What are stock exchanges for and why should we care?

THE PURPOSE OF FINANCE
IN ASSOCIATION WITH PIC

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About Pension Insurance Corporation

The purpose of Pension Insurance Corporation plc ("PIC") is to pay the pensions of its current and future policyholders. PIC provides secure and stable retirement incomes through leading customer service, comprehensive risk management and excellence in asset and liability management. At year-end 2018, PIC had insured 192,100 pension scheme members and had £31.4 billion in financial investments, accumulated through the provision of tailored pension insurance buyouts and buy-ins to the trustees and sponsors of U.K. defined benefit pension schemes. Clients include FTSE 100 companies, multinationals and the public sector. PIC is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and Prudential Regulation Authority (FRN 454345).

About the 'Purpose of Finance'.

The Purpose of Finance project, sponsored by Pension Insurance Corporation, facilitates a constructive debate amongst policymakers, regulators, people who work in financial services and others, about how to resolve the intractable problems within the industry and repair the disconnect with society. Ultimately, we will bring forward practical policy solutions.

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Over the two years that the Purpose of Finance has been running, a few key themes keep recurring. In particular, investor short-termism and risk aversion seem to propagate the disfunctions apparent in financial services. These themes are explored in depth in this paper, The Purpose of Stock Exchanges, by William Wright, of New Financial. It is the fourth to be published in the Purpose of Finance series and we are delighted that we have been able to publish it with the help and assistance of the London Stock Exchange Group.

The focus by asset owners, and their mandated asset managers, on short-term returns has put considerable pressure on listed companies to curtail long-term investment. Instead, they are required to bolster quarterly profits and return money to shareholders through buybacks and dividends.

This pressure has serious societal consequences: a lack of long-term investment by listed companies may be a primary cause of falling productivity and therefore falling real wages over the past decade.

The financial services industry is not working as it should. But many in the industry recognise this and genuinely want to help reform it, so that there is a democratisation of wealth accumulation. By ensuring that financial services companies have a clear focus on their individual purpose, and are then regulated to that purpose, we can all help to build an efficient, balanced financial industry that serves society.

All materials relating to the Purpose of Finance projects can be found at https://www.pensioncorporation.com/thought-leadership/the-purpose-of-finance/.

Tracy Blackwell
Chief Executive, Pension Insurance Corporation plc

What is the purpose of stock exchanges?

About William Wright

The founder and managing director of New Financial is William Wright, the former Editor and a member of the founding team at Financial News, a specialist publication for the capital markets that is now part of the Wall Street Journal and Dow Jones.

William was editor of Financial News between 2003 and 2011, and on his watch Financial News established itself as one of the most widely-read and respected publications for the investment banking and asset management industries. He played an active role in the sale of Financial News to the Wall Street journal in 2007. He was educated at Oxford, London, and INSEAD.

William Wright
Managing Director, New Financial

An analysis of the changing world of stock exchanges and public equity markets over the past 50 years: What has happened, what's been driving it, why should we care, and what should we do about it?

William Wright
Managing Director
New Financial

newfinancial.org

About New Financial

New Financial is a think tank launched in 2014 that believes capital markets can and should be a force for economic and social good. We believe Europe needs bigger and better capital markets – and that this presents a huge opportunity for the industry and its customers to embrace change and rethink how capital markets work.

New Financial has three main aims:

To make the positive case for bigger capital markets.
We believe capital markets can play a vital role in driving prosperity across Europe – and that Europe needs capital markets more than ever.

To make the case for better capital markets.
We believe that by embracing change the industry can make capital markets work better for customers and restore trust with policymakers and the wider public.

To cut across vested sector interests and encourage more collaboration.
We believe the best way to achieve real change is for different market participants to work together to address common challenges.

Foreword.

Stock exchanges have for centuries sat at the heart of the financial system; London Stock Exchange itself has a history going back almost 300 years. This report makes a significant contribution to the examination of the valuable role exchanges have played supporting healthy and vibrant capital markets and their unique ability to drive value creation, as well as ensuring the wider public participate in the rewards of economic growth.

During the last 70 years, we have seen many transformational changes to the financial industry in the UK and worldwide. Stock Exchanges have evolved from nationally focused markets to international centres for truly international flows of capital, responding to changes in technology, regulatory harmonisation and demands from issuers and investors who have an increasingly global reach and outlook.

In the EU, regulatory harmonisation has opened up trading in securities so that investors have a choice of a multitude of execution channels; in the UK there are more than 170 trading venues alone[1]. Investors, both active and passive, have continuously refined their investment strategies and approaches to allocation, demanding access to ever increasing amounts of data across a range of asset classes to support analytics, management of risk and optimisation of returns.

Adapting to changing times has also seen exchanges expanding their offering and transforming into global financial market infrastructure businesses. In addition to their core activities of enabling companies to raise funds and providing investors with a source of liquidity, most now offer a wider range of additional services across the capital market's life cycle and value chain.

However, the role of funding the real economy remains a core purpose of any stock exchange - UK-quoted small and mid-cap companies alone have a combined market capitalisation of £428bn and employ over 3 million workers[2]. While there are an increasing number of funding options available to companies, allowing them to find the most suitable one for them is key. There is no doubt that the role public markets play in fostering good governance, promoting accountability and transparency, as well as levering scale is a vital part of this funding mix.

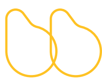
In recent years, stock exchanges have been at the centre of financing the next global transition to a low carbon economy, supporting new green products across all asset classes.

Exchanges have adapted, through providing new and innovative initiatives and services, while continuing to remain faithful to the founding principle of channelling long-term capital to where it is needed for the benefit of companies and investors as well as the wider society in the shape of job creation, retail participation and better returns for asset owners. Policymakers should be cognisant of the unique value this part of the financial ecosystem provides as they develop the fiscal and regulatory framework in the years ahead.

Nikhil Rathi
CEO, London Stock Exchange plc & Director of International Development, London Stock Exchange Group (LSEG)

[1] ESMA's register: RM + MTF + SI with HQ in the UK
[2] 'How small and mid-cap quoted companies make a substantial contribution to markets, employment and tax revenues'. Hardman & Co in collaboration with the Quoted Companies Alliance. May 2019

Introduction.



The paradox of stock exchanges: stock exchanges are bigger, deeper and more efficient than ever before - but fewer and fewer companies are choosing to be listed on them or to use them to raise capital.

Stock exchanges have played an important role at the heart of the economy in helping companies raise capital for more than 200 years. Healthy stock exchanges are crucial to financing growth and innovation. They are ideally suited to funding projects with a long-term and uncertain outcome. They provide access for companies to a deep pool of capital, enable price discovery, spread risk, help widen wealth creation, and increase transparency and corporate governance standards.

