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Does being listed in the US lead to better valuation?

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1. Introduction

The motivation for this research paper arose from observing a recent trend in companies delisting from European exchanges and moving to US exchanges. This phenomenon prompted us to investigate the underlying reasons behind such decisions and to determine whether they align with existing literature, which suggests that US listings yield higher valuations. Historical research has confirmed this valuation advantage during two distinct periods, indicating that firms cross-listed in the US generally enjoy better market performance and corporate governance improvements.

To delve deeper into this trend, we selected and analysed several recent cases of companies that transitioned their primary listings to the US. Our objective was to identify any common underlying reasons that might explain this movement. The case studies included companies such as Linde, CRH, Smurfit Kappa, Flutter Entertainment, and Arm Holdings. Through our analysis, we identified several recurring themes that reinforce the literature's findings on the benefits of US listings, such as valuation limitations due to EU regulations, increased exposure, and enhanced US liquidity, regulatory and operational efficiencies of the US system all lead to a crucial common point: the US offers the higher valuation potential and the greater shareholder value.

Our findings suggest that these common underlying reasons make the case for the decision to delist from European exchanges and move to US exchanges. This finding led us to conclude that delisting is less of an individual or random strategic choice and more of a response to structural issues, and therefore we identified the quality gap. The quality gap between listing locations has significant implications, as it impacts the economic competitiveness of the regions involved.

A notable example is Arm Holdings, a European company and the IP owner of crucial CPU and GPU technologies that, for instance, enable Nvidia to innovate and manufacture at its current level, moving its listing from Europe to the US.

To address this issue and enhance the competitiveness of European exchanges, we offer recommendations to regulators. The four pillars of our recommendations are consolidating stock exchanges to reduce fragmentation and improve efficiency, lowering entry barriers to attract more IPOs, transitioning to T+1 settlement to align with global standards and reduce risks, and increasing liquidity through pension fund investments to leverage the significant capital from Europe's aging population. These recommendations aim to reduce the regulatory constraints and improve the attractiveness of European exchanges, ultimately strengthening the region's economic competitiveness. By closing the quality gap, Europe can retain its leading companies and attract new ones, fostering a more robust and dynamic economic environment.

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2. Overview of Literature

Starting our research paper we will give an overview of the available literature on the given topic. The phenomenon of companies shifting their primary listing to the US as we are observing currently, is a recent one. Therefore, research papers on the question above are not available in abundance. Instead, we found more work on the topic of cross-listings to the US, which we find relevant since they can help explain the potential advantages to a firm's valuation due to the exchange location. We will briefly detail the strengths of the US listing location and then continue with our case studies that utilize those advantages next to more individual ones on a case-by-case basis.

The available research we analysed generally finds that cross-listing to the US is advantageous to firms and can be the reason for increases in their valuation. The literature we looked at dates back to the 90s when globalization was less developed and the technical side of the stock market played a bigger role in answering our research question. This could have explained the differences in the past, but it seems that this cross-listing premium has remained present until today. Research by Craig Doidge et al. (2009) compared the New York and London stock exchanges from 1990 to 2005 based on the observation that the number of listings in the US has been decreasing more rapidly compared to the UK – an overall trend of firms delisting that is still ongoing today[1]. The results, however, showed that it was not the competitiveness of the US market that was falling behind, but rather the attractiveness of an IPO in general as access to private capital improved (Doidge et al., 2009). The US market actually proved to be more beneficial for firms as capital raising activities increased for those that cross-listed in the US, while they did not for cross-listings to London (Doidge et al., 2009). Understanding why the US market is beneficial to firms and investors is key to our analysis. The preceding paper finds improved corporate governance as the deciding factor because firms that are listed in the US

[1] Details can be found under: https://focus.world-exchanges.org/articles/number-listed-companies

"opt[…] into the US investor protection regime, which includes securities laws and regulations, regulatory oversight and enforcement by the Securities and Exchange Commission (SEC), and monitoring by gatekeepers such as analysts and institutional investors". The authors further state that they "focus on this benefit because it crucially distinguishes among different types of listings and because the benefit of listing that most financial economists focused on in the past, namely, overcoming barriers to international investments, is losing its relevance in an increasingly global financial marketplace". (Doidge et al., 2009) Taking these observations and interpretations into account will help us better understand the motivations for cross-listings and ultimately assist in answering our research question.

2.1 Strengths of Being Listed in the US Financial Markets

The first step to answering our research question is understanding the strengths of being listed in the US financial markets to identify the factors that could lead to improved valuations. We found a variety of advantages in the given literature and will go through them individually, understand their significance, and compare them to some cases of cross-listings that happened recently.

2.1.1 Better Information Environment

The company that is listed in the US versus the company that has its listing(s) only outside of the US may be valued more due to the higher accuracy of the information surrounding it. This can come from the specific regulations that the US puts on public companies, from the quantity and quality of financial analysts that are active in the US and cover mainly if not solely US-listed companies, or it may be something else. Three American professors published their research on this topic in 2002 with their paper titled "ADRs, Analysts, and Accuracy: Does Cross Listing in the United States Improve a Firm's Information Environment and Increase

Market Value?". It examines the impact of American Depositary Receipts[2] (ADRs) on the information environment and market value of non-US companies listed on US stock exchanges. The study investigates whether cross-listing in the US enhances the accuracy of information available about these firms and if it leads to an increase in their market value. The paper explores the mechanisms through which the US market's regulatory environment may contribute to better corporate transparency and higher valuation. It utilizes data on ADRs and analyses the effects of listing on information quality and various measures of market performance, such as stock returns, changes in trading volumes, and the bid-ask spread before and after ADR issuance. The US stock market is known for stringent regulatory standards that impact the information environment of foreign firms listed as ADRs. These include relatively strict disclosure requirements enforced by the Securities and Exchange Commission (SEC), adherence to US Generally Accepted Accounting Principles (GAAP), and increased transparency obligations. The Sarbanes-Oxley Act announced in the year the paper was published, imposed strict governance and financial reporting standards, aiming to enhance corporate accountability and protect investors. (Lang et al., 2002)

The results of the paper reveal that ADRs significantly enhance the market value and improve the information environment of the firms that opt for cross-listing in the US Firms that issue ADRs generally experience an increase in market value, evidenced by a rise in stock prices and trading volumes following the ADR issuance. There is an increase in the number of analysts covering the firms post-listing. Additionally, the accuracy of earnings forecasts by these analysts improves, suggesting an enhanced information environment due to the regulatory standards and greater scrutiny in the US markets. The bid-ask spread, which is an indicator of information asymmetry among investors, shows a decrease after the ADR issuance. This

[2] A depositary receipt is a negotiable instrument issued by a bank to represent shares in a foreign public company, which allows investors to trade in the global markets. (CFI Team, 2024)

reduction is indicative of a more transparent and reliable information environment that benefits all market participants.

These findings provided the first evidence of its kind towards many years of theory in the literature that suggested "informational disclosure plays a key role in the cross-listing decision" (Lang et al., 2002). Thereby, supplementing two other strengths that a cross-listing provides – lower cost of capital and improved corporate governance.

2.1.2 Corporate Governance Improvements

Starting with the latter, corporate governance improvements, we found some literature stating that it is key to understand the implications of it when examining the valuation differences of cross-listed companies to their peers. One paper particularly suggests that depending on the origin country of a company that decides to cross-list, the valuation impact according to corporate governance varies significantly. (Doidge et al., 2001) The reason is the impact on investor protection, as the authors find. The valuation premium for companies from countries with weaker investor protection, such as emerging countries, but also developed markets with civil laws, such as France and Italy, is significantly higher. That means cross-listing to the US for those countries is more likely to be beneficial because investors will have more confidence and invest higher amounts thus valuing the firm more. The study finds that the main parts of the valuation premium can be attributed to reduced opportunities for controlling shareholders in listed firms to extract private benefits, compared to their unlisted counterparts. Furthermore, the paper suggests that firms listed in the US are more capable of leveraging growth opportunities due to better alignment of interests between controlling shareholders and other shareholders. This is especially true for firms originating from countries with weaker investor protections. The study supports these claims with data indicating that expected sales growth is valued more highly in US-listed firms and that this effect intensifies in companies from countries with poorer investor rights. Additionally, the authors find that overcoming market segmentation can explain parts of the valuation premium. Firms that cross-list in the US gain access to a larger and more diverse investor base and can increase demand for their equity, thus increasing their firm's valuation. (Doidge et al., 2001)

Another paper called "The World of Cross-Listings and Cross-Listings of the World: Challenging Conventional Wisdom" written by G. Andrew Karolyi (2006), an American professor, underlines many of the arguments and makes additional, more in-depth findings concerning the valuation premium. For one, the author finds that cross-listing to the US will likely increase the share of large institutional investors, who actively monitor the firm's performance and governance practices, in the overall ownership of the company. This increased scrutiny helps improve corporate governance and firm value. (Karolyi, 2006) The paper also covers and stresses the role of analysts and media, which can improve the firm's information environment and thus the valuation, especially for companies from countries with poor governance practices. Another point made by the author, he finds that cross-listed firms are more likely to engage in mergers and acquisitions, providing an additional external governance mechanism. The active takeover market disciplines management and aligns their interests with those of shareholders, contributing to higher valuations. (Karolyi, 2006) He proves this increased activity by providing two studies, one from Burns (2004), which provides evidence that cross-listed foreign bidders for US targets are significantly more likely to engage in acquisitions than non-cross-listed foreign bidders. These cross-listed firms are also more likely to finance their acquisitions with equity. Burns identifies 438 bids between 1984 and 2000, finding that 48% of cross-listed acquirers use equity versus only 3% of non-cross-listed acquirers. Additionally, the acquisition premiums are 6% lower for cross-listed acquirers compared to non-cross-listed ones. (Burns, 2004) The other study is done by Kumar and Ramchand (2005), who present a model showing that cross-listing reduces transaction costs of stock-financed acquisitions of foreign targets, thereby increasing the likelihood of acquisitions. They find that the likelihood of a US acquisition within three years following a US listing is greater for firms that undergo secondary equity offerings, experience larger reductions in cash flow or control rights, initiate governance-improving actions, and achieve stronger valuations before and after the listing.

