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THE LISTINGS ECOSYSTEM: ALIGNING INCENTIVES

ASSET MANAGER PERSPECTIVE

Companies deciding to go public enjoy a number of advantages that complement the original intention of their founders' capital raising and risk-sharing needs. These include improved liquidity, transparency and visibility. In addition, growth in publicly quoted companies is a key driver of economic development, generating healthy competition and creating jobs. The apparent decline in the number of company listings, at least in developed markets, is therefore worrying for investors, exchanges and regulators alike. Unintended consequences of regulations, lower capital needs, expansion of alternative funding sources, and changing market structure, amongst others, have been suggested as possible causes to this systematic decline.

We discuss this important issue from an asset manager's perspective. We provide a framework that attempts to address this decline, and propose possible remedies that could be taken by the various stakeholders to encourage more listings. We argue that, at its core, the listing ecosystem needs to establish a new equilibrium to address the evolving conflicts of interest between founders, early investors, underwriters and future shareholders. We also propose some practical steps that could be taken by other stakeholders including broker/dealers, exchanges and index providers.

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Introduction

Publicly traded corporations are arguably one of the key ingredients of modern capitalist societies. Their invention, with the Dutch East India Company in 1602, enabled the emergence of efficient capital allocation mechanisms. This has been instrumental in facilitating economic growth.

For founders of companies, they provide an avenue to raise capital from a potentially wide range of investors. The rights and obligations of shareholders, board and management are clearly delineated, giving the founder/manager a clear framework in which to manage and grow the corporation.

For investors, publicly traded corporations, particularly their modern limited-liability form, provide many important advantages. They allow participation in economic growth that is realised through income growth for the corporation and either distributed to shareholders via dividends or retained, increasing the book value. They allow investors to diversify risks and store wealth by spreading investments across multiple corporations. They provide the potential to liquidate the investment through a secondary market, allowing for better duration matching. Lastly, and importantly, they come with limited liability, allowing investors to separate their investment decision from their leverage decision.

The infrastructure to support the interactions between publicly traded corporations and their investors is complex and robust. It includes a regulatory framework that specifies the contractual relationship between corporates and their shareholders, such as disclosure and audit rules, board representation and voting rights. This framework is often supplemented by listing regulations, typically imposed by stock exchanges in their role as listing venues, which specify certain minimum requirements on firm characteristics before admitting a firm to list on the exchange. Together, these regulations ensure that a well-defined set of the corporation's private information is made public, thereby substantially lowering the due diligence costs for shareholders.

The infrastructure also includes stock exchanges in their role as trading venues, broker/dealers and underwriters. Lastly, the intermediated, professionalised nature of much of modern wealth management means that financial index providers have also come to play an important role.

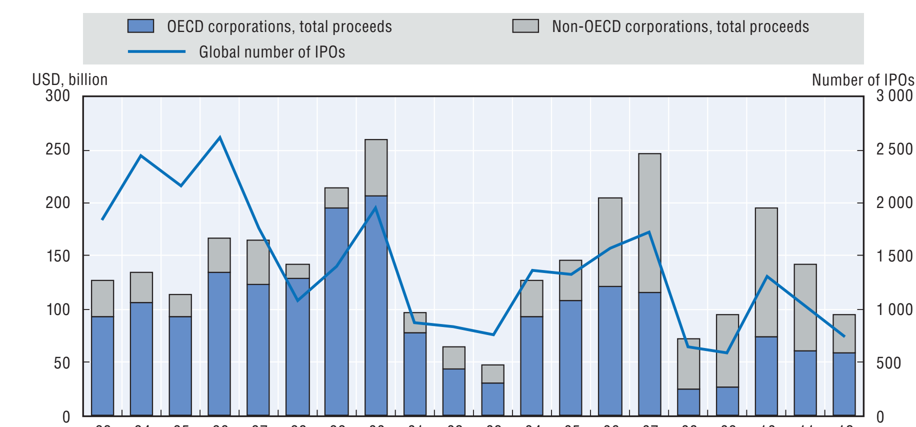
This infrastructure has evolved over time to manage the inherent conflicts of interest between the founders and early investors in a company on the one hand, and the investors in the publicly listed shares of the company on the other. The price at which the company is taken public is at the core of these conflicts – determining how the net present value of future cash flows from the company are split between the participants. Early investors receive a lump-sum at the time of the initial public offering (IPO), while public investors receive a stream of cash flows over time. They also have the option of selling their shares in the secondary market in exchange for a lump-sum determined by the then-current price.