There are more than 1,700 UK companies listed on the London Stock Exchange with a combined market value of more than £2.4 trillion. In the past five years nearly 600 new companies have listed on the stock exchange, and between them, listed companies have used the stock exchange to raise more than £125bn.

The fundamental purpose of stock exchanges is capital formation and intermediation: they provide a central marketplace to help companies raise capital from investors who have it. This involves a delicate balancing act between the interests of different market participants, in particular between the interests of companies looking to raise capital in what is known as the primary market, and the interests of different types of investors, investment banks, brokers and stock exchanges themselves in the secondary market (day-to-day trading).

On many measures, stock exchanges have been hugely successful over the past 50 years: the value of stock markets in the UK and US has risen more than fivefold in real terms and they have doubled in size relative to GDP. Over the same period the value of trading in listed companies in the UK and US has increased by more than 50 times in real terms and by 10 times relative to their combined market value. Stock exchanges are bigger, more liquid and more efficient than ever before.

The business of stock exchanges has also been transformed in the past few decades. Exchanges have shed their traditional mutually-owned business model and have become for-profit listed companies. Computers have swept away stock exchange trading floors, the cost of trading has collapsed by more than 90%, and the speed of trading has accelerated towards the limits of physics.

And yet, stock markets seem to be less attractive to companies than at any time since the early 1980s: the number of domestic companies listed on the London Stock Exchange has virtually halved over the past 50 years, and in the US the number of listed companies has dropped by nearly half from its peak in the mid-1990s. In most developed economies, the trend is in the same direction. In the past 5 years, the number of new listings in the UK and the US has fallen by three quarters, and the amount of money that they have raised through the stock market has declined by two thirds in real terms on both sides of the Atlantic.

1,700
the number of UK companies listed on the London Stock Exchange

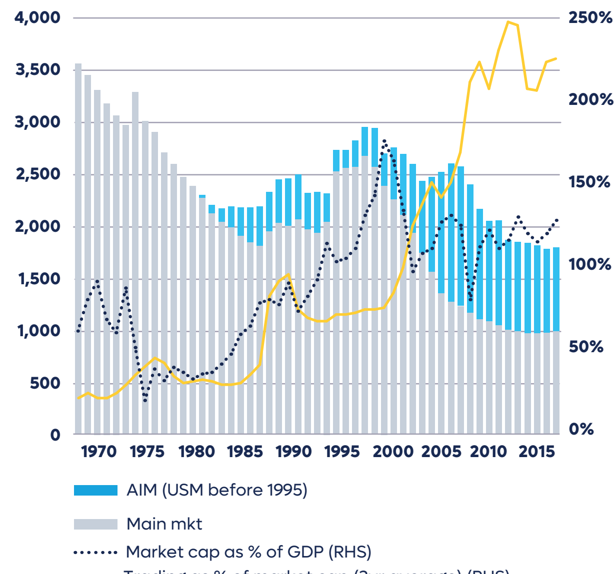
2.4 trn
the combined market value of listed UK companies

This paper analyses what has happened to stock exchanges over the past 50 years in the context of their basic purpose and asks whether the balance of interests has swung too far from the primary side of the market (capital raising) to the secondary side of the market (trading).

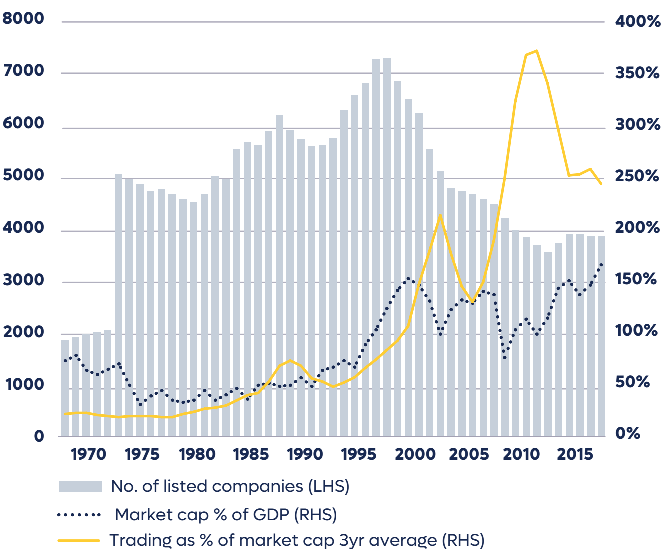
The debate over the decline of publicly-listed companies is not new. In 1989, Harvard professor Michael Jensen pondered whether 'the public corporation has outlived its usefulness' and declared that a market designed to meet the capital-raising needs of the 19th century economy was no longer fit for purpose. More recently, there have been swathes of studies on the topic, which have reached two broad conclusions: first, that the cost and regulatory burden on publicly-listed companies in terms of disclosure and corporate governance requirements have reduced the appeal of being listed. And second, the surge in the availability of private capital over the past 20 years - in the form of venture capital, private equity, and more recently sovereign wealth funds - has provided companies with a viable and attractive alternative to going public.

Fig. 1: The changing shape of stock markets over the past 50 years
The number of listed companies, market value and trading volumes in the UK and US 1967 to 2017
Source: New Financial, LSEG, S&P, Fidessa, SEC

i) UK stock market:



ii) US stock market*:



* Note: the big increase in 1973 in the US was when companies listed on Nasdaq first officially became listed companies

We hope this paper adds to this debate in several ways. First, by framing the argument in terms of purpose. Second, by pulling together many of the different strands of existing research. And third, by highlighting the impact of rapid changes in trading, secondary markets and the business of stock exchanges. It argues that the driving force behind the structural decline in public equity markets over the past few decades has been the shift in incentives for all market participants, that in turn has been driven by changes in regulation, technology and scale.

For the purposes of this paper, we have focused on the equity side of the business of stock exchanges instead of the markets they provide in bonds and derivatives - you can find an exchange that trades derivatives on virtually anything from interest rates to the price of fish (literally: the Oslo Bors runs a market called 'Fish Pool' for trading salmon futures). And we have focused on their domestic equity markets: around 40% of companies listed on the main market in the UK are international companies that have listed in London. We have also focused our attention on the UK and US market because of the higher quality of long-run data: while stock exchanges are thriving in developing markets such as Asia, the apparently structural shift in listed companies is a common theme in most developed markets.

