



CFA Institute

# CAPITAL FORMATION

The Evolving Role of Public and Private Markets





CFA Institute

# **CAPITAL FORMATION: THE EVOLVING ROLE OF PUBLIC AND PRIVATE MARKETS**

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# 1. Introduction

Public markets and public corporations are intrinsically linked. Not surprisingly, then, changes in the nature of public markets are causing changes in corporations, and vice versa. Public corporations have been experiencing significant changes since their definitive modern form—based on dispersed equity ownership and common shareholder rights—took hold in the early 20th century. The increased prominence of shareholder value maximization considerations in the late 20th century caused corporations to become more narrowly focused on maximizing profits. Today, investors and company management are apparently shifting their attention to nonfinancial considerations, including corporate and environmental sustainability. At the same time, pressure on public corporations is growing, due to increasing corporate disclosure requirements, listing standards, and governance practices. Entrepreneurs often complain that being a public corporation is increasingly or excessively onerous.

Circumstances differ today because the market power of entrepreneurs in accessing capital for their businesses has increased to the extent that avoiding public markets entirely has become feasible. A combination of newly deregulated or largely unregulated private-capital pools, such as Initial Coin Offerings (ICOs), with large amounts of deployable capital searching for higher yields in a near-zero interest rate environment, as well as new business models that require less capital to grow, provide entrepreneurs with a growing number of options.

These new business models, most often found in highly developed markets, characteristically have high intangible asset investment. This has important implications for public markets because companies based on intangible asset development

- tend to scale very rapidly;
- do not need much capital;
- prefer to deal with fewer but larger investors to retain ownership and control over easily copied intangible assets for as long as possible; and
- have been enabled in doing so by changes in the regulation of private markets and the global search for yield.

We see no obvious regulatory solution to making public markets more attractive to these new businesses, as the nature of these businesses seems intrinsically better suited to private



markets and/or acquisition by existing public firms. One can see this in action in the long list of acquisitions of tech startups by incumbent tech giants and existing corporations. Lowering public market disclosure standards would not resolve the problem, as doing so would erode investor protections and reduce the attractiveness of public companies, thus making it unlikely to result in additional public listings.

As fewer firms remain listed, and other firms become larger simply by acquiring new startups themselves, a smaller proportion of the corporate sector will be subject to social corporate transparency, limiting support for the corporate sector. Additionally, public equity markets and the stock market indices that represent them increasingly may be exposed to more mature businesses and less (directly) exposed to smaller, newer companies, and to sectors with higher growth potential. This situation poses challenges for expected returns and asset allocation.

This paper summarises the evolution of public markets and public corporations to date, and draws some conclusions about why this shift from public to private capital formation is taking place. It closes with policy recommendations designed to address or ameliorate the issues raised. These policy recommendations build on input received from workshops held around the globe with CFA Institute members and other market participants, as well as input from the Capital Formation Steering Group.

## 2. Public Markets

### 2.1. The Purpose of Public Corporations and Markets

Equity listed on public markets provides the bedrock for the valuation of many other growth assets, similar to the function sovereign debt assumes for corporate bonds. Public equity, held directly or indirectly, is typically a core investment allocation for retail investors, pension funds, and other institutional investors. Consequently, extensive focus, analysis, and regulation of the public equity markets is readily found. An established theory for why corporations exist is that they are able to improve the efficiency of a given production process by acting as a nexus of contracts (see, for example, Butler [1989]). But why would a corporation choose to become a public corporation via an IPO?

One possible answer is risk sharing. Jensen (1989) argues that the public corporation structure distributes the financial risk of new ventures over millions of individuals and institutions via the issuance of equity shares. In addition, by establishing secondary markets for the ownership rights conferred by these shares, investors can further customize their risk exposure. Rather than founders and entrepreneurs bearing the entirety of risk themselves, public markets allow risk to be borne by those with the most ability or desire to carry it; this process also lowers the cost of capital for corporations. At the same time, the process leaves the management of the firm to those with the most expertise.

Historically, the public investor base has traditionally been the largest and deepest pool of capital that corporations might access to fund new ventures (De Fontenay, 2017). Typically, accessing capital from public markets is also the lowest cost way of raising large amounts of financing. Further, public shares create an acquisition currency for companies (Brau & Fawcett, 2006) and an IPO can be a strategic, reputation-enhancing move.

Despite the public market benefits, researchers, regulators, and market participants have long been concerned that corporations are increasingly avoiding the public markets.

## 2.2. Descriptive Statistics on Public Market Trends

### 2.2.1. The Decline of Publicly Listed Firms

The statistics on public market participation by corporations over the last two decades make for grim reading. First, the headline number of firms on listed US equity markets has declined significantly. The United States had 14% fewer exchange-listed firms in 2012 than it did in 1975 (see **Figure 1**). From 1996—the peak year of listed firms—to 2012, the number of listed firms dropped by half (Ewens & Farre-Mensa, 2018). Relative to its size, the United States has an abnormally low number of listed firms (Doidge, Karolyi, & Stulz, 2017). In fact, if the United States had as many listed firms per capita as countries with similar market development characteristics, it would have had 9,538 listings in 2012 instead of 4,102 (Doidge, Karolyi, & Stulz, 2017).

The number of listed firms is determined by the net listing rate: new issues add to the number of listed firms while other firms exit the market through delisting. In the United States, the new listing rate is abnormally low (see **Figure 2**), while the delisting rate is abnormally high.

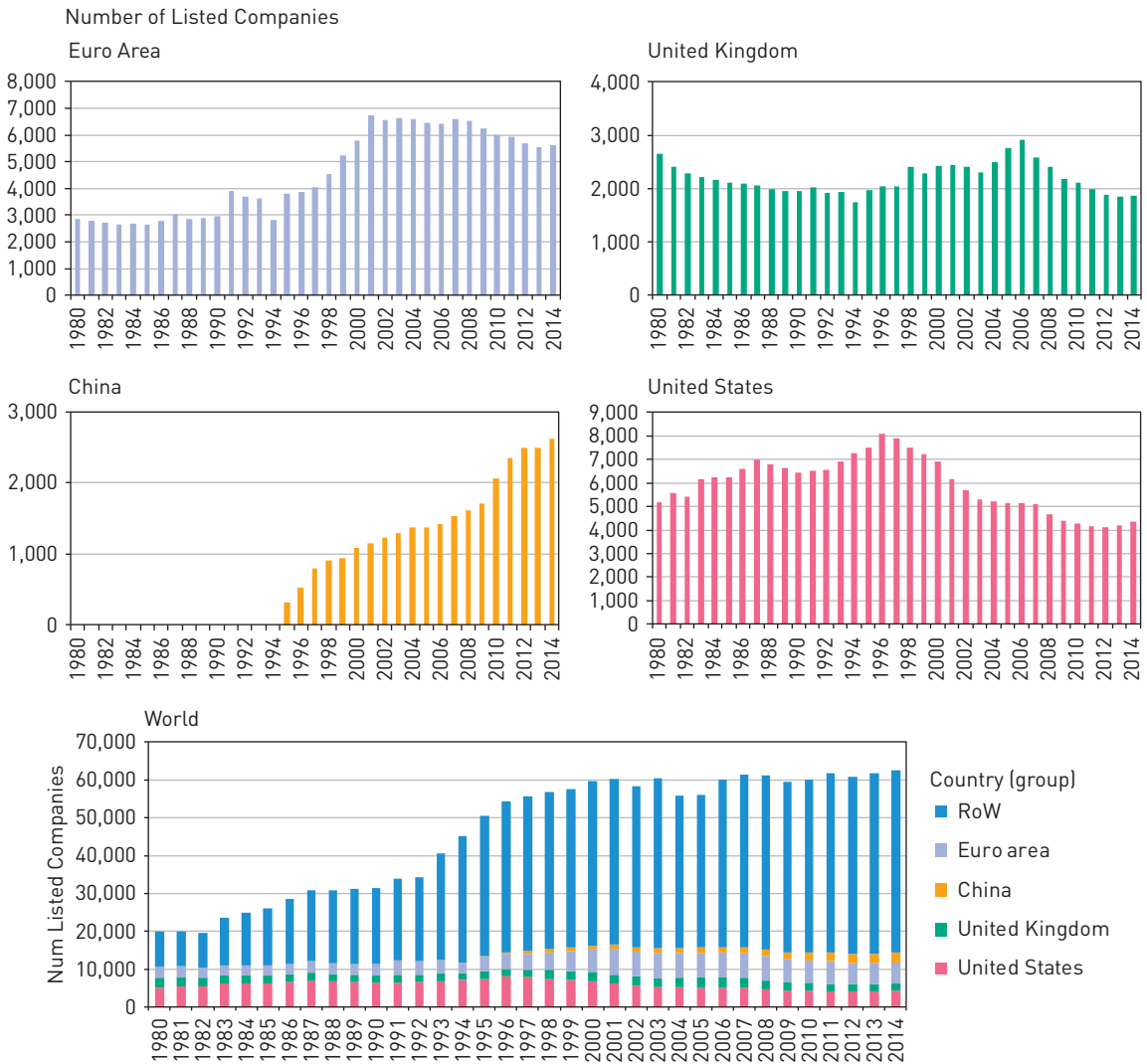
Looking at the listing rate, between 1980 and 2000, an average of 310 operating companies (i.e., not closed-end funds or similar) listed via an IPO every year, but between 2001 and 2011, this number averaged 99 per year (Ritter, 2013). Looking at the total for all new listings, not just operating companies, the average between 1995 and 2000 was 684 per year, but between 2009 and 2016 the average dropped to 179 per year (Doidge, Kahle, Karolyi, & Stulz, 2018). Not only has the number of new listings decreased, but the amount of capital raised by them is also lower. Capital raised through IPOs in the United States fell by 8% between 1990 and 2011 (Doidge, Karolyi, & Stulz, 2013).