The optimal balance of these conflicting interests changes over time. As founders' capital needs, investors' objectives and time horizons, and market transparency change, so does the distribution of future cash flows. Historically, the market has found ways to implement these distributional changes by adjusting the incentives to the various participants. Publicly listed corporations have remained at the pinnacle of all funding structures. One example of how the market has responded to such changes are the restrictions for venture capital backers that have often been stipulated in the IPO documents. These backers were only able to sell their shares sometime after the IPO. This has served as a credible signal that the founders were willing to forego some of the present value of future cash flows and has made IPOs more attractive to public investors.

Recent Declines in Listings

Developed markets globally have experienced a significant reduction in the number of listings in recent years. This is driven by lower levels of IPO activity, while the average life span of listed corporations has not increased. Given the critical importance of the public listing process for companies and their founders, for investors, and for the growth of the economy at large, this slowdown is a concern. It also comes as somewhat of a surprise, given the historical resilience of the IPO market and its ability to adjust to changes in the interests of market participants and in market conditions. Figure 1 shows the evolution of global IPOs since 1993, both in terms of the dollar amounts raised and the number of IPOs. There has been a persistent downward trend in the number of IPOs. Furthermore, the balance of proceeds raised has shifted towards non-OECD countries in the last decade, routinely making up more than half to the total proceeds.

Figure 1: Global Trends in Primary Equity Markets[1]
Number of initial public offerings worldwide and the amount of equity raised by OECD and non-OECD corporations (2012 USD, billions)



Note: Data excludes investment funds, REITs, banks, insurance companies and other financial sector corporations. Covers a total number of 30 221 IPOs from 87 different countries.

Source: Based on data from Thomson Reuters New Issues Database, Datastream, stock exchanges' and companies' websites.

1 *Mats Isaksson and Serdar Çelik (2013), "Equity markets, corporate governance and value creation", OECD Journal: Financial Market Trends, Vol. 2013/1 DOI:* http://dx.doi.org/10.1787/fmt-2013-5k40m1ntmhzs

The reduction in IPO activity has meant that the breadth of listed companies has decreased, in some cases substantially. In the US, for example, the number of listed companies peaked in 1996 at 8,025. Since then, the number has dropped by nearly 50% to 4,102 in 2012. A recent paper[2] refers to the combination of declining new listings with a constant number of delistings as the 'listing gap', a terminology we adopt in this note.

Since the IPO market infrastructure has historically been able to adjust to changing investor and founder needs, what can explain this decline in IPO activity? A number of explanations have been suggested. However, as Doidge, Karolyi and Stulz (2015) show, composition- and flow-related explanations cannot fully account for the listing gap we observe, at least in the US.

One of the explanations for the decline in IPO activity is the increasing regulatory burden for listed companies in many jurisdictions – the US Sarbanes-Oxley Act of 2002 and the SEC's Regulation Fair Disclosure (Reg FD) are often seen as prime examples. Regulatory burden presents a fixed cost to firms, as well as a (smaller) variable component. As a result, it particularly impacts smaller firms, and might lead the owners to decide to stay private for longer. Moreover, the recent US JOBS act of 2012 has increased the number of shareholders a company is allowed to have without it having to register its common stock with the SEC and becoming a publicly reporting company. This also has the effect of delaying the need to go public.

Market conditions and market structure might be another factor in the decline of listings. On the one hand, large institutional investors have become increasingly important participants in equity markets, as individual investors outsource the management of their retirement savings to professional managers. This leads to a significant reduction in the number of market participants making decisions about investing in the public equity of particular companies. As the number of decision makers decreases, and their investment horizons become longer, the distinction between investing in public equities and being a private equity investor shrinks, at least from a liquidity perspective[3]. The evolution of equity market structure contributes to this. We have witnessed a significant reduction in the capacity of liquidity providers as traditional dealers and market makers have been replaced by high-frequency traders with considerably smaller balance sheets.