These studies show some of the additional factors that evolve around the topic of corporate governance and affect the valuation of a firm in the public eye, especially for institutional investors. Whether a collection of these or individual aspects is decisive to firms when making the cross-listing decision depends on the individual case. An interplay of different factors will be applicable for most firms – thus it is important to get clarity on all of them.

2.1.3 Growth Opportunities

Two professors, one from HEC and one from the University of Freiburg, have done a model to identify another explanation for cross-listings, other than the ones we have analysed before. They published their work in a paper titled "Stock price informativeness, cross-listings, and investment decisions" in 2006. They created a model of multi-market trading and added the so-called "information channel", which shall explain the impact on the firm's value from cross-listing. (Foucault, 2006) They point out that their model does not rule out other rationales, such as: "firms could cross-list to (i) avoid investment barriers ('segmentation hypothesis'), (ii) increase their visibility ('recognition hypothesis'), (iii) enhance their liquidity, (iv) signal their quality, and (v) commit to restrain expropriation by controlling shareholders ('bonding hypothesis')" (Foucault, 2006), but rather provides an additional mechanism. Their model shows that "a cross-listing enables firms to obtain, from the stock market, more precise information about the value of their growth opportunities" (Foucault, 2006). In summary, the authors identify the enhanced informativeness of the stock price, due to the cross-listing, to increase a manager's ability to make investment decisions. This is especially true for firms with great growth opportunities and when the managers lack information on those. Then the increased informativeness allows managers to assess the opportunities more accurately and gain insights into future cash flow predictions and other signals published by informed traders. The authors find a valuation premium for cross-listed firms and according to their rationale, it is due to firms cross-listing once they have identified growth opportunities, thus being at a point where their value increases naturally. (Foucault, 2006) While our recent rationales have found cross-listings to indirectly impact the stock price, this theory suggests that firms are directly affected by it due to positive implications for their operations and thus actual value improvements.

2.2 Valuation Comparison Methodologies

The question of whether listing locations, particularly the US, have an advantageous valuation impact has been researched by some in the past. To provide a direction if one wants to explore the quantitative method of how the significance of these valuation differences can be proven, we will shortly discuss the most common methodology in the literature. However, considering recent years' events, we find it much more interesting to take a deeper, case-by-case look at recent relistings, and conclude whether the move made sense for the companies or not. By doing this, we expect to find the underlying reasons that construct a common ground as to why companies find the US stock exchanges more attractive than European competitors.

2.2.1 Tobin's Q Ratio

Regarding the methodologies on how to compare valuations across different markets quite a few research studies were conducted. Their ways of comparing vary on a wide scale, however, our goal in this part is to show the one that was the most popular method to assess this question, namely Tobin's Q ratio comparison.

Doidge et al., (2004) carried out research in 1997 in an attempt to assess the impact and significance on valuation when a company is listed in the US In their methodology they focus on the so-called "cross-listing premium", by comparing the valuations of firms that decided to list on one of the US exchanges as well as on some other exchange. In their paper, Doidge et al., (2004) used Tobin's q ratio as their valuation measure. The ratio is calculated – as shown by the formula below – by taking the book value of all the assets, subtracting the book value of equity, adding the market value of equity, and then dividing the result by the book value of total assets.

$$Tobin's\ q = \frac{BV\ of\ Total\ Assets - BV\ of\ Equity + MV\ of\ Equity}{BV\ of\ Total\ Assets}$$

2.2.2 Weaknesses of Tobin's Q Ratio

It is important to note when it comes to the calculation of this ratio that it is subject to imperfect measurement and biases, and it is hard to precisely assess how that impacts the results of the research. It is also important to be aware of the issue that it can be challenging to conclude that there exists a cross-listing premium if we consider the pattern that rapidly growing firms are acquiring assets very quickly and they tend to cross-list more often than other firms. The consequence of this existing pattern is that the Tobin's q ratios for these firms will be lower and therefore biases the results in such a way that we might reject the existence of the cross-listing premium if the number of such firms is above a certain level in the sample.

Another important issue to note is the differences across countries and regions in accounting principles. Firms in the US follow the Generally Accepted Accounting Principles (GAAP), while firms in the EU follow the IFRS (International Financial Reporting Standards), of course,

there are many countries with their own specific accounting standards, which in the end contribute to inconsistent measurements in Tobin's q ratio and cause a false artificially elevated or reduced ratio relative to other countries. These differences are for example whether firms show reserves on the balance sheet or not, or whether firms capitalize R&D expenditures or not. These have a direct impact on the level of assets shown on the balance sheet. In the former case, off-balance sheet reserves will reduce the assets and they will therefore be underestimated, while in the latter case, a company capitalizing the R&D costs will increase the value of assets relative to a firm that does not capitalize and so it will increase both the denominator and the numerator, resulting in a lower Tobin's q. (Doidge et al., 2004)
Aware of these biases and imperfections, the authors of the study introduced several control variables into their model, such as sales growth, liquidity ratio, accounting standards, and investor protection.

2.2.3 Results Using Tobin's Q Ratio

Overall they concluded that firms that cross-list their shares in the US achieve higher valuations than those firms who decide not to cross-list. More precisely, the valuation difference for exchange-listed firms reaches as high as 37% according to the original study. (Doidge et al., 2004) The above result also persists after controlling for country and firm characteristics.
The authors replicated the same methodology to examine whether a premium exists for choosing a US listing during the periods of 2001–2007 (pre-GFC) and 2010–2018 (post-GFC). They found that the premium was significant in both periods and their data supports the conclusion that the premium became 36% larger in the period after the Great Financial Crisis in developed markets, while it fell by 20% in emerging markets. (Doidge et al., 2020)

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3. Case Studies

In the following section, we will look at multiple case studies of European companies that have either decided to delist in Europe and move their listing to the US, move their primary listing location outside of Europe to the US, or list their initial public offering in the US in order to increase their firm valuation. The following case studies are the most recent examples of this observed trend and the reason for our research question. The objective of looking at the individual cases below is to clarify the reasoning of each firm and find overlapping motives comparable to the rationale we have found in the literature, as well as understand whether their decision to move was beneficial or turned out to be ineffective or even negative for their firm valuation. For this peer companies. We will mostly focus on EBITDA Multiples, forecasted EBITDA growth rates, and revenue multiples in the case of non-profitability.

3.1 Linde

Linde PLC is a global industrial gases and engineering company headquartered in Guildford, England. It was formed through the merger of Linde AG of Germany and Praxair of the United States in 2018. The company's history dates back to 1879 when Carl von Linde, a German engineer, founded Gesellschaft für Linde's Eismaschinen AG, which initially focused on refrigeration technologies. Over the decades, Linde expanded its expertise into cryogenics and entered the industrial gases sector. Today, Linde is one of the largest industrial gas companies in the world, operating in more than 100 countries and serving a wide range of industries including healthcare, petroleum refining, manufacturing, food, beverage carbonation, fiber-optics, steel making, aerospace, chemicals, electronics, and water treatment. The company produces a variety of products such as oxygen, nitrogen, argon, rare gases, and process gases like hydrogen and helium, along with developing related technologies and solutions for its customers. The company's focus on innovation has been a significant part of its strategy, leading to developments in environmentally sustainable technologies like clean hydrogen and carbon capture solutions. Through strategic mergers, significant investments in technology, and a focus on sustainable development, Linde continues to play a critical role in various global industries while pushing forward new technologies to meet modern challenges.

In terms of financials last year Linde earned $32.85 billion in revenues and $12.1 billion EBITDA, realizing a 36.9% EBITDA margin and outperforming all of its competitors with regards to this ratio. 43.5% of its revenues are attributable to US sales, 26% is coming from EMEA, and 19.9% from the APAC region. If we look at historical data we can see that the importance of the US, EMEA, and APAC markets has been in the same order since 2018. The same statement is true for its EBITDA distribution across the globe and it is very important to point out that beyond bringing the biggest share of revenues, the US operations have the highest operating margin globally, last year it was 29.6% and it has steadily been above 25% since 2020. It has to be said however, that the company is doing very well in terms of operating margin globally as none of the regions have gone below 20% operating margin in the past 5 years, which is a remarkable consistency. (*Source: Refinitiv*, 2024) It is, therefore, no surprise that investors have been choosing Linde to invest their money, therefore the stock reached a 27.04 P/E ratio, which is also the highest among the competitors.

3.1.1 Linde's Challenging Situation

The firm announced on the 24th of October 2022 its intention to delist from the Frankfurt Stock Exchange and only keep its US listing. Originally, the cross-listed nature of the firm was due to the earlier-mentioned merger with Praxair back in 2018. The transcript of the delisting proposal unveils the considerations that led the group and its shareholders to push for the move in the end and officially delist from the German exchange on March 1st, 2023, with 93% of votes in favour of the move. (Reuters, 2023) Knowing that Linde was at the time the largest constituent of the DAX – Germany’s blue-chip index – the move might seem unexpected, odd, or bold. All of the adjectives said are a fair description, however, if we look at the reasons found in the transcript the last thing we can say is that it didn’t make sense, in fact, it was the absolute right thing to do, especially if we look at how their business revenue is distributed globally, namely that the biggest share of its revenue by far is coming from the US markets, and it has been so for more than 5 years even before deciding on the move. (*Source: Refinitiv*, 2024)

One of the key issues, as noted by Linde's CEO, is valuation barriers. Specifically for Linde, being fully listed on two exchanges required adherence to all local laws and regulations associated with each exchange. This not only increased operational costs significantly due to the need to comply with two sets of financial and regulatory frameworks but also demanded substantial manpower, diverting resources from other potential growth areas. The dual listing structure meant Linde was subjected to rigorous compliance on both the Frankfurt and New York stock exchanges, which was more demanding compared to companies listed through depositary receipts that typically face less stringent local compliance.