To this point, we have focused the discussion on US-listed firms. Outside the United States, the number of listed firms globally does not appear to have experienced as dramatic a drop since the late 1990s, although the number has been stagnant since 2003 in developed countries, such as the United Kingdom and Euro Area<sup>1</sup> (see, for example, Figure 1 and Doidge, Karolyi, & Stulz [2017]). The notable exception to this trend of stagnant or declining numbers of public companies are Chinese<sup>2</sup>-listed companies, which have increased dramatically in number since 2000. Evidence of this can be seen in the rising (but volatile) number of Chinese IPOs (see Figure 2).

<sup>1</sup> Those countries using the euro as currency.

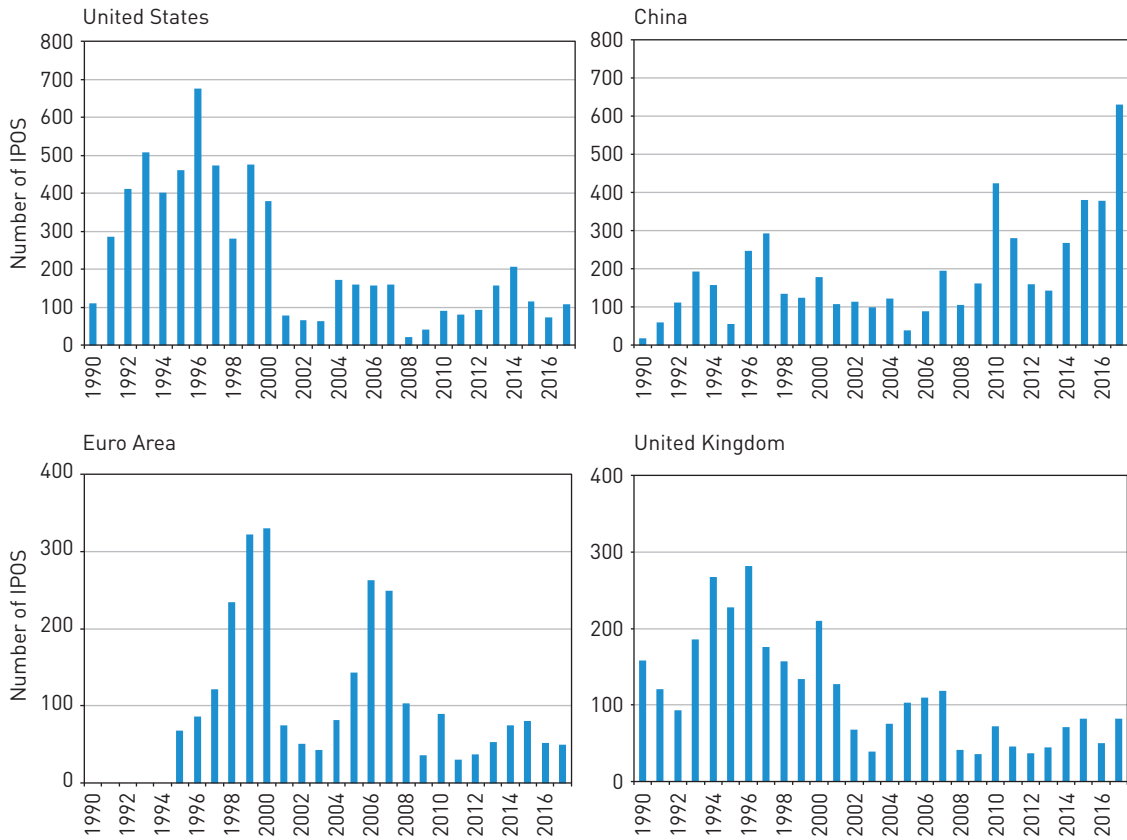
<sup>2</sup> Included in the number of Chinese-listed companies and IPOs are Macau SAR and Hong Kong SAR.

**FIGURE 1. NUMBER OF LISTED COMPANIES BY REGION**



Source: World Bank, CFA Institute analysis

**FIGURE 2. NUMBER OF IPOs BY REGION**



Source: PwC, Jay Ritter, Federation of European Securities Exchanges, London Stock Exchange Group, World Federation of Exchanges

Firms are also exiting the market abnormally quickly (Doidge, Kahle, Karolyi, & Stulz, 2018). A firm might typically delist for any of three primary reasons: it goes out of business, it voluntarily chooses to go private, or it is acquired by another firm. Doidge and colleagues (2017) found that the rate of public firm delistings between 1997 and 2012 was relatively high, with the decline in publicly listed firms attributable approximately evenly to high numbers of delistings and low numbers of new listings. They note that the high delisting rate appears to be explained by an unusually high rate of acquisitions of publicly

listed companies. Related to these observations is the stock buyback phenomenon—an excess of \$3.6 trillion was spent on repurchases over the amount raised from equity issuance between 1997 and 2015 (Doidge, Kahle, Karolyi, & Stulz, 2018).

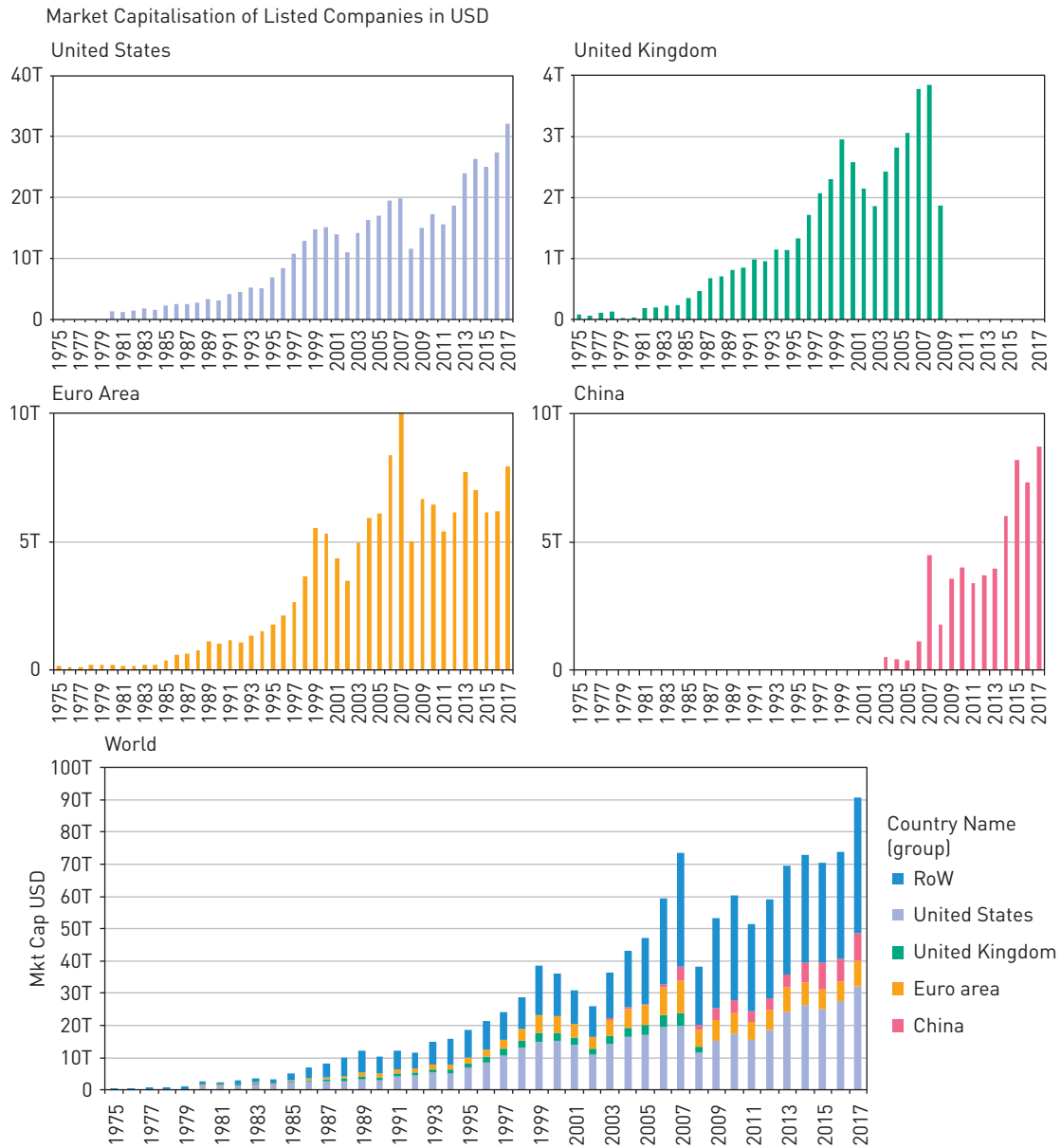
### 2.2.2. The Decline of Small Publicly Listed Firms

Small firms seem to have been particularly hard-hit by the trends described in the previous section. For example, small company IPOs have fallen from an average of 166 per year from 1980 to 2000 to an average of 29 per year from 2000 to 2011 (Ritter, 2013). The probability of listing for a firm, estimated by comparing its characteristics with previously listed similar firms, also peaked in 1996 and has since fallen (Doidge, Karolyi, & Stulz, 2017). Ewens and Farre-Mensa (2018) report that out of all startups founded pre-1997 that raised USD 150 million in their first seven years, 83% did so via an IPO. Out of all the startups founded post-1997 that raised USD 150 million in their first seven years, only 42% did so via IPO.