Acknowledgements:

I would like to thank Christian Benson and Eivind Friis Hamre at New Financial for doing much of the heavy-lifting, data-mining and analysis on this project; Pension Insurance Corporation, the London Stock Exchange and David Pitt-Watson for their advice and support with this report; and to all our members at New Financial who support our work on building bigger and better capital markets. Any errors are entirely my own.

William Wright
Managing director, New Financial

Summary of the main themes.

Defining the purpose of stock exchanges

We define the fundamental purpose of stock exchanges as capital formation and intermediation: they provide a centralised marketplace to enable companies to raise capital from investors who have it and to enable those investors to trade shares in listed companies between them. This intermediation involves a delicate balance between overlapping and often competing interests of different market participants. This juggling act can be broadly split into primary markets (raising capital) and secondary markets (trading and price discovery), but there is a clear circularity between them and the two feed each other.

Defining our thesis: 'the stock exchange paradox'

On many measures, stock exchanges are bigger, more liquid and more efficient than ever before. The value of stock markets in the UK and US has risen more than six-fold in real terms in the past 50 years and the value of trading in listed companies listed in the UK and US has increased by more than 50 times in real terms.

But something is clearly wrong: the number of listed companies on stock exchanges in the UK and US has roughly halved over the past 25 years, the number of new listings has dropped by three quarters, and the amount of capital being raised on stock exchanges has dropped by around two thirds. We think the balance between the primary and secondary side of the market and between the interests of different market participants needs to be reset. The benefits of technology and scale across the financial industry over the past few decades have divided the stock market into a highly efficient and attractive market for the largest companies at one end, and a less liquid and less attractive market for smaller companies and the ecosystem around them at the other.

Defining the problem

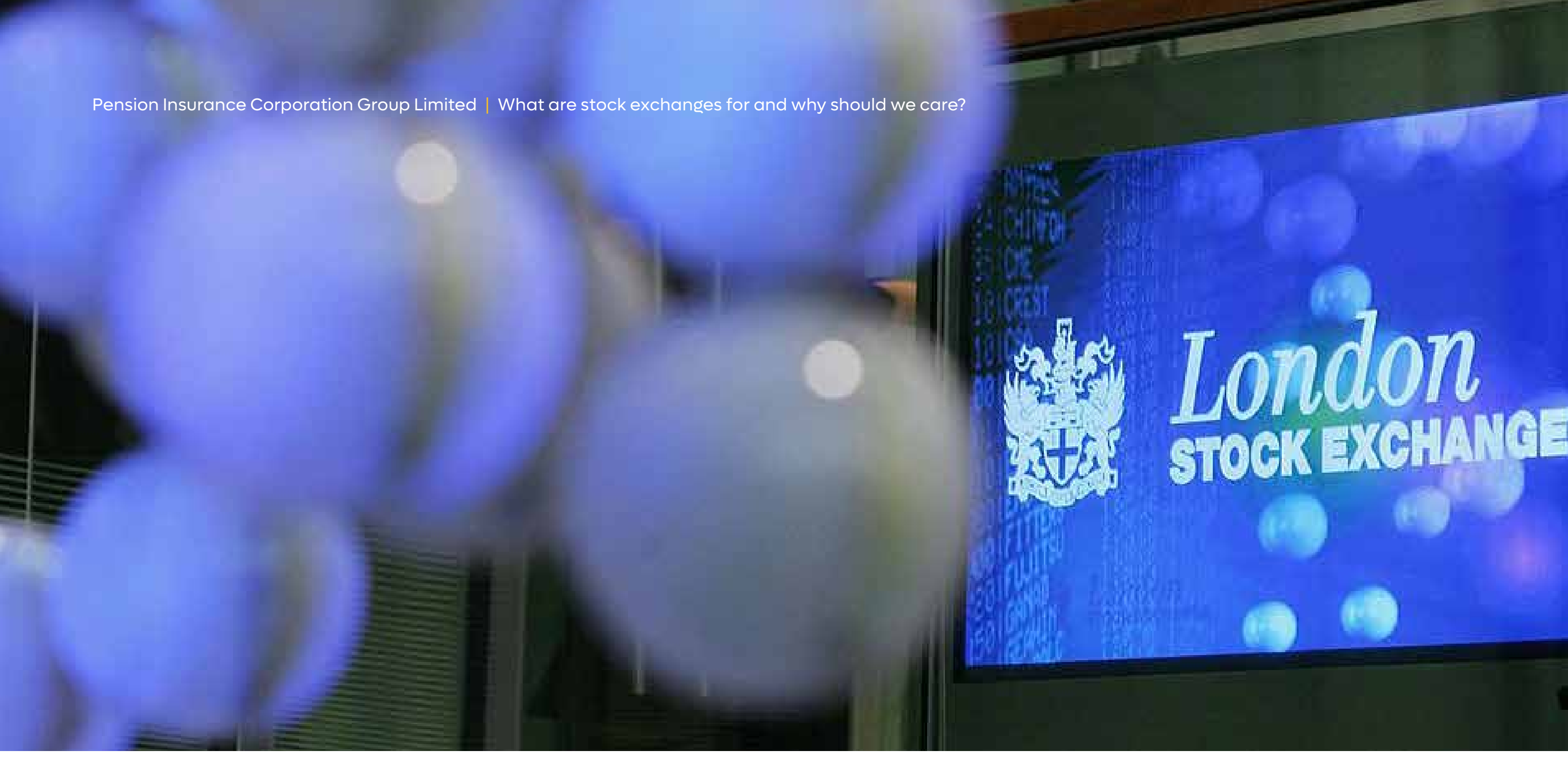
Over the past few decades public equity markets have been shrinking: the number of listed companies, the number of new listings, and the amount of capital being raised in equity markets has fallen by between 40% and 75% since the mid-1990s. This has been particularly acute for smaller companies, where activity has fallen by as much as 80%. Listed companies are becoming bigger and older, they're leaving the market at a faster rate than they can be replaced, and share buybacks, acquisitions and delistings are sucking valuable equity out of the market.

At the same time, companies are facing ever greater pressure from investors to deliver short-term results at the expense of longer-term growth. The huge growth in trading volumes and the increased complexity of market infrastructure around stock exchanges has arguably encouraged a shift towards the secondary side of the market at the expense of the new issue market, with a particular impact on smaller companies. The increased scale and complexity of the wider financial services industry, the rise of passive investment, and regulatory reform have changed the economics of the industry and encouraged more focus on the larger end of the market. The net result is that the advantages of scale, technology and efficiency over the past few decades have accrued to an ever-smaller group of listed companies and market participant.

Why should we care?