Furthermore, Linde's participation in EU indices introduced additional growth barriers. EU indices have market capitalization-based limits, capping the maximum percentage a single stock can hold within an index. This, along with the UCITS mutual fund structure, which also limits the percentage of a fund that can be invested in a single stock (typically capped at 10%), created significant valuation challenges. These regulations aim to reduce market risk but can inadvertently stifle growth opportunities for large-cap companies like Linde, which was one of the largest constituents of the DAX index.

An analysis of Linde’s stock performance during quarterly rebalancing periods revealed that it consistently underperformed when its market cap was above the cap limits and outperformed when below. (Linde, 2022) Since 2020, Linde traded above these cap limits for the majority of the year, evidencing a clear negative impact on its valuation and performance. Attempts to alleviate these constraints included proposals for index cap adjustments and modifications to Linde’s stock repurchase programs. However, these efforts were largely unsuccessful; for instance, a proposal to increase the DAX cap limit to 15% was rejected, and the modified repurchase program did not yield the desired results.

These combined factors underscored the strategic move by Linde to simplify its structure and potentially enhance shareholder value by focusing solely on its NYSE listing, where such cap-related limitations do not exist. This shift is indicative of Linde’s broader strategy to optimize operational efficiencies and market valuation in a competitive global marketplace. (Linde, 2022) Based on the above-unveiled barriers and comparative analysis of the different exchanges and market regimes, we view Linde’s conclusion to delist as a clear and rational act.

3.1.2 The Financial Impact of the Delisting

If we take a look at the total return comparison Figure 1 between Linde and its closest peer AirLiquide (listed on Euronext Paris), we can see that since the delisting Linde outperfromed its peer with 27.33% total return against 21.55%, even though at first it suffered a hit in the first two weeks following their decision.

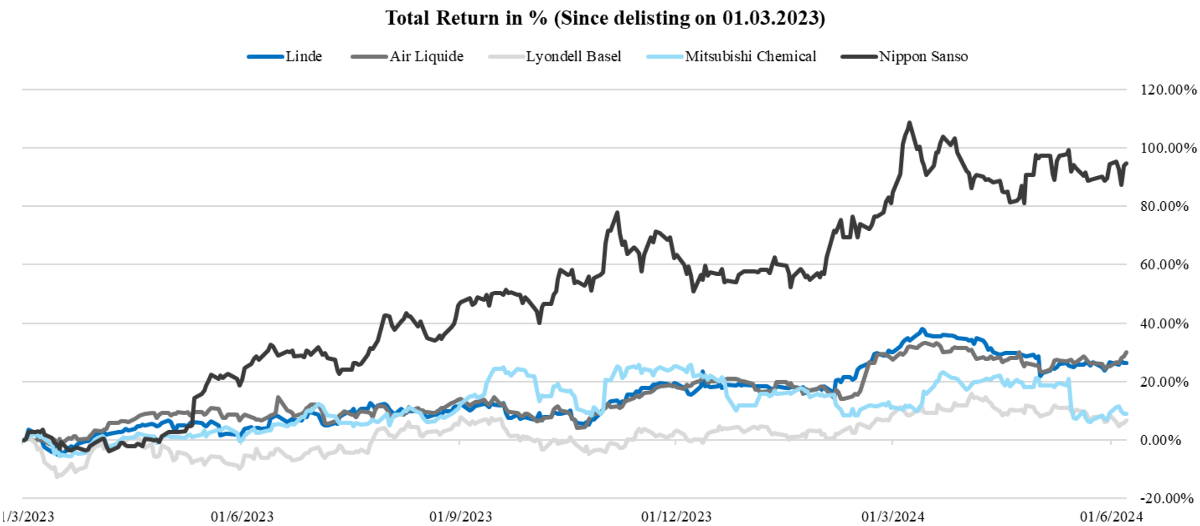

Figure 1: Linde' Performance in Comparison to Peers since Relisting (Source: Refinitiv)

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The only peer outperforming Linde since they made their move was Nippon Sanso with an astonishing 97.47% total return in the same period, however, we consider this an outlier rather than an argument-weakening instance, because the firm is listed on the Japanese stock exchange and the market dynamics have been very different in their regime lately.

If we take a look at the financials in Table 1, we can see that even though following the change in 2023 revenues have fallen to $32.9 billion from $33.4billion in 2022, there has been a significant improvement in operating efficiency as recurring operating profit rose from $6.4 billion to $8.1 billion, as well as the EBITDA, which rose from $10.6 billion to $11.9 billion, the former representing an almost 27% and the latter a 12% increase. It is very hard to conclude that the growth is exclusively or even partially because of the delisting decision, however, it is a good look, as it is exactly what management said was going to happen after the move was done.

Summary (in billions)	Linde	Lyondell Basell	Air Liquide	Nippon Sanso
	(USD)	(USD)	(EUR)	(JPY)
2022				
Enterprise Value (EV)	174.5	36.3	81.6	1,831.30
EV/EBITDA	16.43	5.64	10.56	9.55
EV/Revenue	5.23	0.72	2.73	1.91
2023				
Enterprise Value (EV)	215.2	38.8	103.3	1,810.60
EV/EBITDA	18.04	7.6	13.02	7.95
EV/Revenue	6.55	0.94	3.74	1.53
2024 Expectation				
Enterprise Value (EV)	221.6	37.7	105.1	2,644.00
EV/EBITDA	17.8	7.65	13.22	9.46
EV/Revenue	6.79	0.96	3.79	2.11
2024-2026 Expectation				
Average EBITDA Growth	6.58%	5.62%	7.61%	4.57%
Average Revenue Growth	5.89%	-7.88%	5.13%	2.78%

Table 1: Valuation Metrics for Linde and its Competitors
(Source: Refinitiv)

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3.1.3 Expectations vs. Reality

The company's original position on the relisiting was that it was a move necessary as they were fully listed and had to bear the full costs of complying with both regulatory regimes, which already is a suboptimal position. Especially, since due to the regulatory environment – precisely the EU's UCITS funds regulation – the company also had to face limits to its valuations due to regulatory sell-offs in the periods of fund rebalancing. The expectation from company leadership according to which the company would benefit from delisting in the EU therefore seemed quite rational both from the view of cutting unnecessary costs – which in itself ceteris paribus could have been expected to elevate valuations – and also from the view of being in a location where the fund structures do not construct valuation limits that evidently cause negative price impact and destruct shareholder value. Indeed, the numbers prove them right. On one hand, they could leverage the effect of optimized US operations and save on regulatory costs resulting in a 27% operating profit growth, and a 53% Diluted EPS increase despite the decreasing revenues from 2022 to 2023.

The fact that Linde's stock price dropped 2% when the company announced that its shareholders approved its delisting from the Frankfurt stock exchange on the 18th of January, 2023 and that the stock closed at $330.49, which meant a 5.59% drop within seventeen days of the delisting becoming effective - might be taken as a sign that investors and the public opinion were skeptical – however – as (Kwon & Tang, 2023) pointed out in their literature this might as well just be a common instance of overreaction around more extreme event announcements, as on average investors extrapolate, meaning that they think the recent past is representative of the future. After all, it was hard not to see how it would not benefit Linde: it was an obvious cost reduction, for more than 5 years the greatest part of its profits came from the US and there were no regulatory limits for valuation.

If we look at the historical charts the latter explanation seems to be the correct one, the markets clearly overreacted or just did not know right away how to react to the news and therefore they had to correct their initial verdict, as they did: Since the 17th of March 2023 the stock is up 34.36% and 27.33% since the delisting became effective, outperforming almost all of its competitors in terms of stock performance and all of its competitors in terms of valuation, as well as EBITDA and operating margin.

3.1.4 Case Conclusion: Was it the Right Decision for Linde?

The move helped to direct the company towards what was expected: saving on unnecessary costs and losing a valuation barrier. Complementing the total return numbers, the table below contains a summary of the relative valuation metrics among Linde and its competitors. The numbers clearly indicate a valuation increase since the delisting, however, competitors Nippon and Air Liquide also show a strong performance, yet neither of them is listed in the US. So, in absolute terms – and taking a standalone view on Linde – the decision to delist was the right one for sure. However, it did not result in a significant outperformance of its peers in terms of relative valuation.

3.2 CRH

The Irish company CRH, which stands for Cement Roadstone Holding, describes itself as “the leading provider of building materials solutions that build, connect and improve our world.”[3] The group’s headquarters is in Dublin, Ireland, they employ around 79,000 people across 29 countries, and in 2023 they generated $35 billion of revenue, out of which $6.2 billion (18% of revenue) are adjusted EBITDA. In 1973 the company went public on the Irish Stock

[3] Source for this paragraph is mainly the company website www.crh.com/ and financial press releases

Exchange and in 1978 the company entered the US market by acquiring Amcor, a concrete products company in Utah. Today the company states that 75% of their EBITDA is generated in the US market.[4]

3.2.1 CRH Moving Its Primary Listing to the US

The company decided to switch its primary listing to the US as of September 25th, 2023. The starting statement in the official press release by CRH on the listing move is the following: "We believe a US primary listing will bring increased commercial, operational, and acquisition opportunities for our business, further accelerating our successful integrated solutions strategy and delivering even higher levels of profitability, returns and cash for our shareholders." In summary, they expect improvements in their growth opportunities and ultimately higher profitability, which should increase the firm valuation. This aligns well with the literature of Thierry Foucault (HEC Paris) and Thomas Gering (University of Freiburg), who found in their research that through the information enhancements of the stock price, that is achieved with a US cross-listing, the firm's managers can draw improved information on their growth opportunities and improve their decision making. (Foucault, 2006) In our case, the cross-listing has happened long before already and the new action is just switching the primary listing to the US. Therefore, it is important to note another effect of the action, the listing change will allow CRH to be added to the S&P 500 Index, which requires that the majority of the stock trading happens on US exchanges. This can lead to an increased valuation due to passive investment funds that strictly follow the index buying the stock after its addition. However, to achieve the majority of liquidity in the US CRH had to delist their stock from the Dublin Stock Exchange, which was the main trading ground before, and their now secondary listing in London remains.