The feasible set of institutional investment strategies has shrunk towards passive index-like portfolios as a result of this concentration, with an associated reduction in turnover. This often means that smaller-capitalisation stocks are less attractive, since they are more difficult to integrate in passive index-like portfolios. Incidentally, this trend is favorable to active management.

2 *Craig Doidge, G. Andrew Karolyi and René Stulz, "The U.S. Listing Gap", NBER Working Paper No. 21181, May 2015.*

3 *See also José Azar, Martin C. Schmalz and Isabel Tecu, "Anti-Competitive Effects of Common Ownership", Ross School of Business Working Paper No. 1235, April 2015. The authors show that common ownership of natural competitors by a small set of large diversified institutional investors leads to reduced product market competition, decreasing the potential growth benefits.*

The dominance of large institutional investors may also lessen the benefits of a diversified investor base. Agency costs, particularly for cash-rich, low-growth industries, may presage a shift to other organisational forms with more concentrated ownership[4] and a more explicit focus on long-term cash flows.

Another reason for the decline in listings may be structural changes in the sectoral composition of economies. In current high-growth industries, particularly the information technology sector, bringing products to market quickly is an important competitive differentiator. This disadvantages independent small firms relative to larger organisations that can realize economies of scope. Instead of organic growth through an IPO, small companies might strategically prefer mergers or acquisitions to help with speed to market.[5]

Lastly, venues may be providing an insufficient range of listing options, particularly for smaller, regional firms. This might mean that for some of these companies, listing publicly is not a viable option for raising capital. In addition, capital market advisory work, whether from investment banks or boutiques, continues to play an important role in the successful placement of public equity such as having relationships with a suitable set of potential investors and assisting in the initial price discovery through the IPO. There may be insufficient interest by these advisors for smaller, regional deals. This may also hamper the ability of firms to raise capital through listing.

In most developed markets, private equity continues to far exceed public equity ownership – there is considerable potential for more listings activity. What, then, can account for the relative dearth of listings? Are the reasons listed above a sufficient explanation, and do they reflect secular or cyclical trends? This paper attempts to provide a perspective on possible remedies to address the listing gap across the financial ecosystem.

Listings Activity as a Function of Stakeholder Incentives

The level of listings activity is crucially dependent on the outcome of the adversarial game played between founders/early investors on the one hand and public shareholders on the other, with underwriters, exchanges and index providers playing important supportive roles. The objective of the game is the distribution of the present value of future cash flows from the company. Pricing this too low will make founders hesitant to sell. Pricing it too expensively may make public equity investors hesitant to commit capital.

Getting the balance right is a function of the market environment, and of the set of alternatives available to each player in the game – for founders, the op-

4 *Michael Jensen, "Eclipse of the Public Corporation",* Harvard Business Review, *Sept/Oct 1989.*

5 *Xiaohui Gao, Jay R. Ritter and Zhongyan Zhu, "Where Have All the IPOs Gone?",* Journal of Financial and Quantitative Analysis, *48/6, Dec 2013.*

tion to stay private; for public equity investors, the option to build up private equity investment expertise. We need to consider the incentive structure and the available alternatives for each of the key stakeholders – founders/ early investors, public equity investors, listing venues, underwriters and index providers – and how these might have changed in recent years.

The Role of Founders

The entrepreneurial founder's objective function and incentive structure revolves around two variables – the need for capital to grow the company, and the desire for control and flexibility. Generally, there is tension between these two factors. Historically, taking a company public has been one of the main avenues of raising capital, even though it comes with important restrictions on the founder/CEO's flexibility on managing the company.

More recently, two developments have potentially reduced the founder's need to raise capital through an IPO process. First, the capital needs of many founders are considerably lower in generally services-oriented developed economies than they would have been in economies dominated by manufacturing. At the same time, the likelihood of survival of new companies, particularly in the information technology segment, is relatively lower even if the return on capital of the successful firms is often higher.

Second, there is a greater range of alternative capital sources available – from private equity to 'crowd-sourcing' to debt finance. Common to all these alternatives is that the public reporting requirements and the important role of equity markets as a 'weighing machine' are replaced by private mechanisms of oversight and control. Price discovery on equity markets is an important way to share risk and the burden of oversight and control, which lowers investment costs. On the other hand, keeping these mechanisms private, albeit less efficient, gives founders greater scope to maintain control.