Stock exchanges are a social good. Healthy stock exchanges play a vital role in supporting the wider economy: equity is a unique form of financing that is ideally suited to support long-term investment with an uncertain outcome. Equity encourages innovation and improvements in productivity that drive economic growth. Equity - and particularly public equity markets – helps drive the wider sharing of wealth creation, and stock exchanges play an important role setting standards, providing transparency, and supporting the social licence for businesses across the economy.

On the other hand, it's important not to over-react to the apparent decline in listed companies. There is little indication in the US or UK that high-potential companies are unable to access the growth capital they need, and the structural shift in the economy over the past 50 years from a reliance on fixed assets to intangibles has reduced the overall amount of funding they require. And new listings are only part of the story: two thirds of the capital raised on stock exchanges is by companies that are already listed. Too much focus on the UK, US and other developed markets may also distract attention from the fact that stock exchanges in emerging markets are thriving.



What are Stock Exchanges and why should we care?

Defining the causes

There is no single cause of the decline in public equity markets, but we think there are three main themes:

- **the increased availability of alternative sources of capital from venture capital,** private equity, and sovereign wealth funds; the growth in the corporate bond market (that has been fuelled by abnormally low interest rates and the preferential tax treatment of debt over equity), and high levels of cash being generated by companies;
- **the perceived cost and burden of being listed** in terms of increased disclosure and governance requirements for listed companies, the cost of listing, the increasingly short-term focus of many investors, and high levels of public scrutiny;
- **structural shifts in the financial industry** such as the increase in scale, speed and technology in the financial industry, the reduced attractiveness of investing in public equity markets, the changing economics of broking, the changing dynamics for asset owners and asset managers, and the changing business model of exchanges.

We think the increase in the scale and complexity of the financial markets and wider financial industry has created a sense of dislocation between listed companies and the ecosystem of brokers, exchanges and investors around them. While the larger end of the market has benefited from these changes, this has come at expense of the smaller companies and the ecosystem around them.

Some suggested solutions for debate

There is no silver bullet to reverse what appears to be a structural change in the UK and US market. We think there are three main areas that could be improved

- **Resetting the regulatory framework:** including - reforming the tax treatment of equity finance; resetting regulation to encourage more investment in equity markets by long-term asset owners such as pension funds and insurance companies; improving access to private capital for defined contribution pensions to widen sharing in wealth creation; reducing the disclosure differential between privately-held and public companies by raising standards for large private companies and reducing disclosure that is not related to investor protection or shareholder rights in public markets; abolishing quarterly guidance and encouraging a limited
and consistent approach to quarterly updates.
- **Collective industry action:** including - different sectors of the industry should work together to support industry-wide initiatives such as the Long-Term Stock Exchange and Focusing Capital on the Long-Term in the US, and the Investor Forum in the UK; refocusing investors on long-term stewardship; reforming the IPO process and dragging it into the 21st century; encouraging more direct retail interest in equity and the new issue market; and creating industry-wide initiatives to invest in smaller companies and to support the ecosystem around them.
- **Rethinking exchanges:** including - the rationalisation and consolidation of exchanges and market infrastructure; encouraging more competition for listings between exchanges; introducing more speed bumps and auctions into trading; creating more clearly-defined markets with appropriate disclosure and trading arrangements (potentially including 'quiet zones' for smaller companies); investing more in corporate services to support listed companies.

Responses received from:

Chris Gibson-Smith
Vice chairman of UBS Investment Bank & former chairman of the London Stock Exchange

Alasdair Haynes
Chief Executive, Aquis Exchange

Tim Ward
Chief Executive, The Quoted Companies Alliance

Rebecca Healey
Head of EMEA market structure & strategy at Liquidnet

Andrew McNally
Chief Executive of Equitile Investments and author of 'Debtonator'

Rainer Riess
Secretary General of the Federation of European Securities Exchanges

John Godfrey
Head of group public affairs at Legal & General.

The apparent structural decline in public equity markets has an impact far beyond the stock exchange industry. Here are some reasons why we should care about its potential impact on the longer-term health of the wider economy:

Equity is unique:

Equity is a unique source of funding to help companies invest in their growth. Unlike bank lending or corporate bonds, equity is a form of permanent capital that doesn't have to be paid back. If the money raised runs out, a company can raise some more without putting additional strain on its resources. Debt is often secured (or 'collaterised') against property or other fixed assets like machinery, it requires regular fixed repayments, and if a company gets into trouble the holders of its debt are more likely to get their money back. But because equity only has a residual claim on a company's future earnings, it is uniquely suited to financing projects and investments with a long-term and uncertain outcome (not least, ideas and intellectual property aren't very good 'collateral'). A start-up biotech company cannot fund itself for the first few years with a bank loan or a bond, because if the research doesn't work there will be no money left to pay back the loan, and if the money runs out there will be nothing against which to collateralise another loan.

Exchanges and growth:

There is a growing body of research that highlights a link between deeper stock markets and economic growth. In many countries around the world, most of the funding for companies comes from bank lending, which leaves companies exposed to a credit crunch whenever banks get into trouble or when there is a financial crisis. For example, since 2008 the annual flow of new bank lending to companies in the eurozone has halved in real terms. Equity markets provide a valuable complementary source of financing that is often more flexible and forgiving. Specifically, research by the economist Ross Levine at Berkeley has highlighted the link between deeper stock markets and higher future levels of growth in GDP per capita.

Exchanges and innovation:

Stock exchanges play an important role in supporting innovation. Given the unique nature of equity as a source of financing for long-term and uncertain projects, it is intuitive that more equity funding should lead to more innovation. An academic study in 2010 (Hsu, Tian and Xu) quantified how an increase in equity markets as a percentage of GDP in one year led to a measurable increase in innovation in the following year, as measured by growth in the number of patents. At the same time, it found that an equivalent increase in the amount of credit available relative to GDP led to a measurable decrease in innovation by roughly the same opposite proportion.

Exchanges and productivity:

Innovation is a central driver of productivity growth because innovative leaps and inventions enable significant increases in output per hour. And productivity growth is one of the main drivers of real increases in GDP per capita. Productivity in the UK has lagged behind the US, France and Germany for more than 50 years, but since the financial crisis this gap has widened: over the past decade productivity in the UK has flatlined. A higher equity to debt ratio in corporate funding encourages productivity growth. The UK and other economies need all the help they can get to reignite productivity growth, and equity can play a big part in this.

