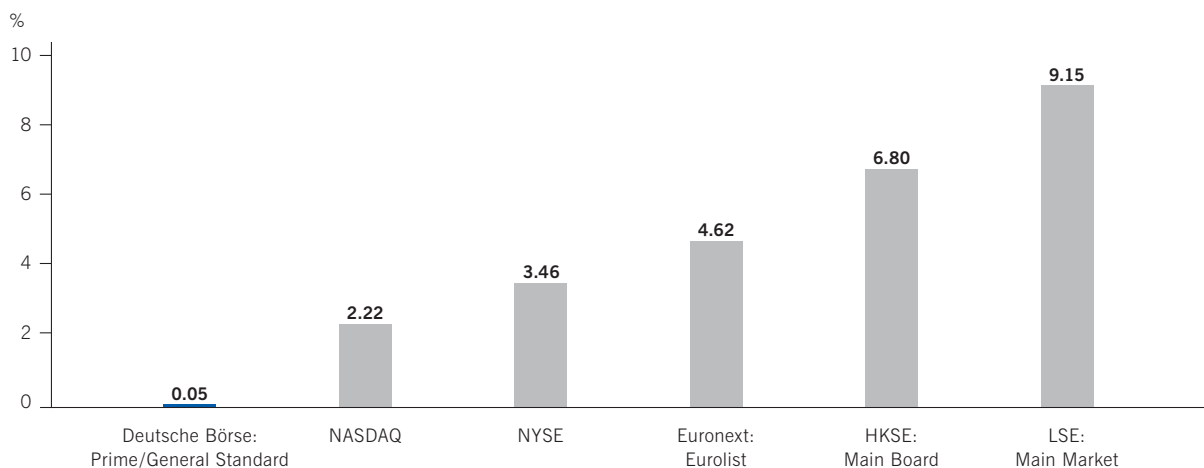
Because investors will often only invest in stocks that have good liquidity, a lack of activity can be potentially bad for your company’s share price. The zero-trade-ratio (ZTR) is a measure of inactivity and it is calculated on a daily basis to show how many stocks listed on an exchange have no turnover. The ZTR on our Prime Standard and General Standard is far lower than that on other main markets, further proof that investors are more likely able to buy and sell the shares of larger companies listing on Deutsche Börse than on other exchanges.

The same is also true for the alternative markets. Listing on our Entry Standard is far more efficient in generating investor attention and actually providing an environment where your shares trade than on Euronext’s Alternext, the HKSE’s GEM or the LSE’s AIM.

Zero-Trade-Ratio for alternative markets



Zero-Trade-Ratio for main markets

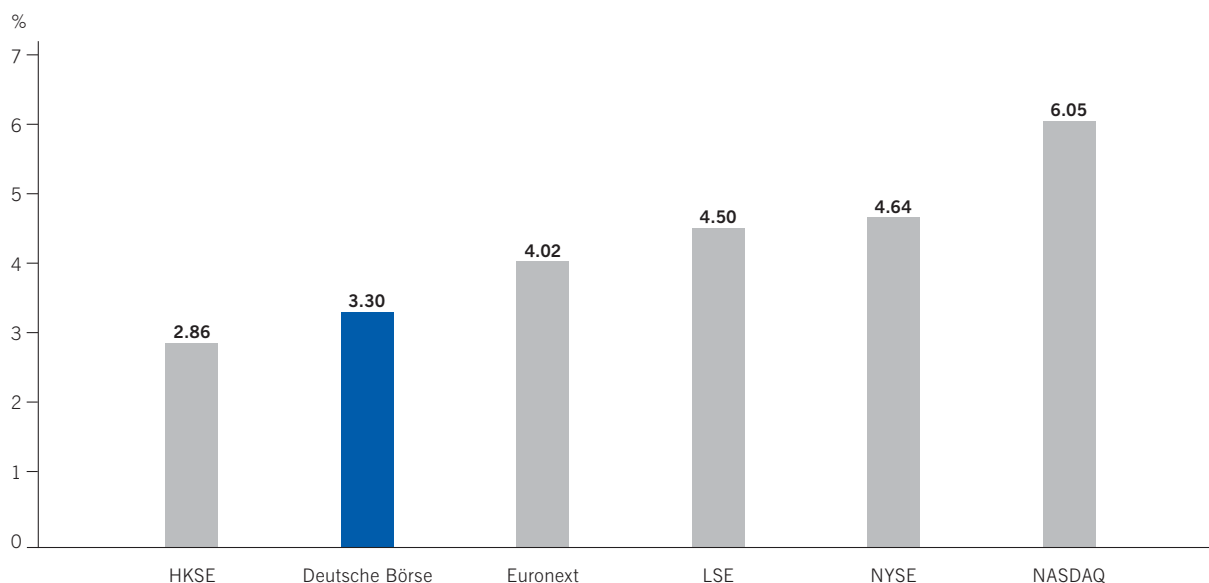


Seasoned equity offerings

Once listed, you may wish to raise further capital through a Seasoned Equity Offering (SEO). Just as with the IPO, you have to examine all the costs involved in the SEO process. The combination of explicit and implicit costs all add up to make Deutsche Börse an extremely efficient location for SEOs, particularly if you wish to access the EU's capital markets. SEOs are more expensive on the LSE, Euronext, the NYSE and NASDAQ, another solid reason to list your company on the Deutsche Börse.

Just as with the IPO, total SEO flotation costs can be broken down into underwriting and non-underwriting fees. According to Professors Kaserer's and Schiereck's study, the Deutsche Börse's median SEO underwriting fee (3.00%) is lower than Euronext (3.83%), the NYSE (4.25%) and NASDAQ (5.26%). The underwriting fees for HKSE and LSE are slightly better. A fuller explanation of how these results were derived can be found in the original study.

Median SEO total flotation costs



Helping to Grow your Company

At Deutsche Börse, we are proud of the listing platform and services we provide. But as well a cost-effective and efficient solution, we recognize that you may well need further help as you take your company forward.

Our Deutsche Börse Listing Partners are experienced experts, who are ready to provide you with all the advice you need.

Profiles of our current Deutsche Börse Listing Partners can be found in the Listing Center on our website at: www.deutsche-boerse.com > Listing > Listing Partner

Our listing center provides you with an overview of current stock exchange issues, dates and statistics. Please visit www.deutsche-boerse.com > Listing

Current market information on trading on the Frankfurt Stock Exchange can be found via the investor portal www.boerse-frankfurt.de

We invite entrepreneurs to meet us personally and we regularly hold events across Europe, covering topics such as:

- IPO workshops
- Capital market conferences, such as the German Equity Forum and the Entry and General Standard Conference
- Deutsche Börse Spotlights: Sector conferences
- stocks & standards workshops: Information and exchange of experience

Deutsche Börse offers a wide information service for companies considering a listing. These include:

- IPO Test: Online check of your IPO readiness
- IPOint: A meeting with Deutsche Börse for companies considering an exchange listing
- Deutsche Börse's Issuer Guide: A handbook for going public candidates
- Welcome Event: A celebration of your IPO on the exchange's trading floor
- Free access to Investor Guide Online. This helps companies analyze their international institutional investor structure and to strategically target investors.
- Stock Report: A free monthly compilation of the latest trading data for your company's shares.

Further Information

Please contact Deutsche Börse Issuer & Investor Markets for further information.

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We look forward to meeting you and then working with you to help you access capital in the most cost-effective and efficient manner.

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