[4] As can be found in a press release by CRH on the completed transition to US Primary Listing https://www.crh.com/media/4935/transition-to-us-primary-listing-complete.pdf

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This resulted in the stock being removed from the FTSE 100, ISEQ Overall Index, and EURO STOXX 50, which causes a certain outflow of passive investor's capital, and thereby a value decrease needs to be accounted for as well. The balance of these two capital flows, as well as the effects of the other implications on the valuation of CRH, will decide whether the transition was beneficial for the company or not.

3.2.2 The Role of Activist Hedge Fund Cevian Capital

In the case of CRH, there is an activist hedge fund involved as a major shareholder of around 10%, called Cevian Capital. Stockholm-based Cevian is backed by US investor and billionaire, Carl Icahn, and they own large minority stakes in many European companies, such as ABB, Ericsson, SKF, Pearson, and Rexel.[5] According to some journalists the hedge fund has used its voice on the board to push for the listing transition. They have generated significant returns as the stock price of CRH has increased by around 50% since September 2023, while the S&P 500 only returned about 25% in the same period. Figure 2 shows the steep return that CRH made after its transition almost outperforming all competitors. The construction industry performed well overall in that period further strengthening the performance of CRH.

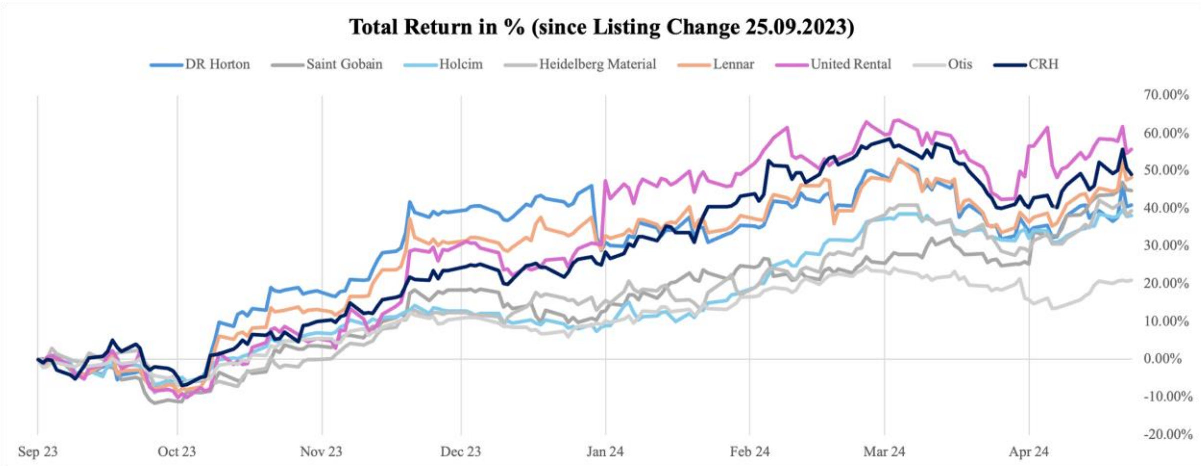

Figure 2: CRH's Performance in Comparison to Peers Since Relisting (Source: Refinitiv)

[5] https://www.echo.ie/cevian-capital-gets-boost-of-almost-20-per-cent-with-crh-investment/

Does being listed in the USA lead to better valuations?

In the grand scheme of things, which can be seen in Figure 3 CRH performs very well, the only competitor that outperforms them over 5 years is DR. Horton, which is a US-based company that is volume-wise the biggest builder of houses in the US. We can clearly see a steep rise in the stock price towards the end of the 5 years indicating a positive impact of the listing transition engaged by the activist hedge fund, which has been building up its position since 2018 according to some journalists.[6]

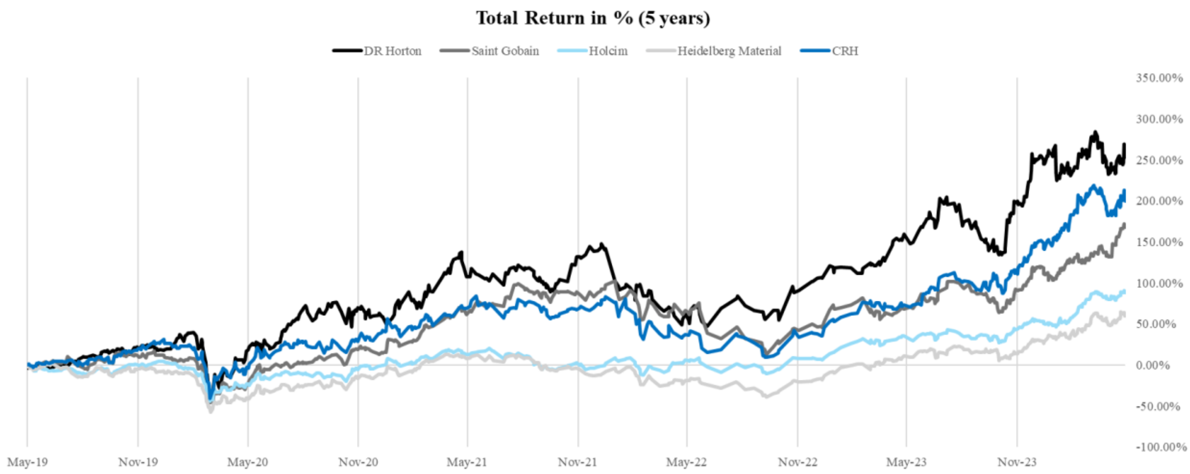

Figure 3: CRH's Performance in Comparison to Peers Over the Last 5 Years (Source: Refinitiv)

Additionally, it is interesting to note that Cevian is pushing for a similar listing-transition at another of its portfolio companies, Pearson. (Bayley, 2023) Here the company also generates most of its revenue in the US and has the primary listing in London. It seems like a traditional case where the investor creates value by liberating a company of its founding traditions and shifting focus on growth and profitability. This compares to what buyout funds do when they purchase companies from the founding family and grow companies to an extent that the founders could not have done themselves. In the case of Pearson, Cevian's co-founder Christer Gardell said that "as most of the competition is based in the US, we see an upside to the share of 30% to 40% from a relisting" (Bayley, 2023). The fact that an activist hedge fund expects

6 https://www.independent.ie/business/irish/cevians-crh-play-helps-lift-returns-for-europes-biggest-activist-investor/a702042947.html

such a significant return from a relisting and has proven its capabilities in the past with cases such as CRH, proves the relevance of our analysis. Now, we want to further understand the financial impact on CRH and its valuation of the relisting by looking at different metrics before and after the transition.

3.2.3 The Financial Impact of Relisting

The impact on CRH's valuation of the relisting has not been significant as its EV-to-EBITDA-multiple is expected to remain unchanged from 2023 to 2024 while those of competing companies increase. However, the company's valuation increased a lot in recent years as we can see in the charts above meaning the valuation increases come from the company's profitability increasing rather than improved multiples. Looking at Table 2 we can see that CRH's valuation comes at a discount compared to its peers, which are listed below. Looking at the difference between the companies listed in Europe versus the ones listed in the US, we can see that the latter is valued more favourably in terms of EV-to-EBITDA multiple, but also in the forward PE ratio, which takes expected growth into account.

Summary	CRH	DR Horton	Saint-Gobain	Holcim	Martin M. M.
2022					
Enterprise Value (EV)	31,681.0	26,929.0	31,847.0	35,144.0	25,667.0
EV / EBITDA	5.98	3.71	4.47	5.08	16
EV / Revenue	1.03	0.8	0.62	1.2	4.17
2023					
Enterprise Value (EV)	48,240.0	37,578.0	41,362.0	46,130.0	33,910.0
EV / EBITDA	8.44	6.85	5.91	6.85	15.9
EV / Revenue	1.49	1.03	0.86	1.71	5
Forward PE	13.09	9.29	10.97	12.8	23.51
2024 Expectation					
Enterprise Value (EV)	53,089.0	47,571.0	43,916.0	51,364.0	15.1
EV / EBITDA	8.44	7.43	6.32	7.6	35,752.0
EV / Revenue	1.55	1.25	0.94	1.85	5.01
2024 - 2026 Expectation					
Average EBITDA Growth	7.6%	10.1%	3.2%	3.5%	8.9%
Average Revenue Growth	5.1%	6.0%	1.8%	4.3%	6.1%

Table 2: Valuation Metrics for CRH and its Competitors
(Source: MarketScreener)

Does being listed in the USA lead to better valuations?

Therefore, we can assume that the US listing location in the construction materials and services industry brings advantages to the firm that benefit its valuation. We expect CRH to align its multiples with the industry average[7] of those companies listed in the US, which offers an upside of 35.5% to its current market capitalization. The Forward PE ratio, as we can see above, is highest for companies listed in the US (DR Horton and Martin M. M.) and CRH, being below the average (~14.14), is already benefitting from this advantageous valuation since their Forward PE at 13.09 is above the European competitors' ones.

We also observe a significant increase in the Enterprise Value from 2022 to 2023, which might be attributable to the relisting partly. As we saw in the stock price charts earlier, the performance of CRH has been one of the best in the industry.

3.2.4 Case Conclusion: Was it the right decision for CRH?

We believe that US investors value growth more strongly and are willing to invest more now to benefit from potential growth and get a higher reward. Therefore, CRH made the right decision relisting in the US to benefit from this behavior in the construction materials and services industry. Their EV-to-EBITDA multiple will not increase significantly, because of their high growth and profitability, but their ability to attain capital and take on opportunities has increased. Their valuation in total benefits from the move as peers in the market are valued higher and investors are likely to align its valuation in the future.