Over-reliance on debt finance is damaging both business and society. Debt leaves control and ownership in the hands of too few: it is a direct source of extreme inequality. Equity finance can redress the balance; by broadening direct ownership of assets through equity, we can make everyone better off - not just the few. There is value in equity way beyond what financiers, economists, investment bankers and many corporate CEOs will tell you. It is the value of aligned interests, of trust and fairness, of optimism and patience, of stability and simplicity, of shared endeavour. Only when we unleash this value will economic democracy secure the political democracy that we cherish.

Debtonator, by Andy McNally

Exchanges and investment:

There is widespread concern that increased short-termism in equity markets is reducing long-term investment, particularly in areas such as research and development, a thesis that has been backed up by multiple academic studies. In the US R&D has flatlined at about 2.5% GDP since the mid-1980s and the share of R&D spending on early stage research (that has the potential for the biggest jumps in innovation) has shrunk as companies invest more in later stage product development, where the pay-off is likely to be bigger and come sooner (ITIF).

However, there is growing evidence that listed companies invest more than privately held companies. A recent study by the Federal Reserve based on previously unavailable access to the tax returns of listed and privately held companies found that public companies invest more overall in their business and that a higher proportion of their investment goes on long-term projects, particularly R&D. The research showed that after companies list, their spending on long-term investment and R&D increased, and that after a company is taken private it invests less. This highlights the potential long-term economic damage of shrinking equity markets.

Exchanges and wealth sharing:

In the same way that equity is a unique form of funding, it is also a unique form of investment and encourages the wider participation in wealth creation. When a company financed by bank lending or corporate bonds does well, the bank or the bondholders get their money back plus the interest payments over the term of the loan. When a company funded by equity does well, all its shareholders share in that success. The changing profile of listed companies – and particularly new issues – may limit that wealth sharing in the highest potential companies. And there is a danger that the stock market becomes a club for fewer, larger, and older companies – and a club that fewer companies want to join in future.

As new companies decide to wait longer before they list (or decide not to list at all) their growth and returns are limited to those investors who are able to invest in private markets, such as already wealthy investors or the minority of people lucky enough to be part of a large defined benefit pensions scheme (the long-term timeframe of private capital funds means that most defined contribution pensions – the most common schemes in the UK and the US – have very limited access to them). This could limit the returns from equity markets just as millions of people in the UK are being exposed to the stock market for the first time through pensions auto-enrolment, and reduce the value of their future pension pot.

Exchanges and social licence:

At a time when levels of public trust in companies is low and amidst the debate on the crisis of capitalism, individuals are being asked to carry more of the responsibility for their future pensions as companies shift from defined benefit to defined contribution pensions, and through initiatives such as auto-enrolment in the UK. A recent paper by the CFA Institute argued that 'having large sections of the capital markets out of bounds for pensions savers is unlikely to be politically viable or even desirable in the long-term'. This sense of exclusion could heighten concerns over inequality and raise questions over the social licence to operate that is fundamental to sustainable capitalism.

Exchanges and transparency:

This social licence is unlikely to be helped by a larger proportion of companies staying in private hands. Exchanges provide a huge amount of transparency into the business of companies listed on them, through listings and disclosure standards. While many people may argue that the affairs of a privately-held company should remain private, this line becomes increasingly difficult to hold as privately-held firms extend into a wider range of vital and politically-sensitive sectors such as healthcare, care homes, and infrastructure. While lower levels of scrutiny may be attractive to privately-held companies, they reduce the overall level of transparency across the business world.

Exchanges and standards:

Stock exchanges don't just provide a market place for capital raising and trading. They play an important role in quality control for listed companies through listings standards, by feeding into and monitoring compliance with corporate governance standards, and in market surveillance. Public equity markets do not operate in a vacuum: the disclosure and governance standards for listed companies often filter down into privately-held companies and the efficient operation of public markets provides an important benchmark for valuations and best practice in private markets.

Defining the purpose of Stock Exchanges.

We define the fundamental purpose of stock exchanges as capital formation and intermediation: providing a centralised marketplace to enable companies to raise capital from investors who have it – and enabling those investors to trade shares in listed companies between them. The initial paper in the 'Purpose of Finance' series identified four principle purposes of the financial industry: the safe-keeping of assets; providing an effective payment system; pooling risk; intermediation - matching the users and suppliers of money. Stock exchanges sit firmly under intermediation by helping to move money from where it is to where it is needed.

However, given the wider range of market participants in and around the world of stock exchanges, and the increasingly complex structure of the stock exchange industry, defining 'purpose' is not as easy as it might appear. When we asked people in and around the industry how they would define purpose, the answers ranged from capital raising and capital formation at one end of the spectrum to price discovery and risk management at the other (with one respondent saying the purpose of stock exchanges was 'to make money').

Capital formation involves a delicate balance between overlapping and often competing interests of different groups. This juggling act can be broadly split into primary markets (raising capital) and secondary markets (trading and price discovery), but the two feed each other.

A strong flow of new companies raising capital in the primary market requires a healthy secondary market in the shares of those companies, while a strong secondary market requires a healthy flow of listed companies in the primary market. Another way of putting this is that without listed companies, there is no trading; and without trading, there are no listed companies.

Stock exchanges provide a centralised marketplace to enable companies to raise capital from investors and to enable those investors to trade shares in listed companies

Like any market, the secondary market side of a stock exchange's business provides the vital function of price discovery (setting a valuation at any given time on the company and its shares). It also provides what is known as the 'liquidity risk premium', which means that a listed company with freely-traded shares is worth more than as a privately-held company.

Stock exchanges sit in the middle of three broad groups of market participants: companies, investors, and intermediaries (such as brokers, traders and investment banks). In turn, different firms within these groups have different interests. The challenge for stock exchanges is to ensure that the interests of no single group come to dominate the others and to maintain the right balance between primary and secondary markets.

The rapid growth of trading over the past 50 years - and particularly over the past two decades - is a case in point. Given that the secondary side of the equation is bigger, deeper and more efficient than ever before, why is that not reflected on the primary side? The danger is that trading and liquidity have become an end in themselves.

In addition to this underlying purpose, stock exchanges perform several important functions, including:

- **Operating efficient and resilient market infrastructure and IT systems**
- **Acting as a quality control filter for listed companies through setting listings standards**
- **Providing a relevant public benchmark for the operating and valuation of private markets**
- **Feeding into corporate governance standards and often monitoring compliance**
- **Market surveillance and monitoring to prevent market abuse and ensure that markets are fair**
- **Promoting awareness of the benefits of equity financing and often running wider financial education and literacy programmes**

A historical perspective.