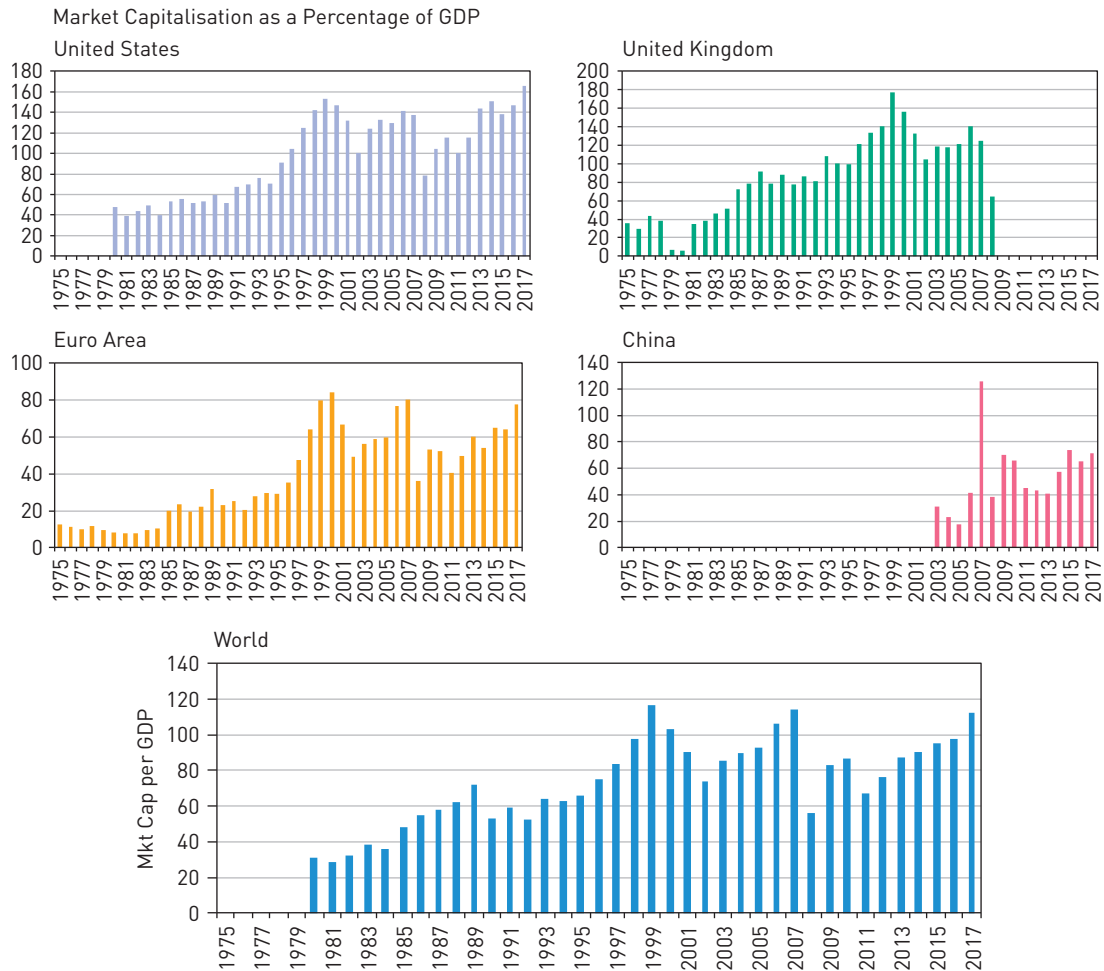
What is also interesting is that the number of small listed firms has declined across all industries (Stulz, 2018) and not just in certain sectors. Ritter (2013) argues a structural change has taken place in business over the last several decades that encourages scale and rewards large firms. Further, the small firms that do list are increasingly unprofitable. The percentage of small-firm IPOs that are unprofitable three years after the IPO has increased from 58% (between 1980 and 2000) to 73% (between 2001 and 2011) (Gao, Ritter, & Zhu, 2013). At the same time, starting in the early 1990s, the probability of being acquired within three years of going public has increased. It seems small firms are increasingly either going out of business or being bought out.

The trends described above are all observable in the population of large firms as well, although the impact has been milder (Gao, Ritter, & Zhu, 2013). Given the observed shift against small listed firms, it is not surprising that the firms that remain listed on the stock market are becoming larger, in part, by acquiring small listed firms. For example, the proportion of listed firms with assets of less than \$100 million (in 2015 dollars) was 61.5% in 1975, 43.9% in 1995, and as low as 22.6% in 2015 (Stulz, 2018). Similarly, the average and median market capitalizations, inflation adjusted, have shifted by a factor of 10 between 1975 and 2015, to an average of \$662 million in 1975, \$2 billion at the peak number of listings in 1996, and over \$6 billion now (Doidge, Kahle, Karolyi, & Stulz, 2018). **Figure 3** provides the aggregate rise in market capitalization despite the decrease in the number of listed companies. A presentation at Columbia Law School (2018) documents that the market value of companies listed in the United States, as a percentage of GDP, is approximately at its historical maximum of 150% (see **Figure 4**).

**FIGURE 3. MARKET CAPITALISATION OF LISTED COMPANIES (IN USD)**



Source: World Bank, CFA Institute analysis

**FIGURE 4. MARKET CAPITALISATION OF LISTED COMPANIES AS A PERCENTAGE OF GDP**

Source: World Bank, CFA Institute analysis

Large firms are also becoming older. In 1996, the average age of a listed firm was 12 years; in 2018, it is 20 years (Doidge, Kahle, Karolyi, & Stulz, 2018). Marderosian and colleagues (2018) show a similar effect. They document that the median time to IPO for US companies has risen from 3.1 years in 1996 to 7.7 years in 2016.



While firms are still privately held, they are also able to raise more capital, a median of USD 12.2 million raised prior to the IPO in 1996, compared to a median of USD 97.9 million in 2016.

## 2.3. Should We Be Concerned?

In 2018, to investigate these issues further, CFA Institute convened a series of global workshops, inviting CFA Institute members and market practitioners to gather and share opinions, experiences, and insights on the question of public and private capital formation. These workshops were held in Hong Kong SAR, Abu Dhabi, Dubai, London, New York, and Washington, D.C.

Many perspectives came to light during these workshops. Although some participants did not consider the decline in public listings a concern, arguing that plentiful capital could be raised in other types of markets, other attendees listed several possible downsides to capital formation outside public markets:

- Existing listed markets could become overexposed to older industries and underexposed to growth industries. If this trend becomes extreme, then listed equity will cease to provide an appropriate benchmark for determining risk premia across asset classes, possibly reducing price discovery.
- Average savers would be disadvantaged because only large funds and entities can efficiently invest in illiquid sectors such as private equity or infrastructure. Although savers would have access to such investment opportunities via pension schemes, typically, it is developed-market, large, defined benefit (DB) schemes that are most able to gain exposure to private, illiquid investments.
- The information asymmetry outside of public markets may cause investors to be locked into poorly performing assets over extended periods, without a liquid secondary market that could be used for price discovery.

Workshop participant concerns also varied by region:

- Australia has a well-developed superannuation system with pension funds that have significant alternatives exposure. However, several workshop participants commented on the low levels of public trust within Australia in this system, although outside of Australia, the system is often put forward as a leading example.

- In Hong Kong SAR, the success of local public markets is attributed, in large part, to the decline of the neighbouring market in Singapore as well as the belief that IPOs are a status symbol for entrepreneurs.
- In the Middle East, workshop participant comments focused on the developing nature of local markets and the idiosyncrasies of dealing with local regulations, a lack of local pension schemes, and the dominance of family offices and sovereign wealth funds.
- In the United Kingdom, a recurring issue is the way in which the excessive benchmarking of managers and the singular focus on fee reduction combine to make genuine active management difficult to justify for institutions when dealing with retail investors. Dovetailing with these issues is the requirement for daily liquidity in investor portfolios, which is seen as further limiting the freedom of managers to pursue innovative investment strategies such as private market investments.
- In the United States, many market participants feel that the rise in private market capital formation is a natural consequence of the evolution of public and private markets. Specifically, the increased burden of public disclosures, activist investors, and market short-termism, combined with the increased depth of private capital markets, makes those private capital markets a relatively more attractive place to raise funds.

Given this broad range of inputs, it is worth stepping back and looking first at the fundamentals of public markets and public corporations to see how we have arrived at a point where private markets are perceived to be a more desirable source of capital for firms than public markets.