3.3 Smurfit Kappa

Smurfit Kappa Group PLC is a paper packaging company originally founded and based in Dublin, Ireland. Back in 1934, it started by making boxes to 90 years later became what it is

[7] The average EV-to-EBITDA multiples for the companies in is 11.72 and would bring CRH's market capitalization to $68.73bn compared to currently $50.71bn.

today, an integrated paper and paperboard manufacturer with operations both in Europe and the Americas. Last year, the company generated EUR 11.3 billion in revenues, 75.3% of which came from European and 24.7% came from American activities. The company was first listed on The Irish Stock Exchange in 1964, and today it has a market capitalization of EUR 11.04 billion. In September 2005, JSG (The Jefferson Smurfit Group) announced their merger plan with Kappa Packaging, and the deal was completed by December 2005, resulting in the today known entity, SKG (Smurfit Kappa Group). The merger delivered synergy benefits of EUR 87 million within a year following the deal, and in 2007 SKG earned the title of the largest-ever industry IPO valued at EUR 1.5 billion at the time. (Smurfit Kappa, 2024) Looking at SKG's history, the company was never shy of engaging in M&A activities, it was one of their core strategic pillars over the past 20 years to expand their capabilities and grow their market share. The transactions included the acquisition of Orange County Container, a US-based packaging company for $340 million in 2012, of Saxon Packaging, a UK-based board into corrugated boxes converter firm in 2016, and Serbia's biggest integrated packaging business in 2019.

3.3.1 M&A Activity Leading to Relisting in the US

The latest strategic move of SKG was to start discussions back in September 2023 with WestRock Company, an S&P 500 company and a global leader in sustainable packaging, to acquire the business. Discussions about the deal have been ongoing since, however, on the 14th of June 2024, shareholders of WestRock approved the pending merger. The combined entity, Smurfit WestRock, is expected to become one of the world's largest paper and packaging companies with an expected worth of $20 billion. WestRock's and Smurfit Kappa's combined revenues and EBITDA were around $34 billion and $5.5 billion in the past twelve months, and the deal is expected to result $400 million in cost-saving synergies in the first year following the completion of the deal. (Zacks Investment Research, 2024) According to the details of the agreement, WestRock shareholders will receive one Smurfit WestRock share and a $5 per share cash payment, an equivalent of $43.51 per share. Smurfit Kappa shareholders will receive one new Smurfit WestRock share. Interestingly, WestRock currently trades at $49.70 as of the close on the 18th of June, 2024 meaning that shareholders truly believe in the success of the merged entity as they just accepted a 12.45% discount.

Another notable consequence of the deal is that the new entity, Smurfit WestRock, has filed a registration statement Form S-4 with the US Securities and Exchange Commission.(Smurfit Kappa, 2023) According to the announcement on WestRock's website, the new entity will be domiciled in Ireland, and it will be ditching[8] the London Stock Exchange (LSE) as its main listing location, and will instead list on the NYSE, to seek a US equity index inclusion as soon as possible.

Alan Wilson, chairman of WestRock, commented "This combination will enable WestRock to advance its key growth initiatives on a global scale while providing our shareholders with the opportunity to meaningfully participating in the combined company's significant upside value potential." In our opinion, this statement clearly signals that leadership thinks the key to meaningfully participate in the upside value potential is through the US listing, as opposed to the UK. This is in line with the view of Linde's leadership according to which the European stock markets create a valuation barrier relative to the US markets. The decision and the reasoning are in line with that of the other big companies, who ended up choosing the US instead of the UK. Two very often cited reasons to switch listing locations or to straight IPO in the US were market volatility and extremely cautious UK investors, not allowing them to arrive at market valuations that the companies believed would reflect their true value. (Visavadia, 2023)

[8] The company doesn't seek to entirely ditch the LSE, as it only plans to "downgrade" its listing from premium to ordinary, so it will no longer qualify to be included in the major indicies such as the FTSE 100.

Does being listed in the USA lead to better valuations?

3.3.2 The Expected Financial Impact of Relisting

Investors are bullish and viewing this deal from the bright side for sure as WestRock stocks have started with a 7.2% jump pre-market following the announcement of the deal back in September 2023. Furthermore, if we look at the last twelve months (LTM), WestRock shares gained 74.86% in total, while the industry average was 11.77%, so it is fair to say that WestRock outperformed. Smurfit Kappa also produced a 27.7% return LTM, therefore we can conclude investors share a positive view while awaiting for the deal to happen. If we look at Figure 4 below, we can immediately see how WestRock took off last Septemeber, while Smurfit went into a temporary sub-industry-average return period until early December last year, only to come back later with more positive investor sentiment.

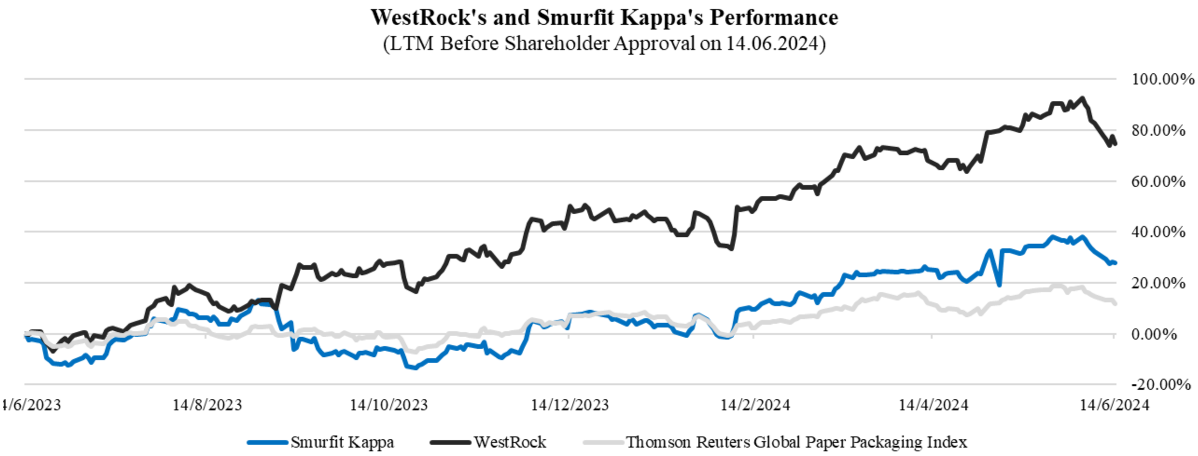

Figure 4: WestRock's and Smurfit Kappa's Performance in Comparison to Industry Index (Source: Refinitiv)

The positive investor sentiment is probably due to their agreement with what the company has been saying would be the benefits of such a deal: The merger would lead to an unmatched geographical scale in the industry, including 42 countries, and the two companies' highly complementary portfolios and sustainable capabilities would most likely place the company as the most preferred packaging partner across the globe. Also, increasing packaging capabilities combined with the best-in-class sustainability rating and eco-friendly packaging methods is absolutely in line with the trend of a rising e-commerce demand stemming from sectors such as food and beverages, as well as healthcare products, and the growing preference for environmentally friendly packaging solutions.

3.3.3 Case Conclusion: Was it the Right Decision for Smurfit Kappa?

All in all, the results have been very promising so far and so is the outlook, however, it will be interesting to see the final results after the completion of the deal and the NYSE listing, which is expected to happen towards the end of the second quarter of 2024. This case is special in the sense that the relisting has not yet been completed, and we will have to wait to see how events unfold and whether the resulting numbers confirm or oppose our view according to which the companies that moved their listing to the US have clearly and largely benefited from it.

3.4 Flutter Entertainment

The next case we want to take a closer look at is Flutter Entertainment, a public company that claims to be the world's leading online sports betting and iGaming operator across the world. The holding company owns multiple brands in different countries and provides sports betting, gaming, and peer-to-peer services to its customers. In 2023 they generated $11.8 billion in revenue, out of which 38% came from the US, and accumulated a net loss of $1.2 billion, which resulted in an adjusted EBITDA of around $1.7 billion. The history of the company starts in 1988 in Dublin, Ireland where the company, Paddy Power, was founded by three Irish bookmakers. They first went public in London in the year 2000. In 2015 they merged with their British competitor, Betfair, and formed Flutter Entertainment. In 2018 they acquired the American gambling company, FanDuel, which is the largest sports betting company in the US today. The holding has been cross-listed in the US since January 29, 2024, and in May 2024, the US listing became the company's primary listing.

Does being listed in the USA lead to better valuations?

3.4.1 Focus on US Brand FanDuel and Liquidity

In the official press release by Flutter Entertainment on May 31st, 2024 they announced the active transition to US primary listing as complete. There was a shareholders vote on May 1st where 98% of voters agreed to the change. Differently from CRH, there has been no single active investor involved, but the decision came from the firm's board and its management. (PLC, 2024) The rationale for the transition – as published on the website and in public statements by the company's leadership – lies in the recent shift towards the US business of the firm, FanDuel. Their US business generated the largest share of the revenue, 38% in 2023, and showed the greatest growth. As can be read in the company's most recent annual 10K report, in the US, many states are just now legalizing sports betting, thus creating more growth potential for the firm and initializing their interest in switching continental focus. Additionally, they recently moved their headquarters from Dublin to New York. In the Financial Times, the CEO of the company, Peter Jackson, states that as the company is gaining more traction in the US, he wants to enable those customers to become retail investors in the business. As the company is in the B2C business, clients spend a lot of time on the platforms of the company. Therefore, they brand themselves openly, for example, at the Super Bowl, clients become fans and form an attachment to the brand. Consequently, these clients could also become investors and boost the firm's valuation through the emotional value that they grant the firm. (Sugiura, 2024) We speculate there could also be a connection to recent developments of so-called meme-stocks and their significant performance boosts as these activities resemble a form of gambling as well, a trend the sports betting firm, Flutter Entertainment, might want to benefit from. The CEO also says that there are certain US retail investors, who limit their investments to US primary listings, which could have prevented them from investing before the relisting took place.

Does being listed in the USA lead to better valuations?