What's left of the Antwerp Stock Exchange

The birth of exchanges

There is evidence that securities in individual companies were traded in the days of ancient Rome, and government bonds were traded in 13th century Venice. But the first formal stock exchange was probably in Antwerp in 1531 – although it only traded promissory notes and bonds. The first stock exchange in the modern sense of the term was in Amsterdam, which was set up in 1611 by the Dutch East India Company (the VOC in Dutch) with the express purpose of enabling the company to raise money from a wider range of investors by selling shares to the public.

The VOC, which became the first listed company in the world, raised more than a billion euros in today's money from thousands of investors to finance its trading voyages around the world on a more permanent footing through the form of a joint stock company (previously, speculative voyages had been financed by small groups of wealthy investors who shared the gains or the losses if and when the ships returned many years later). The VOC also holds the dubious honour of being the first company to be shorted, the first to have a corporate governance dispute with its shareholders, and the first to attract the attention of shareholder activism.

The formalisation of exchanges

Joint stock companies and the concept of exchanges took off in Europe in the late 17th century. In 1690, there were just 15 joint stock companies traded informally in coffee shops in the City of London around what is now the Bank of England with combined capital of just £200m in today's money: 30 years later at the height of the South Sea Bubble, nearly 200 companies raised an astonishing £48bn in today's money in a two-year period from 1719 to 1720.

The impetus for this rapid growth was not companies but government debt, after the creation of permanent transferable government bonds in the UK in 1694. The formalisation of stock exchanges became an important factor in the rapid development of the Dutch and British economies and their development as world powers.

The London Stock Exchange has its roots in informal trading in coffee houses in London from the late 17th century.

The golden age of exchanges?

The formal creation of the London Stock Exchange (1801) and the New York Stock Exchange (1817) ushered in a golden era for stock exchanges in terms of financing economic growth. In the early 19th century the majority of stocks listed in London and New York were banks, insurers and trading companies. Philadelphia was the largest exchange in the US but as railway operators ran out of local sources of capital, they increasingly looked to raise money on exchanges and from investors in New York and Europe through the sale of bonds and shares, to finance their growth.

By the 1840s stock exchanges were funding the rapid growth of railways and utilities on both sides of the Atlantic. By 1850, railways companies had raised the equivalent of £33bn in the UK, and by the end of the 19th century railways and utilities companies were worth around £300bn in today's money the UK and nearly twice that in the US.

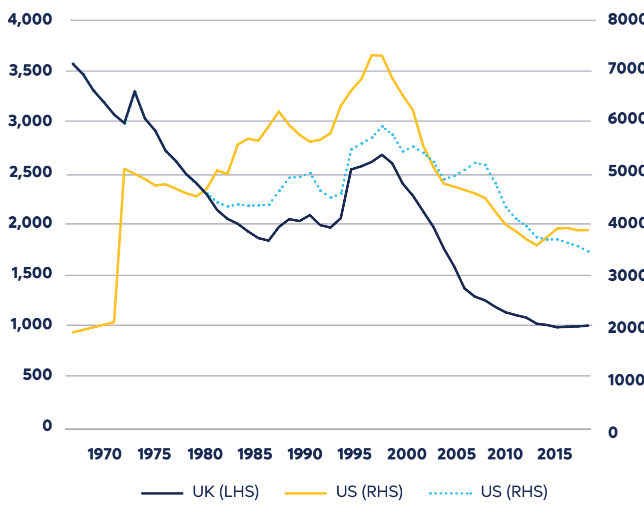
What has changed over the past 50 years?

This section looks at some of the main trends in stock exchanges over the past 50 years and the challenges that they pose.

1) The decline in the number of listed companies

The most obvious challenge facing stock exchanges in many developed markets today is that the number of listed companies is shrinking. In the UK, the number of domestic companies listed on the stock exchange has more than halved over the past 50 years (from 3,574 in 1967 to 1,740 in 2017) and the number has dropped by more than 40% in the past 20 years.

Fig. 2: The number of listed companies in the UK and US over the past 50 years
Source: The listing gap / CRSP, LSEG



In the US, the number of listed companies has nearly halved from its peak in 1996 (from 7,322 to 3,900) and the total number of listed companies is down by more than a fifth since 1972 (the first year in which stocks on Nasdaq were included).

The number of companies listed on stock exchanges in the UK and US has nearly halved over the past 25 years.

This problem is not unique to the US and UK: France has 700 fewer listed companies than it did in 2000 (a fall of 61%) while in Germany the number of listed companies has nearly halved in the past decade alone. The only big developed markets that have bucked this trend are Japan, Canada and Australia, where the number of listed companies has doubled or tripled since 1980.

For the time being at least, the decline in the number of listed companies is a developed markets phenomenon. While the available data is not always consistent, the number of listed companies in developing markets around the world has increased tenfold since 1980 and shows no sign of slowing down (see page 22).

2) The impact on smaller companies

The fall in the number of listed companies is primarily a small and mid-sized company phenomenon. In the UK, companies with a market value of less than £100m in today's money account for more than 95% of the decline in the number of companies on the main market. The number of mid-sized companies (valued between £100m and £500m) dropped by 44% over the same period, while the number of listed companies worth more than £1bn rose slightly. If you include AIM stocks in this analysis, the overall number of listed companies fell by 9% and companies worth less than £500m accounted for all of the decline. The median value of companies listed on the main market has tripled in real terms from around £140m in 1999 to £425m in 2017. And on AIM itself, the number of listed UK companies has fallen by 40% in the past decade from a peak of just under 1,350 in 2007 to 800 at the end of 2017 (over this period, some 300 companies transferred from the main market to AIM).

In the US, the proportion of listed companies that have a market value of less than $100m in real terms fell from two thirds in 1975 to a quarter in 2015 (the listings gap). We estimate that 'micro-companies' (the bottom 20% by market value) account for three quarters of the decline in the number of listed companies in the US since 1999.

3) The decline in new issues and capital raising

The decline in the number of new listings and capital raising is even more stark than the decline in the number of listed companies: fewer companies are choosing to go public, and they are raising far less capital from equity markets than they used to. In the UK the number of new issues and the amount of money raised in real terms has fallen in real terms by three quarters from its peak in the early 1990s. In the US, it's a similar story: since 2001 there have been 109 IPOs a year, just one quarter of the average number of new issues in the decade before. In real terms those new issues have raised about $31bn a year - little more than half the average amount raised each year in the 1990s. In the UK the average amount raised when companies do a new issue has remained surprisingly constant over the past few decades at between £300m to £350m per listing in today's money. In the US, the average amount raised per new listing has soared fivefold from around $350m in the 1990s to more than $1.7bn today.