# 3. Drivers of Trends in Public Markets

## 3.1. Corporate Evolution

### 3.1.1. *Conglomeration and Reversal*

The corporation as we have come to understand it developed in the early 20th century when significant amounts of capital were necessary to allow production to be scaled to the point at which profits could be maximized (Davis, 2016). Growth and scale were profit-maximizing objectives, which led to the well-documented conglomeration phenomenon of the 1950s and 1960s. By the 1970s, Davis (2016) argues, this process of increasing scale had reached its logical limits, which led to a wave of aggressive corporate restructurings in the 1980s. These restructurings were driven in part by the creation, during the latter half of the 20th century, of 401(k) or defined contribution (DC) employee retirement savings plans, which placed the risk burden on the employee rather than the corporation, as was the case for DB plans. DC plans increased the assets of the institutional investor base, who were better placed to focus corporations on maximizing profits via deconglomeration or outsourcing.

One oft-cited reason for the decline of the conglomerates in the 1980s are the agency problems created when the ownership of a firm is distinct from the management of the firm. Jensen (1989) argued that these agency issues would spell the demise of the public corporation form for all but a few growth industries. The 1980s-era restructurings sought to maximize value by deriving efficiencies from focusing each constituent part of a conglomerate on its core business, rather than have it be one part of a disparate corporation. Davis (2016) posits that this breed of relatively more focused firms required less capital individually and so the main motivation for going public deteriorated as a result. Jensen's (1989) complementary thesis says that more established firms could become more efficient through private equity ownership that more closely aligns the ownership and management of the firm. As will be seen in later sections, this prediction appears to have been exactly wrong—growth firms appear to prefer private equity ownership while established, stable firms are the ones that benefit most from public markets.

### 3.1.2. Economies of Scope

Although the benefits of conglomeration decreased and then reversed in the latter half of the 20th century, the change appears to have been caused by the inefficiencies of having highly diverse businesses under one corporate structure, rather than by the size of the firm itself. In fact, several authors have documented structural changes over the last several decades that favour large firms (see, for example, Ritter [2013]). Beginning in the early 1990s, small firms appear to be increasingly unprofitable and increasingly likely to be acquired within a few years of going public, mostly by other public companies, rather than by private companies or buyout firms (Gao, Ritter, & Zhu, 2013). Stulz (2018) notes that in 1975, 13% of firms earned losses rather than profits; in 2016, 37% of firms had losses. In 2015, the cumulative earnings of the 3,281 firms below the Top 200 were negative, that is, the top 200 firms outearned all other public firms combined (Kahle & Stulz, 2017).

The percentage of small firm IPOs that are still unprofitable three years after listing has risen from an average of 58% between 1980 and 2000 to an average of 73% between 2001 and 2011, with long run returns earned on small company IPOs also being poor, particularly since 2000 (Ritter, 2013). Similar results are found in Europe, and Ritter (2013) posits that these observations are evidence of a change in corporate economic incentives, which he terms the Economies of Scope hypothesis. Specifically, becoming big, *fast*, is more important than it once was for new firms, particularly in the technology industry. Ritter (2013) argues that the proximate causes for this change are the influence of globalization and improvements in communications technology. In this paradigm, organic growth is not a viable strategy for many startups, with small firms being more likely to grow either through being acquired in a trade sale or through merger and acquisition, rather than by going public.

Further, new knowledge-based business models tend to be “asset light,” meaning that they require less capital investment to grow. For example, Doidge and colleagues (2018) note that new startups can outsource product manufacturing to outside suppliers, rent large-scale computing power from cloud computing providers, and even rent turnkey back-office functions. However, due to these low capital hurdles, such startups are more susceptible to imitators, competitors, and disruptors. These characteristics make it less likely that these startups will access the public markets in the first place or remain listed for long if they do engage in an IPO.

In summary, small firms appear to be increasingly unprofitable on their own, are operating business models that do not require large amounts of capital to scale, and are susceptible to imitators or obsolescence. This combination of factors would appear to incentivize

rapid early stage growth, enabled by low capital expenditure requirements, followed by relatively early trade sales to bring products to market at scale in a timely manner.

The earnings of the large firms make such acquisition sprees possible. Average cash to assets has increased from 9.2% in 1975 to 21.6% in 2015 (Stulz, 2018). Cash holdings are particularly large among high R&D firms in the United States while the cash holdings of non-high R&D firms are similar in the United States to those of other countries. This suggests the high corporate cash phenomenon is driven by US firms and by high R&D firms in particular. Stulz (2018) argues that this is because the high level of intangible assets of such firms are poor collateral for borrowing, so a lower level of leverage is to be expected (i.e., high cash holdings in this instance).

The Economies of Scope hypothesis appears to be closely related to the observed rise in the importance of intangible assets. Haskel & Westlake (2018) note that an economy based on intangible assets will be very different from the one that is familiar from the 20th century because intangible assets have unique properties:

- They are not measured or valued satisfactorily by financial statements, national accounts, or indeed public markets.
- They are scalable in a way that tangible assets are not, with benefits that tend to spill over and interact with other intangible assets.

### **3.1.3. The Rise of Intangible Assets**

Knowledge-based firms tend to invest much more in intangible assets relative to fixed assets. For example, Stulz (2018) reports that average expenditures on R&D as a percentage of assets has increased, while capital expenditures have fallen. Similarly, Doidge and colleagues (2018) found that in 2016 capital expenditures were approximately half of R&D spending, while in 1975 capital expenditures were six times larger than R&D spending. They also report that fixed assets have declined from 34.4% of assets in 1975 to 19.6% of total assets in 2016. Falato, Kadyrzhanova, and Sim (2013) estimate that the ratio of intangible assets to net assets was 10% in 1970, but over 50% in 2010.

These changes in the balance between capital expenditures and R&D are driven by increased R&D expenditure as well as by reduced capital expenditures. Stulz (2018) argues that this has two effects: First, small young firms tend to stay off-exchange. Investments in intangibles, when expressed under US GAAP, do not create assets on balance sheets (Stulz, 2018) and make accounting earnings less relevant (Doidge, Kahle,

Karolyi, & Stulz, 2018)—this works against young firms because it makes it harder for them to convince investors of their economic value, in turn making them more likely to be acquired through a trade sale.

Stulz (2018) notes that a firm that has significant intangible assets because of R&D probably has commercial secrets it does not want to disclose even if that disclosure would help it achieve a more accurate valuation. In this scenario, retaining concentrated ownership, rather than having widely dispersed public stockholding, helps a firm to share R&D valuations more accurately with a few large investors, with less risk of rivals obtaining this information via mandated public disclosures. Consistent with this observation is the rise of large-firm incubators and accelerators—schemes that seek to promote innovation within incumbent firms by developing or acquiring new startup business ideas.

Second, the firms listed on exchanges become older and larger, invest less in fixed assets, and pay out more capital to shareholders.

## 3.2. Public Market Structure

In tandem with the evolution of public corporations over the 20th century, public markets on which corporate stocks trade have also not stood still. Public markets have five key participants: investors (both institutional and retail), investment banks, regulators and exchanges, and corporate issuers. Numerous changes in the market ecosystem appear to mediate against the health of IPOs, particularly with regard to small firm listings.

### 3.2.1. Regulation and the Market Ecosystem

For large parts of the 20th century, retail investors were the traditional primary capital providers (Solomon, 2017). Today, the trust of retail investors in public corporations and public markets is strained. A typical middle-aged investor will have lived through the dotcom bubble, the Enron/WorldCom scandals, the global financial crisis of 2008, and the controversy surrounding Quantitative Easing and the “Flash Boys” perception that the new generation of high-frequency trading markets are “rigged.”

At the same time, regulatory efforts such as decimalization and Regulation National Market System (Reg NMS) in the United States, and the Markets in Financial Instruments Directive (MiFID) in Europe, have acted to break up entrenched market power throughout the market and trading ecosystem. In turn, these changes have led to

dramatic falls in the cost of investing for individual investors, such as through the rise of discount execution-only online brokers. The changes have encouraged brokerage firms to move into selling asset allocation with management fees, rather than individual stock recommendations (Solomon, 2017). The extreme focus on costs and value for money has led to the rise of passive investment strategies that, for the most part, do not actively participate in capital formation (unless an IPO makes it into a major index), and research coverage of small companies has declined (possibly complicated by research-payment unbundling efforts under MiFID II).

The result is the relative decline of individual retail investors as a significant source of capital, replaced with institutionalised intermediaries acting on behalf of retail investors. Although retail investor participation in IPOs was always relatively small due to the way in which allocations typically are negotiated during the underwriting process, what is significant for small firm IPOs is the reduced participation of small funds.

### ***3.2.1.1. Regulatory Expenses and Competition***

Institutional investors, particularly active managers, are much bigger than they once were. This is partly because many retail investors are now invested in funds via the global shift from DB to DC retirement plans. Competition and regulator attention on value for money in the retirement savings investment industry is putting ever-more pressure on managers to exceed benchmarks, which is difficult, or cut fees, which is easier. Size and scale are an advantage in dealing with regulatory and other overhead expenses. Like any small firm, small investment funds have relatively higher overheads. Solomon (2017) argues that in the United States, under the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010), potential investors in small IPOs face pressure to consolidate or convert to family offices.

The large size of many active managers makes small cap investing unattractive, as numerous winners must be picked in order to deploy a meaningful amount of committed capital (Solomon, 2017). In a submission to the SEC, Solomon (2017) illustrate this challenge another way by noting that a fund trying to achieve a target position of a 1% holding in a \$750 million market cap company (assuming that company has an average trading volume of \$0.5 million per day—typical for a firm of this size) would take 100 days to do so using typical trading strategies designed to minimise price impact. The amount of time and resources necessary to establish a position in such a firm makes it hard for small issuers to attract institutional interest. Some exceptions to this exist, in particularly high-risk/high-return sectors such as biotech, where successful products can result in outsized returns.