Like the other case studies, Flutter will soon become eligible for US indices, such as the S&P 500, which could boost the valuation of the company. Even before the switch, the company recorded higher liquidity on its US listing compared to the London one. Liquidity is a crucial requirement for the US indices but also provides other advantages that can boost the firm's valuation. For one, the company will have easier access to capital and seize opportunities as they arise making the company more maneuverable and more flexible. Another advantage is that investors can more easily invest or disinvest in the company's shares and might be more inclined towards larger investments given the liquidity. (Goodbody, 2024)
On top of liquidity, the US offers another general advantage according to the NYSE vice chairman John Tuttle, who said that they have more analysts and investors that value growth over dividends and value factors. (Lahiri, 2024) Whether that is true or not is unclear, but this sort of marketing can attract firms that focus on growth towards the US exchanges. In the case of Flutter Entertainment, they want to grow their US business in particular, thus it seems to make sense for them to go this route.

3.4.2 The Financial Impact of Relisting

Now we want to look at the valuation of Flutter Entertainment and how it has been impacted by the recent relisting. In Table 3, we can see different metrics for the company, as well as for its main competitors.

Does being listed in the USA lead to better valuations?

Summary (in billions)	Flutter	DraftKings	Entain	MGM Resorts
	(USD)	(USD)	(GBP)	(USD)
2023				
Enterprise Value (EV)	31.27	16.41	12.28	18.68
EV/EBITDA	16.50	-109.00	9.57	4.07
EV/Revenue	2.63	4.48	2.02	1.16
2024 Expectation				
Enterprise Value (EV)	37.10	18.46	10.17	16.08
EV/EBITDA	15.10	36.30	7.84	3.30
EV/Revenue	2.68	3.74	1.62	0.94
2024-2026 Expectation				
Average EBITDA Growth	25.20%	195.60%	5.30%	4,61%
Average Revenue Growth	12.91%	24.50%	3.80%	3.49%

Table 3: Valuation Metrics for Flutter Entertainment and its Competitors (Source: Refinitiv)

DraftKings and MGM Resorts are both also US-based and primary-listed there. Entain is only listed in the US through an ADR and mainly operates in Europe. According to Flutter's equity research analyst from Goldman Sachs, Ben Andrews, DraftKings and Flutter hold around 80% of the available US market share. (Benzinga, 2024) As DraftKings has not been profitable in their most recently announced statement it is difficult to compare our chosen metric, EV-to-EBITDA. In their projection for 2024 DraftKings are expected to be valued 36 times their EBITDA, while Flutter is expected to be valued at only 15 times their EBITDA. Those valuations are after the relisting of Flutter. It is important to note that DraftKings' expected average EBITDA growth over the next three years significantly exceeds that of Flutter as they are expected to break profitability in 2024 and then grow another 100% from 2024 to 2025 and 50% from 2025 to 2026. Therefore, a higher growth premium might explain the different multiples. The enterprise value of DraftKings is also only around half of Flutter Entertainment's and the company mainly operates in the US, meaning the valuation excludes the non-US markets of Flutter, which grow slower than the US and decrease the multiples valuation.

Does being listed in the USA lead to better valuations?

3.4.3 Conclusion: Was it the right decision for Flutter?

All in all, Flutter Entertainment's move to transition its primary listing to the US was strategically very well set up, as the acquisition of the largest sports betting company, FanDuel, back in 2018 further solidified Flutter's position in the US market. Having most of its revenues from the US, and the US market being its undoubtedly most important strategic presence, the move certainly had a clear rationale. Moreover, the anticipated benefits of the US stock exchanges compared to European ones – such as a more active US retail investor base, more liquidity, and a greater spotlight by analysts – indeed made a great case for the move in our opinion.

The move to a US primary listing has already shown benefits in terms of higher liquidity compared to the London listing, making it easier for investors to buy and sell shares and potentially attracting larger investments. The analysis of peer valuation metrics and growth expectations – excluding the outlier values of DraftKings – indicate that investors have a positive outlook on Flutter relative to its competitors.

In conclusion, Flutter Entertainment's decision to shift its primary listing to the US seems strategically sound given the market potential and initial benefits observed. However, given the short period since the relisting, these conclusions should be viewed cautiously, and further assessment will be needed to determine the full impact of this strategic move.

3.5 Arm Holdings Plc

Our next case study will be about a leading semiconductor intellectual property (IP) firm, Arm Holdings Plc. Founded in 1990 and headquartered in Cambridge, UK, Arm initially focused on power-efficient central processing unit (CPU) designs. Today, it licenses IP to firms that create everything from mobile devices to large-scale infrastructure systems. In 1998, Arm achieved a primary listing on the London Stock Exchange (LSE) in Europe, and a secondary listing on the

the NASDAQ in the US, following the success of its Arm7 processor-powered famous Nokia 6110 GSM mobile phone and later it became the largest UK listed semiconductor firm by market capitalization.

Arm's business model revolves around designing CPU architectures, which are then licensed out for others to produce, ensuring broad compatibility and standardization across computing devices. The company's innovative approach supports a wide range of technologies, and its divisions are divided according to the key sectors that it enables to grow: automotive, computing infrastructure, Internet of Things (IoT), and consumer technologies. (Arm Holdings, 2024)

Arm's impact is vast, with 99% of smartphones globally operating on Arm-based processors and 70% of the world’s population using its technology. The importance of the firm and its key role in the technology space is signified by its remarkable numbers and consistency of growth. The company had revenues of $3.23 billion last year and has a 3-year CAGR of 16.7%. Unsurprisingly, the company operates with relatively low operating and EBITDA margins – 3.6% and 8.6% respectively – as its IP licensing business model requires a significant amount of upfront investments in research & development of chip architectures. Arm is truly a global company, it has sales activities in the United States, China, Taiwan, the Republic of Korea, and other countries as well, representing 43.7%, 21.5%, 16.1%, 9.5%, and 9.0% of its revenues respectively.

3.5.1 Too Big to Go Unnoticed

Arm’s success and crucial capabilities within the part of the tech industry that enables the consumer-facing segments of the industry to provide better products and grow put the company in the spotlight. So much, so that in 2016 SoftBank, a Japanese conglomerate, offered to buy Arm for £17 per share, a 41.1% premium at the time on the all-time high share price. The £24.4

billion or $32 billion deal went through very smoothly, because as SoftBank's CEO described "SoftBank does not operate any competitive business segment against Arm". (Kharpal, 2016) The deal was implemented in the form of a cash acquisition, and – as detailed in the original proposal – it also meant taking Arm private. (SEC, 2016) SoftBank's rationale behind this decision was that the company is one of the globe's most important IP owners and producers and therefore it should focus all of its efforts on that field and not on the regulatory requirements and mandatory disclosures that come with a public listing. Also, in the situation of Arm, being a private company seems ideal for not having to give away details that might reveal or lead competitors to secrets, ultimately hurting the company's competitive edge.

3.5.2 The Failed Deal with NVIDIA that Led to an IPO

13th of September 2020 – NVIDIA offered to buy Arm for $40 billion as a strategic move to lead the AI age with an unmatched ecosystem of architecture design, manufacturing, and R&D capabilities. NVIDIA and Arm announced a definitive agreement, however, at this point, it was still subject to regulatory approval in the UK, China, EU, and the US. (NVIDIA, 2020)

7th of February 2022 – NVIDIA and SoftBank announced the termination of the transaction because of the regulatory concerns that it raised. (NVIDIA, 2022) More specifically, as the Guardian described: "The US Federal Trade Commission dealt a hammer blow to the prospect of successful takeover, launching legal action in December to block what it called an "illegal vertical merger" that would give Nvidia too much market power." Beyond the US authorities, the UK authorities had their competition, as well as national security concerns and so did the EU and China. (Sweney, 2022)

The NVIDIA deal would have been a great opportunity for SoftBank to realize on its initial investment, and another way to do so was to do an IPO, and so they started to prepare Arm's IPO after the collapsed deal. Even without the failed deal, the IPO should not have hit as a surprise since back in 2016 SoftBank's founder Masayoshi Son hinted that "I don't know which market it will be, but Arm will be preparing for IPO within the next five years. Arm management is all excited about it. We are excited." (Ting-Fang & Li, 2019) Beyond this, another reason was for the IPO that the SoftBank-led Vision Fund owned 25% of Arm and the fund wanted to be able to cash in, and their view was to do it through an IPO. However, it did not matter in the end, as on the 21st of August, 2023, SoftBank bought back the 25% stake from Vision Fund.

3.5.3 The Financial Impact of Relisting

On the 14th of September, 2023 listed at $51 per share on NASDAQ giving it a $54.5 billion valuation, signifying the largest IPO in US markets since the initial public offering of electric-vehicle maker, Rivian, back in 2021. The IPO should definitely be viewed as a success from SoftBank's perspective as they turned their initial investment of $32 billion into $54.5 billion, a total return of 70% as per the initial offer price. Furthermore, on the first day of trading the stock closed at $63.59, meaning a $68 billion valuation, a total return of 112.3%, or an annualized return of 11.35% over the preceding 7 years. Not even a year later, on the 14th of June 2024, the stock closed at $157.89, meaning that since the stock relisted on the NASDAQ it gained 147.18%.

This means – as shown by Figure 5 below – that among the names AMD, Qualcomm, Broadcom, Intel, and Nvidia only the latter was able to outperform the Arm stock since it relisted last September. So far, we touched very little on how SoftBank reached the conclusion to list Arm in the US instead of the UK, or why they did not opt to just go back to the original structure of having a dual listing.