Fig. 3: The decline of smaller listed companies
The distribution of companies by market value in the US and UK 1999 to 2017
Source: New Financial, LSEG, Vanguard, CRSP

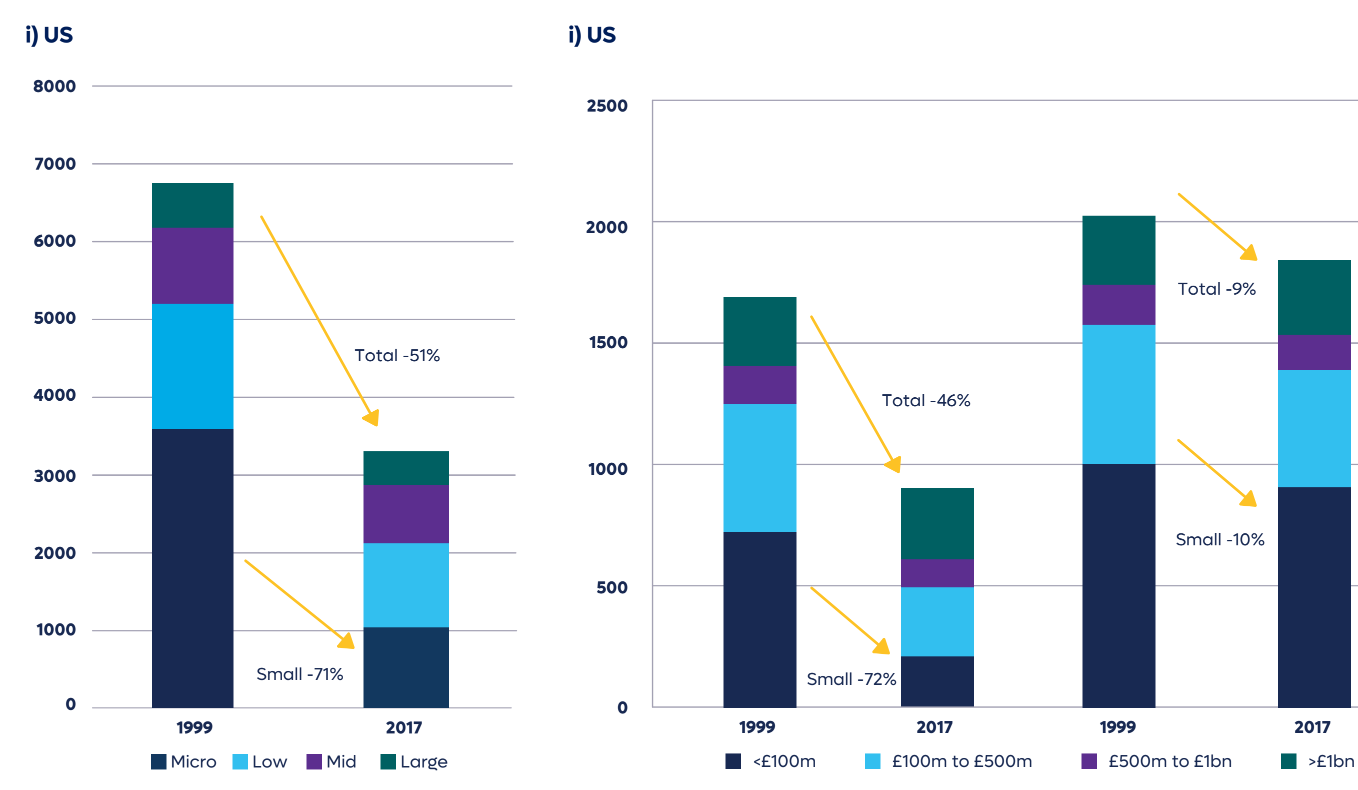


Fig. 4: The fall in the number of new listings
Number of new issues 1970 to 2017
Source: The listing gap / CRSP, LSEG

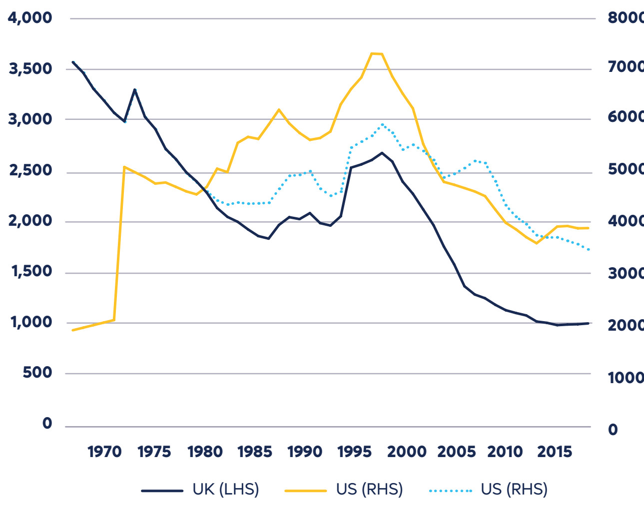
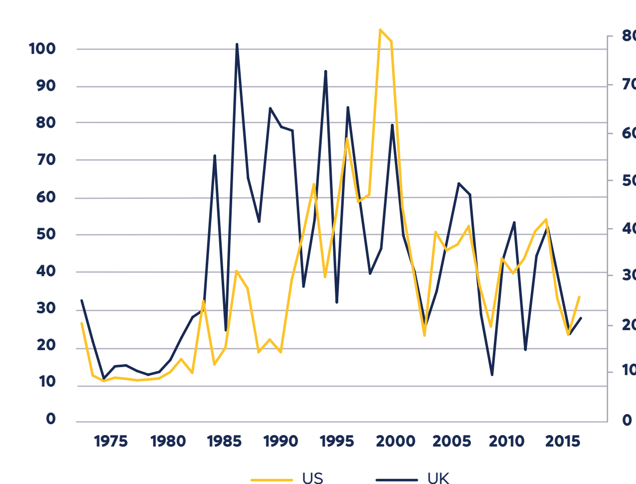


Fig. 5: A declining source of capital
Total value of new issues in real terms $bn 1970 to 2017
Source: LSEG, Jay Ritter



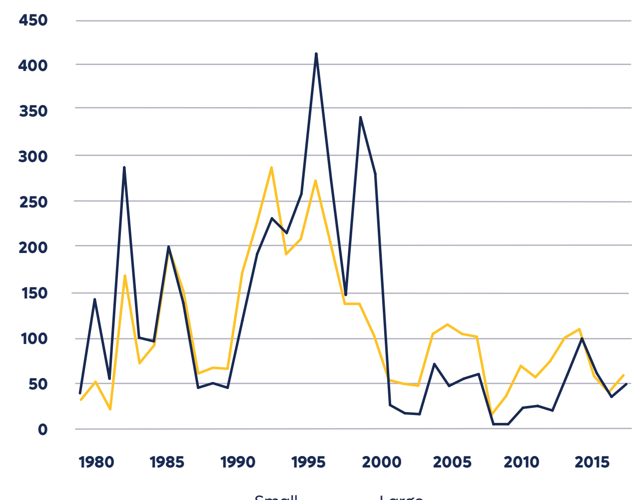
Note: the UK data includes all new listings to capture the longest possible time series, the US data only includes IPOs that raised new capital.