### 3.2.1.2. *The Market as a Utility*

While investment funds have been evolving over time, the markets themselves are almost unrecognizable when compared to those in existence just two decades ago. Local specialists and monopolistic centralized exchanges have given way to fragmented markets. Competition and communications technology means markets today are entirely electronic, and extremely fast paced and efficient with historically low spreads. Algorithms rather than humans handle market making. Additionally, exchanges increasingly cater to international companies and compete in a globalized marketplace for listings.

Algorithmic market making has made markets in the largest stocks extraordinarily deep and liquid, although the same is not true for stocks outside the topmost tier. For example, according to data from the European Securities and Markets Authority (2014), the proportion of European stocks with an average daily turnover below €100,000 has increased from 46% in 2008 to 61% in 2013—that is, by more than 4,300 stocks. In contrast, just 123 stocks have an average daily turnover of more than €50 million, yet the stocks account for over half of the total equities trading volume in the European Union.

Solomon (2017) finds that this effect is compounded by the retreat of many investment banks from market-making activities and capital raising to focus on merger and acquisition (M&A) advisory services. Large investment banks want to deal with large issuers, where they can sell additional products such as debt financing and M&A advisory. The long-term value of one-time small issuer clients is low.

Ritter (2013) argues that small company IPO volume has suffered as a result of this decline in bankable spreads for market makers and reduced the economic incentive for equity sales people to market individual stocks. Solomon (2017) agrees that spreads have declined so much that market makers have little incentive to trade small cap stocks. Solomon notes that 61% of listed firms below \$100 million in market cap do not have any research coverage, a situation unlikely to improve given the global move toward hard-dollar research payments, which will prevent trading commissions from subsidizing small cap research.

Ritter (2013) posits that company valuations would be higher with higher analyst coverage, lowering the cost of equity capital on public markets. The coverage and number of sell-side analysts peaked in 2002 and has subsequently declined, being reasonably consistent with the observed trend. Ritter (2013) suggests analyst coverage has a 5% valuation effect and estimates improving analyst coverage of small stocks could result in an additional 18 IPOs per year.



## 3.3. Regulatory Costs for Issuers

Often, regulatory burdens are advanced as the reason for a lack of interest from entrepreneurs in having their companies becoming public firms. In the United States, the average IPO listing has fees of around 7% of company value; in Europe, these fees average 4%. Broadly agreeing with these numbers, Ritter (2013) shows that around 5% of the post-IPO market value of a firm can be expected to be lost in the process of going public. The recurring costs of being a public firm are also an issue. Solomon (2017) itemizes the typical costs of being a public company and shows that a firm with a market capitalization of \$480 million has public company costs of around \$4.4 million, or approximately 1% of market capitalization, per year.

### 3.3.1. Regulatory Overreach?

Of the wide range of public market regulations, the Sarbanes-Oxley Act of 2002 and Regulation Fair Disclosure (Reg FD; US Securities and Exchange Commission, 2000) receive particular attention in the United States. One of the main criticisms of Sarbanes-Oxley is that it is particularly burdensome for small firms, which appears consistent with the empirical evidence showing significant declines in small firm IPOs.

However, the empirical evidence does not seem to support a causal link. Gao, Ritter, and Zhu (2013) suggest it is not clear that Sarbanes-Oxley-related legal costs are significantly higher than was the case during the peak of public listings. They show that the percentage of small-firm IPOs unprofitable three years after the IPO has increased from 58% to 73%, while the same is not the case for large-firm IPOs. However, this pattern of low profitability exists even if Sarbanes-Oxley-related expenses are deleted from financial statements (Ritter, 2013).

Second, in the United States, the data suggest delistings have mainly been caused by mergers, rather than by firms voluntarily delisting to go private (Stulz, 2018) to avoid Sarbanes-Oxley. Doidge and colleagues (2018) note that of the 8,620 delists since the listing peak in 1996, 61.2% were due to mergers, 35.5% were due to performance, and only 3.3% were voluntary.

This evidence seems to mitigate against the contention that regulation such as Sarbanes-Oxley is the driver of the decline in public corporations, particularly since the increase in delists began before Sarbanes-Oxley came into being, and has continued after Sarbanes-Oxley was relaxed for smaller firms in 2007 (Gao, Ritter, & Zhu, 2013). Similarly, the Jumpstart our Business Startups (JOBS) Act of 2012 has not appeared to have a positive

impact on listings. Ritter (2013) explains the inability of regulatory rollback to increase listings is because the decrease in listings is not due to regulatory burdens. Instead, he argues that the observed decrease in small companies going public is because it is harder to be a small and profitable firm today, lowering the probability of becoming publicly listed for this subset of businesses.

### 3.3.2. Private Market Deregulation

What may be more important than changes in public market regulation is the deregulation that has been occurring in private markets. In particular, De Fontenay (2017) notes that the National Securities Markets Improvement Act made it easier for private firms to sell securities to qualified purchasers. First, these sales were exempt from “blue sky” laws that attempted to limit the sale of those securities that are based on nothing more than “blue sky” thinking and empty business plans. De Fontenay found that even more important was the increase in the maximum number of investors that could invest in an unregistered fund. This enabled venture capital (VC) and private equity (PE) funds to raise larger amounts of capital and increased the scope for these funds to invest in late-stage, more capital-intensive business startups, in turn allowing those startups to stay private longer.

According to De Fontenay (2017), this change may be the key one in the entire public markets decline narrative. She argues that securities law was initially written as an implicit trade-off between the burdens of public disclosure and the benefits of the exclusive right to raise capital from the general public—the largest and lowest-cost source of capital. However, with the deregulation of private markets, this bargain has been undermined—public companies are still required to disclose information to the public, but now significant amounts of capital can be invested into private companies, lowering their cost of capital in the process.

## 3.4. Summary: The Eclipse of the Public Corporation

Writing in the late 1980s, Jensen (1989) observed that public corporations have a central weakness—the so-called agency conflict between the owners of the corporation and the managers, over the use of corporate resources. Jensen predicted the rise of new corporations, ones that would use public and private debt as the main source of capital and that would have institutions and entrepreneurs as their majority owners, rather than households. The advantage of this new breed of organizations would be the ability to diversify

the risk for owners, entrepreneurs, and investors—as in the case of public corporations—but crucially to also resolve the agency problem by having fewer, larger, and more professionally involved investors.

Traditionally, public corporation agency issues were considered to be most acute when excess cash was not distributed back to shareholders but wasted. It was posited that private corporations help to ameliorate these issues. However, it appears that the concept of shareholder value maximization has become so entrenched in management theory that share buybacks are now at historic highs while investment in new growth opportunities happens in mostly private markets, neatly reversing one of Jensen's (1989) predictions.

An example of the success of large firms on public markets is given by Doidge and colleagues (2018), who note that the top five public firms in 2016 had a market capitalization of \$2.3 trillion, almost five times higher than in 1975 (\$500 billion when adjusted for inflation). They argue that a public market listing works for the largest public firms, and that it is only the smaller firms that no longer find public markets attractive.

Ritter (2013) does not think that this implies that the IPO market is broken. His Economies of Scope hypothesis predicts that the modern economy is fundamentally unsuited to small, public firms. The issue is not that entrepreneurs are wary of needing to disclose too much or too often, but that the nature of modern business models and their dependence on intangible assets, means that *any* amount of disclosure may be value destroying. As a result, neither regulatory rollback nor a bull market should be expected to significantly boost the IPO markets.

This does not mean that capital formation has ceased, however. In the past, entrepreneurs had little choice but to access public markets to grow their businesses, but now the market power of entrepreneurs is high, given relatively easy access to private market financing. As Ewens and Farre-Mensa (2018) note, private companies can now achieve capital raising previously only available to their public peers.

This market power is seen not only in the lack of enthusiasm to pursue IPOs, but also in the increasing prevalence of dual-class and non-voting share structures among firms that do go public. Public markets are currently viewed with some scepticism because of the perception of short-termism and excessive activist investing. Brau and Fawcett (2006) note that the main reason cited by CFOs for remaining private is to preserve decision-making control and ownership. Entrepreneurs would prefer not to dilute their ability to run their firms as they wish, and alternative private market financing options enable them to act on this wish. Doidge and colleagues (2018) predict further declines for US public markets because the importance of intangible assets will likely only increase.

## 4. Private Markets

The private markets space is varied and can be hard to define in its entirety. The most well-known of the private markets is private equity, typically segmented into buyout funds that seek to take over and restructure existing businesses, and venture capital funds, which invest in startups developing new products. However, other alternative markets are available, such as private credit, real estate investments, infrastructure investment, and funding of natural resources. In recent years, the fintech space has given rise to further ways of raising capital—peer-to-peer lending and ICOs being the most widely known.