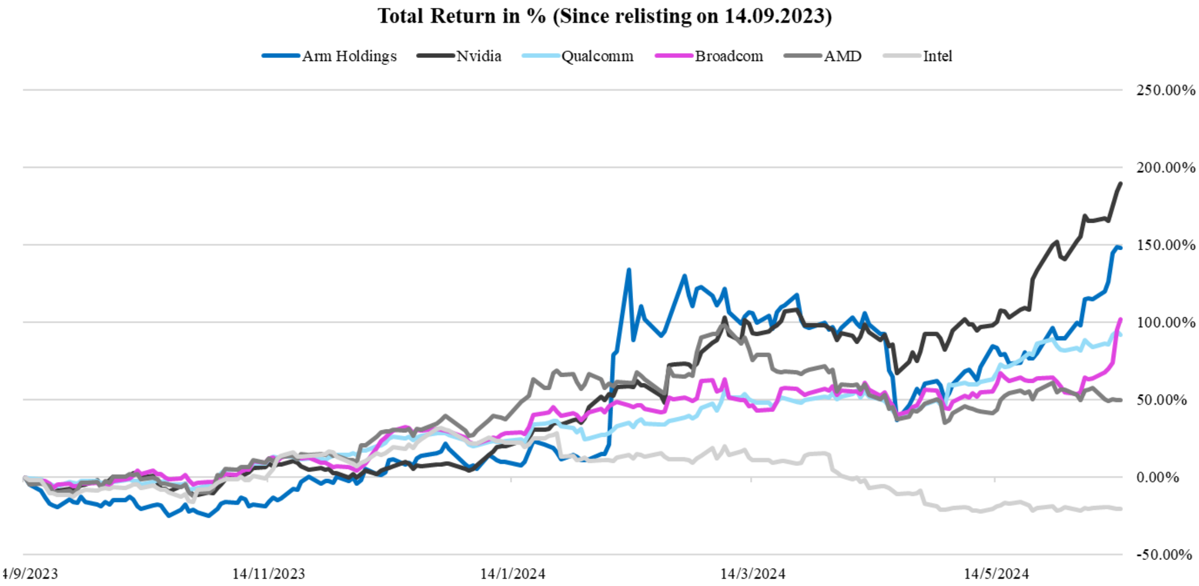

Figure 5: Arm's Performance in Comparison to Peers since Relisting (Source: Refinitiv)

We have to state that key events happened in the years since Arm was last listed on any exchange. First of all, following the referendum in 2016, the UK officially left the European Union in early 2020, meaning that economically speaking, the region no longer has the same resources and ideal position in Europe as it had before.

Later, in 2021 the Financial Conduct Authority (FCA) did a critical review of the LSE, identifying competitive disadvantages and a set of reforms that needed to be done to become competitive against the US stock exchanges. This meant accepting in front of the eyes of the public that they were the worse choice in comparison with the US.

Does being listed in the USA lead to better valuations?

In his reasoning, Rene Haas, CEO of Arm Holdings, also said “After engagement with the British government and the Financial Conduct Authority over several months, SoftBank and Arm have determined that “pursuing a US-only listing of Arm in 2023 is the best path forward for the company and its stakeholders”, even despite the fact Prime Minister Rishi Sunak had hosted the CEO in order to convince him to list on the LSE. (Robinson, 2023) SoftBank’s CEO also stated that another reason why the company is better suited to a US listing is simply because “most of Arm’s clients are based in Silicon Valley and… stock markets in the US would love Arm.” (Clark, 2022)

3.5.4 Expectations vs. Reality

It is clear that both SoftBank’s and Arm’s leadership was certain that they would be better off with a US listing than with a UK or a double listing, and that their expectation was a higher shareholder value delivered.

Naturally, Arm originally being a British company, UK government officials and the financial community in London were disappointed by the news as it was definitely a significant loss both for the country, as well as for the LSE. Russ Shaw, founder of Tech London Advocates, said that the decision is a significant blow for the UK tech sector and that Arm has been an important global leader in the semiconductor space and an exemplar British technology and chip design company. He also stated that this was a direct consequence of the UK government's shortsighted decision to allow Arm to be sold to a foreign buyer – meaning SoftBank – in the first place, which he reckoned would not have happened elsewhere. (Robinson, 2023)

Does being listed in the USA lead to better valuations?

In terms of investors, as SoftBank's CEO pointed it out, a lot of investors, including big institutional players and BigTech, such as Nvidia, Intel, or Apple, and more, expressed interest in participating in the IPO. This definitely signaled a positive expectation from the US listing.

Summary (in $ billions)	Arm Holdings	Nvidia	Qualcomm	Broadcom	AMD	Intel
2023						
Enterprise Value (EV)	125.58	1,491.19	124.24	371.06	234.84	241.01
EV/EBITDA	450.11	42.48	11.87	18.29	57.59	22.14
EV/Revenue	38.84	24.48	3.47	10.36	10.35	4.44
2024 Expectation						
Enterprise Value (EV)	130,28	2,750.90	212.69	852.89	262.57	178.89
EV/EBITDA	79.94	36.61	15.48	25.99	26.53	11.01
EV/Revenue	38.72	23.93	5.89	15.66	9.97	2.98
2024-2026 Expectation						
Average EBITDA Growth	27.29%	26.67%	8.54%	17.62%	29.81%	13.01%
Average Revenue Growth	20.21%	25.28%	8.37%	13.13%	24.06%	10.68%

Table 4: Valuation Metrics for Arm Holdings Plc. and its Competitors
(Source: Refinitiv)

As Table 4 shows above, in terms of valuation metrics Arm has reached a very desirable spot, being the highest valued in terms of EV/Revenue, EV/EBITDA, and having the highest expected EBITDA growth. This signals the extreme growth, future profit, and cash expectations the market has from Arm. It is very hard to compare Arm to these competitors in terms of profitability measures as Arm is absolutely on its own in the IP space when it comes to semiconductors, and therefore the financials are very different in terms of operating margin, EBITDA margin, or net margin. If we look at the past three years and the trajectory of Arm in terms of these numbers we can see a consistent decline, and it is mostly driven by the fact that since 2021 they increased R&D spending from $770 million to $1.92 billion (from 37.8% to 59.4% of revenue), a 2.49x increase, while revenues only had a 1.6x increase. We believe that this is due to the amount of research & development that is needed to stay the number one company on whom the AI leaders and largest chip manufacturers rely.

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3.5.5 Case Conclusion: Was it the Right Decision for Arm?

It is always very hard to say with certainty what would have happened if some things had gone differently, and so is the case with Arm. However, we have some very strong supporting facts that clearly undermine the probability of a scenario in which a UK listing would have brought a more desirable outcome. First of all, the center of the AI race is in Silicon Valley, and BigTech means the majority of the capital is there. Also, most of Arm's customers are in the US, and the European listing has clear disadvantages for companies as huge and as large as growth prospects as in the case of Arm, as we have seen in the case of Linde. Furthermore, the UK confessed back in 2021 that its exchange needs reforms to be more competitive with the US. Knowing the above facts, and seeing the valuation metric Arm has achieved in the context of its peers in less than a year, as well as their stock performance, it seems a very sound decision that they listed in the US instead of in the UK. We would like to point out though, that the BigTech influence in this case might have been bigger than anything else.

3.6 TotalEnergies

TotalEnergies, as one of France's biggest listed companies, has recently voiced an interest in moving its primary stock market listing to the States. The decision has not been made, yet, therefore this subchapter will miss the financial analysis and final evaluation of the move since it can only be based on assumptions. Total's CEO has mentioned that the firm's board will announce their decision by the end of the year. Having a look at the reasons that have been publicly mentioned and the response from financial media including their analysis of those, is still interesting and relevant to our research.

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3.6.1 Public Announcements to Date

First, the company has published a press release announcing its interest in the move of its primary listing mentioning the following: "The Paris-based company says it has 47% of institutional shareholders in the United States, and 39% of all global shareholders are located there." Also adding: "'US shareholders are buying, European shareholders are not so buying, so we must think of it, TotalEnergies' CEO Patrick Pouyanné said, adding he planned to report to the board on the issue by September." (Reuters, 2024) According to our research and literature so far, when a firm has the majority parts of the business or shareholders in the US, it is common for firms to consider switching their primary listing. Whether they are going to keep their listing in Paris is not clear, yet, but we expect it as keeping it offers clear advantages, such as higher liquidity, more transparency, and the remaining tight connections to Europe. It is crucial to understand that switching the primary listing location has no operation implications and will not affect the business significantly.

Second, the CEO of TotalEnergies has mentioned another argument for their decision, ESG, which has been discussed publicly a lot. He said: "The urge to shake off this [ESG-]discount is particularly strong for Big Oil, which is regarded more favourably by Wall Street fund managers who pay less attention to environmental, social, and governance metrics than their European peers." Hereby he refers to slightly stricter ESG restrictions in Europe compared to the US. Emmanuel Macron, the French President, has been questioned about this discrepancy, which he accepted and turned to show Europe's pioneering position in this matter. For example, BNP Paribas, the European Union's largest bank, has said it won't be participating in conventional bond issuance for the oil and gas sector increasing its restrictions on fossil-fuel clients. (Jacob, 2024) Another argument made in the same publication was about the difference between ADRs and normal stock, Pouyanné said: "What we observe is that we have more and more US shareholders. Today we can only offer them ADR and we want to offer them shares."

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(Jacob, 2024) There is an argument to be made that normal shares are more attractive and potentially more visible to US-based investors. However, technically it shouldn't make a difference to an investor whether they buy ADRs or normal shares.

In an article by Reuters, the authors shed light on the downsides of the potential relisting and give reasons why it may be a poor decision. (Chen, 2024) Generally, they start their argumentation by weakening the main point mentioned by Pouyanné, being that US investors are currently holding back due to the listing option. Since US citizens already represent a strong share in TotalEnergies' investor base they are likely accepting the listing option they have been given so far. Additionally, Pouyanné has made it part of his current green-energy strategy to focus more on the firm's electricity unit, which is inherently local and reliant on collaboration with the government. Moving away from the primary listing location, which already caused public debates including the French President, Macron, will do more harm than good to those relationships. (Chen, 2024)

3.6.2 Case Conclusion: Will TotalEnergies Proceed with the Relisting?

There are obvious points steering the motivation of TotalEnergies' leadership and its main intention might also be to push for loosening regulations on the ESG side in the EU, which play a big role for the oil and gas company. As the announcements have already had a lot of public feedback and steered political debates, the initial goal of Pouyanné might have been achieved. However, Macron already stated that he will not move his regulatory standpoint, which he finds reasonable and in line with the European Union's vision. (Nussbaum et al., 2024) President Macron underlines his position by saying that "the US regulation in terms of climate change should be more serious and realign on the European ones." This shows his conviction to fight climate change and his conviction to his voters.