For many startup companies, particularly in the technology and biotechnology sectors, the time period in which they can enjoy limited competition is shrinking, making organic growth with an IPO somewhere along the line a less promising strategy. Instead, we have seen greater propensity to be acquired by a larger, often public company. In a sense, this does make the earnings potential of these companies available to public equity investors. However, it does not help in increasing the diversity of public listings.

Given these changes – many of them secular – what role do public equity markets play in the funding of new companies? In many cases, acquisitions of startups by established public companies mean that the earnings potential – and often some of the growth potential – does become available for public equity investors. However, the lower capital intensity of many startup companies also means that the need for public funding comes later in a company's life. This means that a greater proportion of the growth potential might have already occurred by the time the company becomes available for public equity investors. IPOs become vehicles for cashing-out, rather than for capital-raising, and the equity risk premium may decline.

The Role of Investors

This potential reduction in equity risk premium has an impact on public equity investors, of course. Ultimately, all capital invested is sourced from the savings of households. These savings are used for intertemporal consumption smoothing (particularly through retirement accounts) as well as for intergenerational wealth transfers. The objective function for savers has two key components – the safeguarding of purchasing power, and the participation in economic growth, which can lower the savings rate needed for retirement accounts.

Over the last few years, households as investors have increasingly delegated the investment decision making to professional managers. This is a global phenomenon. The net result is that the overwhelming majority of publicly listed assets – including equities – are now controlled by entities that are professionally managed, particularly in developed markets.

Such delegation of investment decisions requires communicating the investment objective to the manager – the balance between safeguarding purchasing power and participation in economic growth. Based on these investment objectives, the professional manager can then determine an appropriate asset mix.

Historically, a significant portion of these savings were invested in publicly listed assets, in particular equities and bonds. Ensuring a consistent supply of these was critical as global savings continued to grow. However, the increasingly institutional management of these savings has the potential to broaden the universe of potential assets. The economies of scale inherent in institutional management might allow participation in private equity, for example, without a significant increase in the overall risk profile of the investment mandate. In the US, we have seen a number of examples of mutual fund managers investing some of their assets in unlisted startup companies in the tech sector. This, of course, comes at the expense of foregoing some benefits of liquidity in an asset allocation context (e.g., rebalancing benefit).

This means that savers can potentially access the earnings growth potential of younger companies even if these companies decide to raise capital outside of public markets. In such a world, the role of publicly listed companies becomes one of purchasing power maintenance – we would argue that the rise of passively managed equity funds, in particular, can be at least partially attributed to this shift.

The Role of Capital Markets Groups, Underwriters and Broker/Dealers

Capital markets groups and underwriters are central to the process of publicly listing a company. They provide advice to the founders and owners of the company about the selling process. They perform due diligence on the company as part of the underwriting process. Finally, they interact with investors in public equity to place the new company's shares and determine the IPO price.

In this role, underwriters are the nexus for the conflicts of interest between the selling founders and the initial public investors. Selling founders gener-

ally want to maximize their payoff, if they are selling some of their shares, or alternatively maximize the new capital raised for the firm with the minimum dilution possible. Initial public investors want to ensure that they are not over-paying for the newly listed stock and that they will be able to participate in some of the future growth of the company.

From a game theoretic perspective, underwriters are thus involved in a number of games. First, a game with their competitors and the founders to win the mandate to take the company public. This is followed by two simultaneous games with the founders on the one hand and with potential shareholders on the other hand to determine the IPO price.

Crucially, while underwriters play a one-shot game with the founders, they play a repeated game with their competitors and with potential shareholders. This characteristic of the game has led to considerable complexity – in the one-shot game with founders, underwriters often do not compete purely on price (underwriting fees), but also on their distribution network, league table results, sell-side research coverage and other qualitative factors. In the repeated game with potential shareholders, reputation effects play an important role, as does the broader business relationship. In particular, underwriters may interact with different types of potential shareholders. These may include long-term investors in the new corporation, as well as short-term liquidity providers who may flip the new shares shortly after the listing.