**Figure 5** gives a sense of the relative sizes of these asset classes in different regions. Private equity funds command the bulk of assets under management, with real estate and private debt funds vying for second place. Notably, all asset classes have experienced barely interrupted growth since 2000 (the beginning of our data sample). Although ICOs have taken a large amount of mind share among media and investors, in aggregate they are still a tiny proportion of global capital formation. According to Coinschedule.com (2018), the number of ICOs has risen from 2 in 2013 to 943 in 2018, with the amount of money raised rising from USD 0.6 million in 2013 to almost USD 22 billion in 2018.<sup>3</sup>

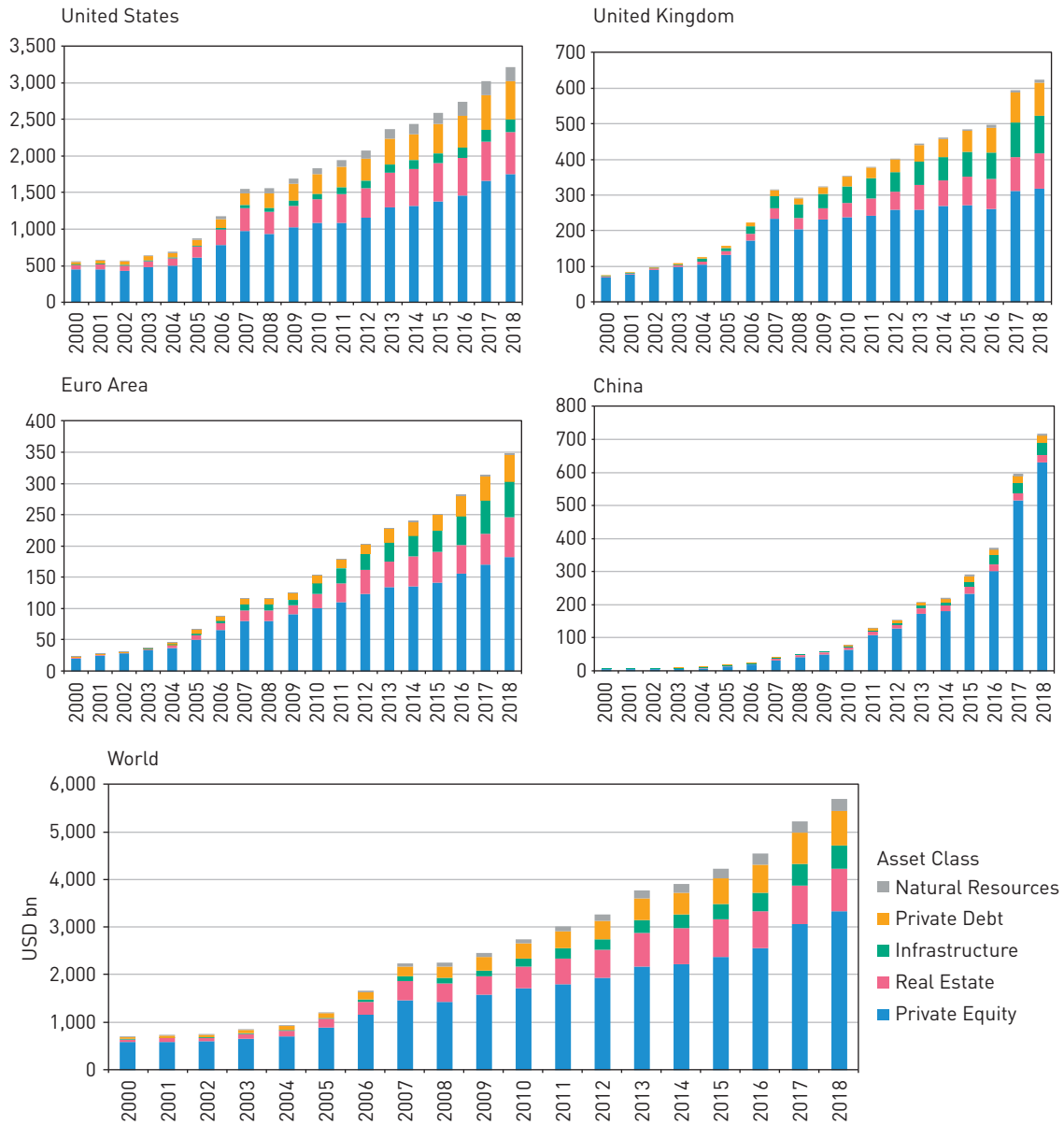
One commonly referenced driver underlying the growth of private markets is the long-running economic regime of ultra-low interest rates and Quantitative Easing (QE) (see, for example, AVIVA Investors [2018]). QE is also interacting with the size of the global Defined Benefit liability gap, which remains large (see, for example, McKinsey & Company [2018]). Having experienced significant losses during the 2008 financial crisis, many pension plans were, in hindsight, too risk averse in their allocations and did not fully take advantage of the subsequent decade-long recovery in equities. At the same time, McKinsey & Company (2018) note that actuarial assumptions about longevity are increasing, placing pressure on DB plans to fund their liabilities. As a result, these pension funds, along with other institutional investors, are searching for higher expected returns outside of the usual publicly traded markets.

Private markets typically have higher expected returns because of the illiquidity premium involved in owning these securities, as well as the structural advantages institutional investors can take advantage of, which arise from financing efficiencies, the ability to time their exit, as well as operational value creation.

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<sup>3</sup> All figures are accurate as of the time of publication.

**FIGURE 5. ASSETS UNDER MANAGEMENT BY REGION AND ASSET CLASS (IN USD BN)**



Source: Preqin, CFA Institute analysis

Note: Private equity comprises both buyout and venture capital funds.

Investors with long-dated liabilities, such as pension funds, are happy to invest in illiquid assets and earn a premium, as they do not need these assets to be instantly available. To provide a sense of the role private markets play in the allocations of institutional investors, AVIVA Investors (2018) notes that portfolio allocations to alternatives, such as private equity, are in the mid-single digit percentages for insurance companies, with the leading investments being in long real estate and private corporate debt. Among pension funds, the allocations are a few percentage points lower than for insurers.

In addition to the search for yield, other second-order factors, such as the desire to diversify exposure to public markets, can be used to explain the attractiveness of private market investments. Some of the more interesting motivations are listed below.

- Public markets are often perceived to be short-termist in their outlook, causing corporate managers to focus on meeting quarterly earnings targets rather than working on creating long-term value. Private markets are perceived to be more long term in their thinking and in their structural characteristics by comparison.
- Some argue that Mark-to-market financial reporting requirements for public firms cause unnecessary volatility in the portfolio values of institutional investors. Some institutional investors prefer private markets because the valuation of their investments is independent of what they perceive to be the fear and mood swings that cause excessive volatility on public markets.
- For large institutional investors, the oversight and transparency they can obtain on their investments may be even greater than that available on public markets. By being one of a relatively few large investors in a firm, an institution is able to wield more influence than it could as a public shareholder. This influence can also manifest itself in investments that have strong covenants and security relative to those afforded public stockholders.
- Alternative investments, such as infrastructure debt and equity, and real estate, may have reduced capital charges under the post-2008 financial crisis prudential regulations.



## 4.1. Private Equity

### 4.1.1. Assets under Management

Private equity markets are commonly divided into buyout funds, venture capital funds, growth funds, and others. These funds have had a significant expansion in assets under management in recent years. In fact, private equity funds have experienced nine consecutive years of growth and have total assets under management (AUM) of around USD 3 trillion (Preqin, 2018). **Figure 6** illustrates the breakdown of private equity funds AUM by region and by private equity fund type. In general, buyout funds command the bulk of the AUM, followed at a distance by venture capital funds.

Public pension funds account for 35% (\$627 billion) of aggregate capital invested in private equity.