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We cannot predict the decision of TotalEnergies but think they will follow through as the board has been affirmative of the idea all along. However, we do not expect significant improvements in the firm's valuation as a significant proportion of its investor base is already US-based and its business might become increasingly difficult due to the damage done to its relationship with the European Union.

3.7 Key Takeaways from the Case Studies

In summary, our cases shed light on several issues that companies and leadership cite as their main reasons for switching exchanges. A significant rationale is the valuation limitations due to EU regulations, where European regulatory constraints, such as UCITS fund regulations, often suppress market valuations by necessitating share sell-offs if certain caps are exceeded. In contrast, US exchanges do not impose these specific constraints, allowing for higher potential valuations. Additionally, companies benefit from increased exposure and market presence by being listed in the US, which is a more globally recognized market. This is particularly advantageous for firms with significant operations or growth ambitions in the US market. The enhanced liquidity and trading volume of US financial markets is another key factor, offering more active trading and easier access to capital. The regulatory and operational efficiencies under the US system, which often appear more streamlined compared to the multifaceted EU regulatory environment, also appeal to companies seeking reduced operational costs and simpler governance structures. Index inclusion benefits in major US indices like the S&P 500 provide another motivation, as such inclusion can attract automatic buying from index funds, potentially boosting stock prices. Lastly, the attractiveness to US investors – who often favour growth and innovation over conservative investment approaches – can lead to higher valuations compared to European markets.

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4. Implications for European and US Regional Competitiveness

If we look at our findings in terms of comparing the European and US stock exchanges, we must conclude that the issues found build a structural base that makes the US listing a more attractive one compared to a European one. This finding, together with the fact that they all point to one direction, which is that companies can achieve a greater shareholder value in the US, led us to conclude that the decision to delist is less of an individual strategic or random decision – even though a strong presence in the US is definitely an individual reinforcing factor – rather than a rational reaction to the quality gap that exists between two locations.

4.1 The Quality Gap's Economic Consequence: Lower GDP Growth

Even though there is a huge difference between the economy and stock markets – the latter is forward-looking, while the former might sometimes look back at what has already happened – there is a strong connection, in particular, stock markets tend to often lead economic cycles. There have been numerous studies to examine whether investor expectations on the market – which is known to affect stock prices – can be used to predict what will happen to the economy. It can be shown that on average between 1913-1945 stock market returns explained an average of about 22% of GDP growth, then between 1945-1976 32% and 38% thereafter up until 2015. (Jordà et al., 2017) This suggests that economic growth has long been at least partially predictable by equity returns and the predicting power has been growing over time. Knowing this, and the fact that the most cited reasons against the European stock exchanges all point towards the direction of missing out on shareholder value – essentially meaning lower returns – we now have reason to think that there is a connection between delistings and economic output. In fact, excessive delisting can reduce aggregate investment in the economy, can undermine political support for business-friendly policies, and can impose negative externalities on certain economic actors. (Ljungqvist et al., 2016) In our view, therefore, an undesirable and less attractive stock exchange regime – the quality gap – can and does negatively impact a region's economic competitiveness.

4.2 Enhancing European Stock Market Competitiveness

Therefore, especially nowadays, in times of economic and geopolitical fragmentation when each region is more and more dependent on itself and must rely on itself, it is important to focus on how to increase competence, knowledge, and therefore competitiveness.

Both the UK and the EU had very significant examples in the recent past where they lost an incredibly important global leader on their stock markets, namely Arm Holdings and Linde. The former, a company founded in the UK, enables the world chip manufacturing industry by its CPU and GPU IPs and is present in 99%[9] of the smartphones used globally. The latter, a German company, is the world's largest industrial gas company by both market share and revenue.

We believe that these big losses and the other examples of recent delistings discussed in our paper signify that Europe is in a disadvantaged situation in terms of attracting public companies. However, by increasing the competitiveness of the European stock exchanges, the region can avoid such great losses in the future, and beyond that the region can achieve a higher degree of economic growth.

We would like to propose a set of directions that can serve in favour of the European stock exchanges and their attractiveness. Our recommendation is based on four pillars: Consolidate stock exchanges, Lower Entry Barriers, Accelerate Tech Developments Towards T+1 Settlement, and Boost Liquidity Trough Pension Programs.

[9] Source: Arm's Official Website - https://www.arm.com/company

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4.2.1 Consolidate Stock Exchanges

The aim of consolidating European stock exchanges would be to address the fragmentation issue that leads to higher costs and inefficiencies, as well as huge obstacles to bigger capital markets compared to the more unified US exchanges. (Wright & Hamre, 2021) This fragmentation complicates cross-border trading, making it expensive and less appealing for investors and companies, yet the demand for such trading has been there for more than two decades. (McAndrews & Stefanadis, 2002) A unified exchange can reduce these costs, simplify trading, and enhance market liquidity by attracting more investors and increasing trading activity.

However, challenges include overcoming regulatory and legal barriers, as each country has its own framework. Efforts, such as the Financial Services Action Plan (FSAP), including directives like MiFID and the Prospectus Directive, are instrumental in promoting competition and reducing barriers to consolidation. (ECB, 2007) Economic concerns regarding the loss of local control and resistance from national regulators and stock exchanges also pose significant obstacles. Despite these challenges, consolidation could boost the global competitiveness of European markets and strengthen the region's economic position.

4.2.2 Lower the Entry Barriers

A key factor contributing to the lack of competitiveness of European stock exchanges compared to the US is the higher entry barriers for companies looking to list. Despite higher maintenance costs in the US, its exchanges are considered more prestigious and easier for initial public offerings (IPOs). Furthermore, the US benefits from a highly active venture capital (VC) scene, adding pressure on companies to list there. To address these issues, European markets must lower entry barriers for companies, making the process of going public less cumbersome and more attractive.

The existing complexity and fragmentation of European markets make IPO processes more daunting. Simplifying regulatory requirements and harmonizing standards across the EU can significantly reduce these barriers. For instance, consolidating multiple exchange groups into fewer, more cohesive entities can streamline listing processes and reduce associated costs. This harmonization could also include a single set of rules for disclosures and governance, making the market more accessible and attractive to companies and investors alike. This means that consolidation has the potential to solve two issues at once. (Wright & Hamre, 2021)

4.2.3 Accelerate Tech Developments Towards T+1 Settlement

A T+1 settlement refers to the process of completing securities transactions within one business day after the trade date. Previously, the US followed a T+2 settlement cycle, which took two business days, but since the 28th of May, 2024 they have been operational on a T+1 system. (SEC, 2024) This change aims to reduce credit and market risk, improve market efficiency, and align with technological advancements in the trading landscape.

European exchanges currently operate on a T+2 settlement cycle, which puts them at a disadvantage compared to US markets that have shifted to T+1. The longer settlement period in Europe can lead to higher exposure to systemic risk, potentially making European exchanges less attractive to global investors. This time lag can also result in reduced liquidity and efficiency, hindering the overall competitiveness of European markets. (Jones, 2024)

Transitioning to a T+1 settlement cycle in Europe involves several steps and challenges. Firstly, it requires significant coordination among various market participants, including clearinghouses, custodians, and broker-dealers, to ensure all systems and processes can handle the faster settlement timeframe. Secondly, regulatory changes must be enacted across multiple jurisdictions to harmonize the new settlement cycle. Additionally, market participants need to upgrade their technological infrastructure to support the accelerated timeline. Despite the complex and time-consuming nature of the transition, moving to T+1 settlement is crucial for enhancing the global competitiveness of European stock exchanges. However, as Citibank Europe Plc pointed out it would be “misleading to look at how the US is approaching the T+1 migration since the EU post-trade ecosystem is much more complex”. (Ritchie & Gledhill, 2024)

4.2.4 Boost Liquidity Through Pension Programs

Europe is experiencing a significant demographic shift, with a growing proportion of elderly citizens. As of recent data, over 20% of the European population is aged 65 and older, and this is expected to increase to 30% by 2050. (Eurostat, 2020) This aging population results in a substantial amount of capital in pension funds, making it a significant pool of investment capital that can be mobilized to increase market liquidity.

European markets can attract more capital by creating incentives for pension funds to invest in equities. This can be achieved by simplifying regulations and providing tax benefits for long-term investments. Additionally, adopting a strategy similar to what Germany is about to do has the potential to significantly boost liquidity. According to Finance Ministry officials, Germany plans to move in the direction of Sweden and Norway where individuals have access to capital markets within the framework of the state pension system. Christian Lindner, Finance minister of Germany, admitted “We should have started to exploit the opportunities of the capital markets… a long time ago”. According to the legislation, the German government will raise EUR 12 million in debt and transfer the amount into the new fund created to invest in the stock markets. The proceeds from the investment will then be used to keep the pension system stable. (Chazan, 2024) We believe this can be a mutually beneficial deal for both the pensioners and the competitiveness of the markets. Not only does this legislation improve the German pension system, but also it enhances liquidity.

5. Conclusion

Looking at all the cases that we have reviewed in our paper, we can see that all companies had one common factor driving their decisions: Being listed in the US is perceived to allow companies to bypass more stringent EU regulations that can limit valuations, and thus achieve higher shareholder value.

This means that there seems to be a structural disadvantage to being listed on a European stock exchange rather than on an American one, thus hurting the competitiveness of the region as numerous significant companies decide to move from, or not even IPO there. In our view, the quality gap is quite significant, and regulators should consider reassessing their current system of laws and regulations regarding original listing and maintenance requirements, as it clearly hurts the region's economic competitiveness.

We believe our recommendations and directions of improvement can serve as a valuable starting guideline for regulators to start catching up with the competition. By implementing these measures, European exchanges can become more competitive, and attract and reduce the allure of US markets. However, these efforts must be accompanied by strategic initiatives to enhance liquidity and investor engagement, ensuring a comprehensive approach to making European stock markets more attractive and competitive on a global scale.

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