Because of the complexity of these games, underwriting has remained a relatively high-cost, manual process. Historically, much of this cost has been borne by the selling founders, both through underwriting fees and a tendency to underprice IPOs. The latter may be necessary to manage the conflict between founders and public shareholders. The former, however, is as much a function of historical custom as of necessity. For example, the process of collecting indications of interest (IOIs) from potential shareholders is still essentially a manual process, conducted over the phone.

The high cost of this manual process has meant that many underwriters have focused on relatively large IPOs. Smaller firms have often been underserved, which may be one of the reasons that being acquired by a larger company has been a more frequent exit strategy.

We believe that there is considerable scope to reduce these high costs – through automation (for example, of the IOI process) and through streamlining the due-diligence process. There is also room for advisory boutiques to step in and fill the apparent gap in the small-to-midcap market segment.

The Role of Listing Agents and Exchanges

In a previous note[6], we discussed the evolution of exchanges in the context of changing investor mix and increased market structure complexity. One of the key roles of exchanges is providing listing privileges and ensuring the high quality of companies that go public. Listing requirements improve a company's operations and corporate governance standards by opening up to the

6 See Norges Bank Investment Management "Role of Exchanges in Well-Functioning Markets", Asset Manager Perspective, #02-2015. https://www.nbim.no/en/transparency/asset-manager-perspectives/

public, including analyst research and media scrutiny. Numerous benefits to the shareholders and employees accrue through listing.

Practitioners have argued that the rules, and associated implementation costs, set by regulators and exchanges may have become too burdensome for smaller firms, thus delaying their decision to go public. At the same time, the proportion of main exchanges' overall revenues coming from listing activity, and cash trading activities more broadly, have declined as new sources of revenues have developed, including information services and other product developments.

A company's choice of where to list is no longer restricted to its domestic base of incorporation. Driven by globalisation of financial markets, increased market complexity and consolidation trends, local exchanges face competition from their international counterparts for the listing business, as well as from other trading platforms, including private exchanges. Intensified competition have challenged exchanges to maintain their regulatory and corporate governance duties, while, at the same time, their ability to address the listing gap.

To fulfil their mission, exchanges need to continue to evolve, managing a delicate balance between the needs of founders, investors and issuers. We encourage exchanges to develop new solutions here – be they in the form of new listing classes or alternative trading platforms – to enable smaller firms to go public at an earlier stage in their life cycle.

Some exchanges have taken concrete steps to encourage smaller firms to go public. We welcome the introduction of junior, secondary exchanges to reduce barriers of entry for smaller firms. In particular, some eligibility criteria could be relaxed such as trading liquidity and reporting frequency, at least at the early stages of a newly listed company's life cycle. The more stringent conditions can be re-applied at a future date based on growth in company size. Policy-makers may also consider tax incentives for such (smaller) firms as they choose to go public, again perhaps for a limited time horizon and size criteria.

The Role of Benchmark Providers

Index providers have evolved over the years and have become a major force in financial markets. A key catalyst in our view is the increased institutionalisation of the asset management industry, which led to growing usage of indices acting as benchmarks to measure relative performance of both active and passive managers.

In general, indices used for benchmarking are broad representations of underlying public markets. The most common weighting methodology of such indices is the free-float market-capitalisation weighted scheme. Index providers also calculate narrower indices with a fixed number of securities; these are widely quoted as barometers of market movements, and commonly used as underliers for financial derivative products (e.g., futures and options). At the same time there has been a significant growth in Exchange Traded Funds (ETFs) that typically mimic the performance of these narrower indices. Assets

linked to ETFs are now purported to be close to the size of the hedge fund industry.

Companies which are constituents of market indices tend to have better analyst research coverage. This can increase investor awareness. Moreover, given tracking risk constraints imposed by investment mandates, there is a higher chance that portfolio managers include securities which are members of their benchmarks rather than ones which are not, even if they are unfavoured stock picks, albeit as underweights relative to their index weights.

Coupled with membership-driven coverage and media attention, companies are also incentivised to become index members in the major indices as growth in passive funds have resulted in favourable capital inflows. It is perhaps not surprising that IPO eligibility for index inclusion has become a factor for issuers and underwriters as prerequisite in driving such non-fundamental liquidity demand at the nearest possible index rebalancing or event-driven consideration date.