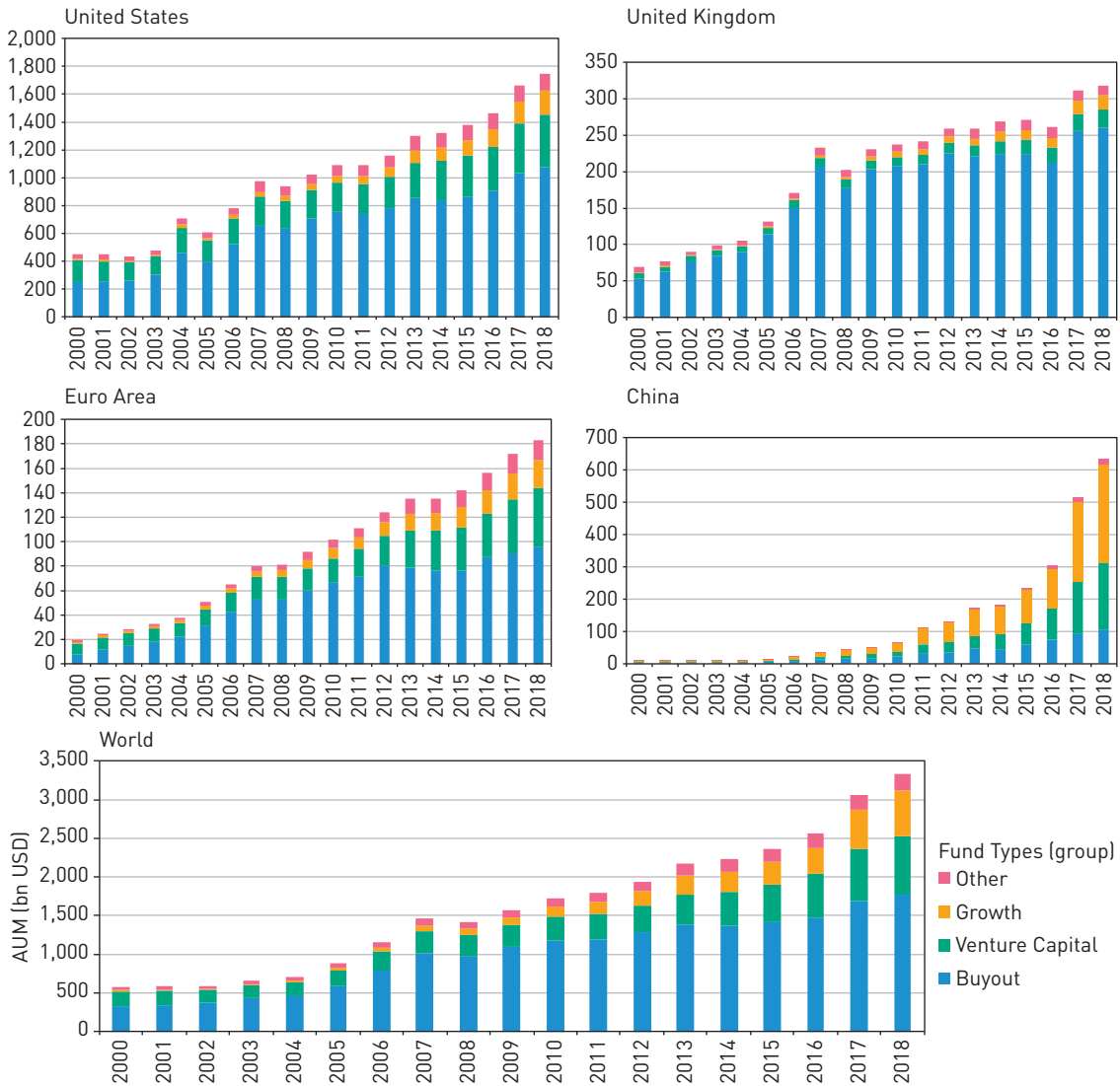
### 4.1.2. Performance of Private Equity Funds

The broad patterns observed in the research on private market fund performance differ between buyout and venture capital funds. Venture capital funds of 1990s vintage did well, those of 2000s vintage have generally underperformed, while a rebound in outperformance can be observed in the most recent vintages (Brown, Harris, Jenkinson, Kaplan, & Robinson, 2015). **Figure 7** shows that VC funds (orange) in the United States, Europe, and the world as a whole had low net IRRs in the early 2000s before slowly converging to the performance of buyout funds by the late 2000s.

US buyout funds have outperformed public equities in almost all vintage years before 2006, usually by about 3% to 4% annually (Harris, Jenkinson, & Kaplan, 2014). Between 2006 and 2014, their performance has been roughly equal to public markets in the United States, although it should be noted that this is during a long-running US bull market in equities.

However, **Figure 8** suggests that compared to the relevant private equity fund benchmark, rather than public equities as a whole, US buyout funds have only had a brief period of notable outperformance (2007–2009 and 2012–2013). European buyout funds did particularly well in the early 2000s before converging toward their benchmarks beginning in 2006. In Asia, buyout funds underperformed their benchmarks in the early 2000s, with only brief periods of outperformance in the early 2010s.

**FIGURE 6. PRIVATE EQUITY AUM BY REGION AND FUND TYPE (IN USD BN)**



Source: Preqin, CFA Institute analysis

Note: The “World” region aggregates data from all countries, including the United States, the United Kingdom, Euro Area, and China.



**FIGURE 7. PRIVATE EQUITY MEDIAN NET IRR (%) BY FUND TYPE AND REGIONAL FOCUS**



Source: Preqin, CFA Institute analysis

The data in Figure 7 and Figure 8 suggest that it is by no means certain that a private equity fund, be it a buyout or a venture capital fund, will beat its benchmark in any given year. Further, since the statistics in Figure 8 are averages, they are further skewed by a few

**FIGURE 8. PRIVATE EQUITY AVERAGE NET IRR (%) RELATIVE TO FUND BENCHMARK, BY FUND TYPE AND REGIONAL FOCUS**



Source: Preqin, CFA Institute analysis

top performers. Despite this reality, it should be noted that many mutual funds underperform their benchmarks after fees, which may make PE performance that is in line with benchmarks relatively attractive.

In terms of the importance of picking managers, the variability of buyout fund returns is lower compared to VC fund returns (see Harris, Jenkinson, and Kaplan [2014]). For example, even relatively low-performing third-quartile buyout fund returns are nevertheless comparable to those that can be expected from public markets. On the other hand, venture capital fund returns exhibit a high concentration of performance in a relatively few winners—having top-quartile fund exposure is critical.

McKinsey and Company (2018) find that manager performance persistency appears to have weakened since the 1990s. Successor fund follow-on performance is heading toward 25% (i.e., the probability that the manager’s follow-on fund stays in the same quartile as the original fund is 25%, or about random chance). Similarly, Prequin (2018) found relatively weak persistence: 66% of top-quartile funds were followed with above-median follow-on funds, while only 34% of successor funds remained top-quartile performers.

### **4.1.3. Dry Powder Problem and Ability to Absorb Capital**

Research on venture capital funds suggests that their performance is linked to cash flows into the fund, that is, the performance of a fund is lower if the fund starts when there are large inflows of capital to the sector. This finding appears intuitive as there is likely to be an excess of capital seeking to invest in a limited number of value-creating startup businesses, which would likely result in over-paying for quality investments, or investing in low-quality value-destroying startups (Harris, Jenkinson, and Kaplan, 2014). This is known as the “dry powder” problem—the phenomenon of general partners being able to raise large amounts of financing but having insufficient investments in which to deploy their capital (McKinsey & Company, 2018).

This pattern of returns exists for both buyout and VC funds but may be more prominent in VC funds because VC has less ability to scale due to a shortage of genuine business model innovation. Further, the reduced need of modern startup business models for capital to scale their operations makes it even more difficult to deploy significant amounts of scale without investing in low-quality ideas or overpaying. **Figure 9** shows that dry powder has been increasing worldwide, in both buyout and VC fund space, since reaching a low in 2012.

Although some money may be sitting on the sidelines, investors may also be creating a “bubble” of private valuations by competing to outbid each other to participate in the relatively few quality firms and projects. McKinsey and Company (2018) observe that private market deals are growing in size as investors may seek to deploy as much capital as possible when a quality opportunity is found.

**FIGURE 9. PRIVATE EQUITY DRY POWDER BY REGION AND FUND TYPE (IN USD BN)**



Source: Preqin, CFA Institute analysis

## 4.2. The Rise of Private Credit

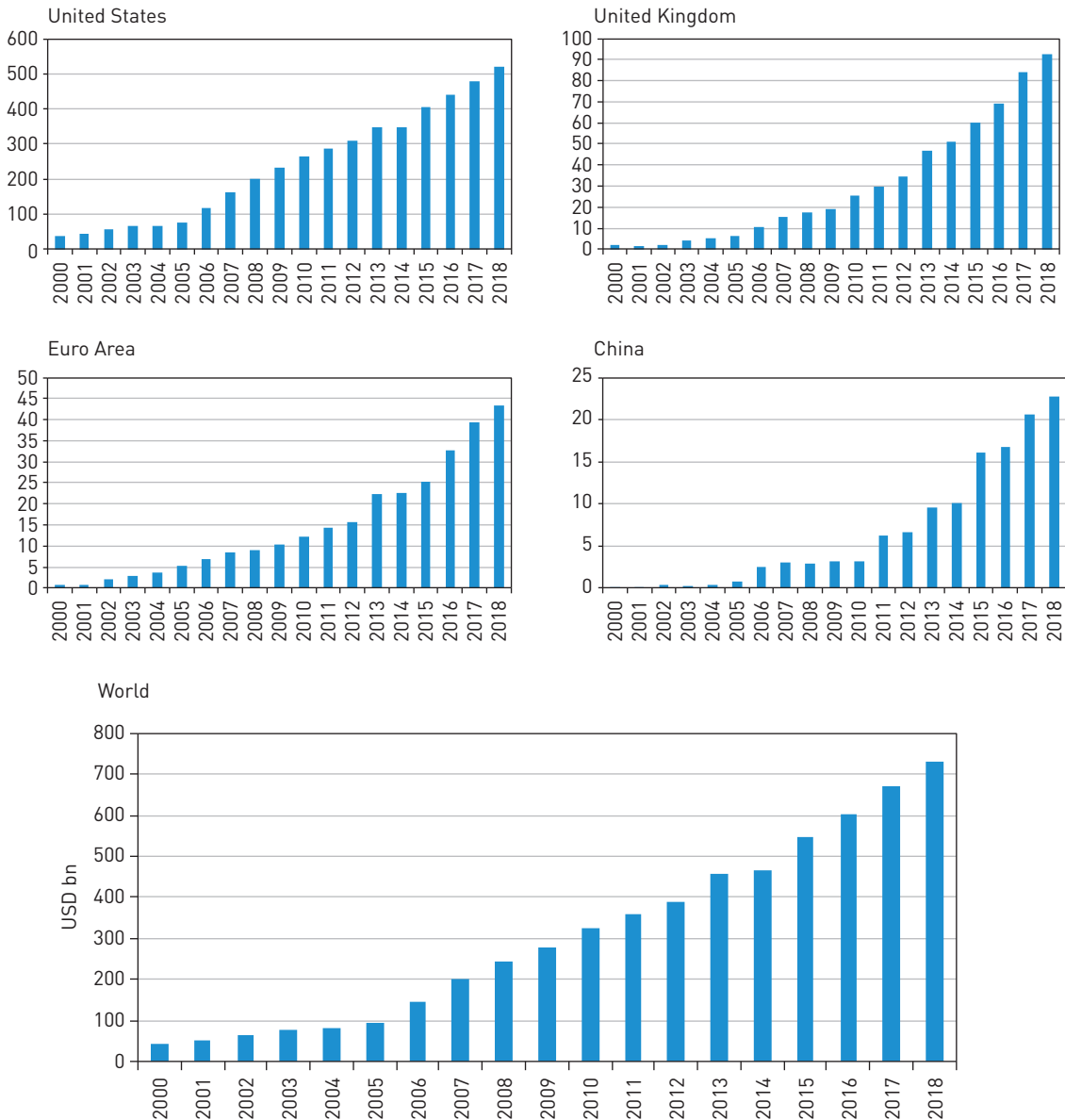
A notable development in recent years is the significant increase in the popularity of private credit markets. Private credit investments have increased dramatically as traditional bank lending has been constrained after the credit crisis. For example, it is argued that post-financial crisis prudential regulations may cause banks to reduce their balance sheet holdings of debt issued by small to medium enterprises, which could open opportunities for other institutional investors. The Volcker rule<sup>4</sup> limited bank exposure to illiquid investments, which in turn, limited loans to private equity funds, leading to smaller corporate lending operations.

Preqin (2018) notes that private credit AUM has grown 16% annually since 2006, which Munday and colleagues (2018) add is 2.5 times faster than private equity buyout funds. **Figure 10** shows that this rise in private credit has been occurring in all regions, with growth being particularly noticeable since 2006.

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<sup>4</sup> Section 619 of the Dodd-Frank Wall Street Reform Act of 2010

**FIGURE 10. PRIVATE DEBT AUM BY REGION (IN USD BN)**



Source: Preqin, CFA Institute analysis

## 5. Policy Recommendations

Both cyclical and structural reasons underlie the observed shift in capital formation toward private markets. The relative ease of raising private capital, both debt and equity, in the era of low interest rates, helps to facilitate leveraged acquisitions of existing public companies and allows private companies to fund expansion outside public markets for longer. Some commentators (e.g., Chanticleer [2018]) have even suggested that very large pools of institutional money (e.g., superannuation funds in Australia) may find it attractive to purchase outright, companies such as BHP (the largest stock on the Australian market) or even whole swathes of the public market, having run out of viable private market deals.

However, consideration of any policy response must separate the cyclical from the structural. Although private funds currently face supportive financing conditions, it remains to be seen whether this (excess) demand will inflate private company valuations to an unsustainable level. If so, we could see expected returns fall, making public markets relatively more attractive again.

Doidge and colleagues (2018) note that if the number of firms listed on public exchanges falls further, the transparency of public markets will apply to fewer and fewer firms. More and more economic activity will be opaque to society, which will likely limit support for the corporate sector in the long run. However, it is likely that more public market-like transparency and disclosure will come to private markets, both for regulatory as well as market pressure reasons. Already, very large private firms have a level of publicity and disclosure not that far removed from public companies.

There are benefits to both public and private capital markets, and so the ability to allocate to both is important. There is no obvious regulatory solution to the fact that intangible assets are better financed through private sources. However, currently managers face certain structural impediments to investing in private markets, including fee caps in pension structures and daily liquidity (switching) requirements in DC schemes. To maintain support for the corporate and market sector, improving the transparency of private markets and society's access to them is necessary. We propose three policy responses.

### 5.1. Avoid a Race to the Bottom

First, regulators should avoid lowering disclosure standards and investor protections in a bid to encourage IPOs. As discussed in previous sections, the shift toward private capital

raising is likely *not* being caused by such requirements; factors that are more fundamental are the likely cause, including the cyclical abundance of private capital. Further, little evidence exists that retail investors get to participate in IPOs or would be better off investing in new issues. The recent trend toward dual-class share issues should be resisted, as argued by CFA Institute on several occasions<sup>5</sup>. Regulators need to caution against commercial interests proposing reduced public market regulation under the guise of stimulating IPO activity. This policy position is consistent with our advocacy against the abolition of quarterly reporting in the US<sup>6</sup>.

## 5.2. Look Out for Systemic Implications

As is typical of any market that has experienced long-term growth, private market demand is putting upward pressure on deal valuations. The rise in dry powder, along with reported and perceived reductions in illiquidity premiums, suggests a market that may be running hot, if not overheating. Although the institutional investor base has long-term liabilities and can therefore afford a longer-term outlook on valuations, it remains the case that these assets are highly illiquid and even long-term investors have some short-term cash flow obligations that can be prone to disruption should private markets enter a correction. We propose that bodies such as the Financial Stability Oversight Council in the United States take precautionary action to examine the systemic implications of growing private market exposure among institutional investors such as pension funds. Although some commentators argue that no systemic implications exist because private institutions would, in the event of a downturn, simply absorb private losses, this may not tell the full story if it transpires that sovereign wealth funds, government plan sponsors, pension systems, and retirees are heavily involved in the burden sharing.

## 5.3. Improve DC Fund Access to Private Markets

With pension systems around the world nearing the end of a shift from DB to DC forms, individual savers are being forced to take responsibility for their investment returns and retirement outcomes. In this context, having increasingly large sections of capital markets being out-of-bounds for pension savers is unlikely to be politically viable or even desirable in the long term. Capital markets need broad-based political support to thrive and stories of private market unicorns undermine this support. Equally, the realities of investment in

<sup>5</sup> <https://www.cfainstitute.org/en/advocacy/issues/dual-class-shares>

<sup>6</sup> <https://www.cfainstitute.org/en/advocacy/issues/impact-quarterly-reporting>





private markets—asymmetric information, illiquidity, and long holding periods—need to be acknowledged in any policy response.

We believe that the information asymmetry and higher risk exposure in private markets means public access to private market investments should occur through a professional intermediary layer that would be able to:

- use its size and relationships to gain access to private market opportunities that are closed off to smaller institutions; and
- use its size and resources to be best informed about those private investments and subsequently exercise more oversight.

Increasingly, “Collective DC” funds are being discussed by policymakers<sup>7</sup>. One challenge that is often raised by fund managers to improving the access of investors to private market companies via their pension funds is the mandated requirement for pension funds to provide daily liquidity to the plan holders (see, for example, Partners Group [2017]).

Daily liquidity is typically justified on the grounds that plan holders may contribute and withdraw or transfer funds to and from accounts at any time, so they must always have up-to-date valuations of their assets. This daily liquidity cannot be reliably provided on private market investments, which are, by definition, illiquid.

In Australia, where pension funds have significant stakes in private market investments, this challenge is reduced because of the very significant and reliable capital inflows caused by mandatory superannuation contributions by employees. However, this approach is unlikely to work in all jurisdictions, so an alternative approach would likely need to be considered. For example, the daily liquidity requirement could be relaxed or removed on certain portions, particularly the private market funds, of investors’ pension savings. This would have the additional benefit of reinforcing to investors the relatively riskier (in part due to illiquidity) nature of their private market investments and their expected higher returns (“patient capital”).

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<sup>7</sup> <https://www.ftadviser.com/pensions/2018/10/29/government-to-change-defined-contribution-rules/>

## 6. Summary

Public and private markets continue to evolve along with the corporations that use them to finance their growth. The recent rise in private markets seems to be driven by secular factors, such as the increased importance of intangible assets, as well as by cyclical factors, such as the abundance of private capital and low interest rates around the world. Current market conditions appear to favour private markets, with entrepreneurs being able to fund expansion while minimizing equity sharing with outside investors, particularly retail-scale investors or small institutions.

There is no obvious regulatory solution to making public markets more attractive without damaging investor protections and market integrity. Equally important, private markets are an important part of the financial ecosystem and stakeholders should be careful of policies that harm private markets in favour of public markets. What may be a more relevant concern is the quality of the investment options available to the public within each type of market. With the global move toward self-funded retirement, it is not credible to allow an entire generation of retail investors to be left with only diversified public market exposure to generate retirement returns, while institutional investors crowd into innovative business models that offer potentially higher returns. Further, it is unclear whether this momentum into private markets will have any systemic consequences.

We believe the correct set of policy responses is not to weaken the integrity of public markets in a likely vain attempt to attract more activity, but instead to improve responsibly the access of smaller investors to private market investments, via professional intermediaries such as collective DC vehicles. The policy priority should be to ensure social support for the corporate sector by better integrating the private markets into the existing “social compact” by, for example:

- encouraging better disclosure and transparency standards in the private markets (while acknowledging that they can never be as transparent as public markets);
- improving access to private market investments by pension savers, through professional intermediaries;
- keeping strict investor protections and limits in place because the evidence suggests that while private market returns are higher than public returns, the numbers are dependent on the period being considered and typically represent only the best-performing funds, which do not demonstrate persistence in performance; and

- viewing access to private markets for pension savers as a way to create broad-based public support for private markets, rather than as a way to necessarily increase returns.

Finally, regulators should monitor the rise of private markets for evidence of growing systemic risks.

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