Index providers apply different IPO eligibility rules including domicile, free float and tradability (liquidity) considerations. While index providers' definition of free float also varies, they all have strict hurdles on free float adjusted market capitalisation for newly listed companies to exceed before being considered as eligible for inclusion. Coupled with liquidity criteria, many of the potential smaller firms do not pass these inclusion tests.

In order to encourage more visibility early in the growth cycle of these smaller companies, and to incentivise them to go to public markets, index providers should revisit their eligibility rules. For example, a provider could consider ladder-based free float or market capitalisation bands, where companies can enter with lower initial weights at beginning of their life cycle, and their weight increases if they grow in size or provide more free float to the market. Otherwise, index providers could exercise the option to exclude the company from its index post a given pre-set time period.

Conclusion

Developed markets globally have experienced a significant reduction in the number of listings in recent years. This is driven by lower levels of IPO activity, while the average life span of listed corporations has not increased. Given the critical importance of the public listing process for companies and their founders, for investors, and for the growth of the economy at large, this slowdown is a concern.

The potential for listing activity remains strong in our view, as there is a significant fraction of equity that remains unlisted. In Europe, for example, our analysis of economic activity using OECD data shows that there may be around 40% of all United Kingdom equity that remains unlisted, and 80% in Southern and Eastern Europe, including major markets such as Spain and Italy.

While there have been a number of arguments put forward to explain the listing gap, none seems to stand out as a key driver. In this note, we added our perspective on this debate. We provided a framework that attempts to address such a decline, and proposed possible remedies that could be taken by the various stakeholders to encourage more listings come to market. We argued that the listing ecosystem may need to establish a new equilibrium to address the evolution of the conflicts of interest between founders, early investors, underwriters and future shareholders.

Due to a number of factors, the founders' incentive structure may have changed sufficiently opting for alternative mechanisms for capital raising, cashing out via acquisitions, or delaying their decision to list. At the same time, there is growing appetite from an increasingly institutionalised wealth management industry to broaden the universe of investments by including start-ups and younger companies at the early stages of their earnings growth, with particular interest in public equity. Creating a suitable match between the various parties is key to resolving the problem.

Underwriters as intermediaries play a critical role in readdressing the balance of incentives between the founders on the one hand and the potential early shareholders on the other. This includes possible recalibration of IPO price and devising customized structures to address founders' and shareholders' concerns, while competing with alternative sources of funding. There is room for improvement in streamlining the price discovery process to reduce the costs associated with a company going public; this may be achieved through automation (for example, of the IOI process) and through streamlining the due-diligence process. There is also room for advisory boutiques to step in and fill the apparent gap in the small-to-midcap growth market segment where some investment banks may have strategically withdrawn.

Other stakeholders also need to become proactive in addressing this issue, in our view. The main exchanges may have become less welcoming to smaller firms given regulatory and other market structure changes. We encourage exchanges to develop new solutions here – be they in the form of new listing classes or alternative trading platforms to enable smaller firms to go public at an earlier stage in their life cycle. Some exchanges have taken concrete steps to encourage smaller firms to go public. We welcome the introduction of junior, secondary exchanges that aim to reduce barriers of entry for smaller firms. In particular, some eligibility criteria could be relaxed such as trading liquidity and reporting frequency, at least at the early stages of a newly listed company's life cycle. The more stringent conditions can be re-applied based on passage of time or growth in company size. Policy-makers may also consider tax incentives for such firms to go public, again for a limited time horizon and size criteria.

Index providers are playing an increasingly important role in the asset management industry. Companies are now more incentivised to become index members in the major indices as growth in passive funds have resulted in capital inflows. Index providers apply different eligibility rules including domicile, free float market capitalisation and tradability (liquidity) considerations. Smaller newly listed firms may not pass such inclusion tests. Index providers

could revisit their rules. For example, a provider could consider ladder-based free float market capitalisation bands, where companies can enter with lower initial weights at beginning of their life cycle, and their weights increase if they grow in size or they provide more free float to the market.

In summary, just as there is no single driver explaining the listing gap, there is no silver bullet for closing it. However, we believe that a number of steps can be taken by the various stakeholders enabling more listings to come to market. There are encouraging signs in that direction. We welcome more proactive dialogue and research by practitioners, academics and policy makers in addressing this important topic.