4) The decline in smaller company IPOs

New issues by smaller companies have been particularly hard hit. In the US, IPOs by smaller companies (defined as having revenues in real terms of less than $25m) account for two thirds of the drop in new issues, according to research by Jay Ritter at the University of Florida. An average of just 37 smaller companies a year have launched an IPO since 2001, compared with nearly 250 a year in the 1990s.

Smaller IPOs outnumbered larger IPOs in the US in two in every three years from 1980 to 2000. Since 2001, there have been more IPOs by larger companies than smaller companies in every year except in 2015. The amount of money raised by smaller companies has also fallen sharply: by 80% in real terms in the US and by an estimated 60% in the UK between 1997 and 2017 based on our analysis of IPOs that raised less than $100m. Over the past decade an average of 65 companies a year have listed on AIM, just one third of the annual average between its launch in 1995 and 2007.

Fig. 6: The decline of small company IPOs in the US
Number of small and large company IPOs 1980 to 2017
Source: Jay Ritter



5) Delistings: calling it a day

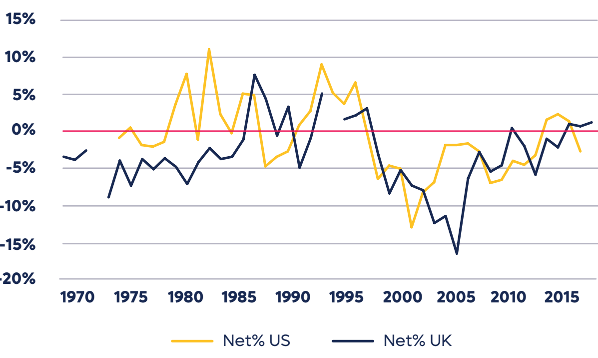
Along with the slowdown in new issues, the main factor in the decline in the number of listed companies over the past few decades has been an increase in delistings (when a listed company is acquired, goes bust, or chooses to delist from a stock exchange). Between 1970 and the late 1990s, the delisting rate ticked over at around 5% of all listed companies a year in the UK and 7% in the US.

But in the late 1990s it took off: in the 10 years from 1998 the average annual delisting rate in both the UK and US jumped to around 12% a year. While the delisting rate has stabilised more recently, more than 2,400 companies have delisted from the main market on London Stock Exchange over the past 20 years.

Fig.7 shows the net listing rate of companies in the UK and US since the 1970s (that is, the number of new listings minus the number of delistings expressed as a percentage of the total number of listed companies). Since 2001 the number of new listings has exceeded delistings in just three years in the UK and US, and the number of listed companies has shrunk in the UK in 38 of the past 48 years.

A big part of the explanation for the increase in delistings in the late-1990s is the significant growth in merger activity: in the decade up to 1994, mergers accounted for around 230 delistings a year in the US. This nearly doubled over the next 10 years.

Fig. 7: The net delisting rate in the UK and US since 1970
Source: The listing gap / CRSP, LSEG

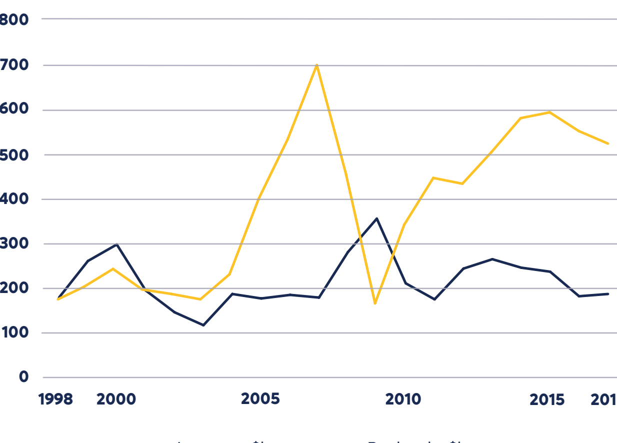


Note: before 1999 UK numbers are based on New Financial estimates

6) The rise in buybacks

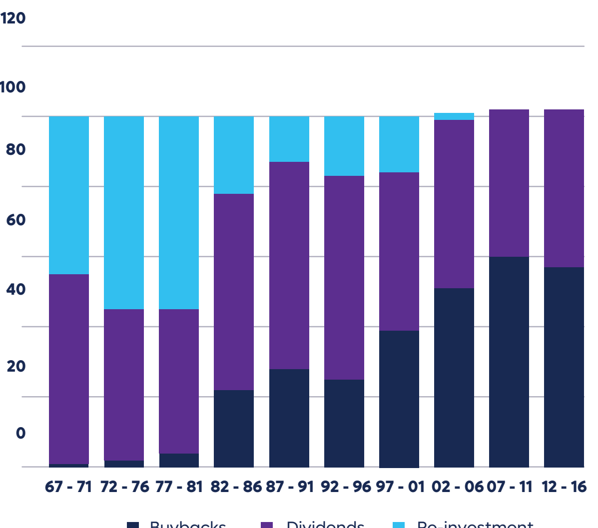
This effect has been exacerbated by the increase in share buybacks (when companies buy back their own shares and cancel them as a way of returning capital to shareholders). In 2017 US companies bought back an estimated $527bn of their own shares: nearly three times as much in real terms as they did 20 years earlier, and three times the combined value of capital raised in the equity markets. Over the past 20 years, issuance has exceeded buybacks in just three years in the US in 1999 and 2000 (at the height of the dotcom boom) and in 2009 (when many companies were rebuilding their balance sheets in the wake of the financial crisis). On average, over the past 20 years, for every dollar of equity raised in the equity market, two dollars are cancelled through buybacks, and in real terms buybacks have sucked nearly $8 trillion in equity out of the US market.

Fig. 8: Buyback and new issuance in the US 1998 to 2017
$bn in real terms
Source: Dealogic, S&P



Note: S&P500 companies excluding outliers

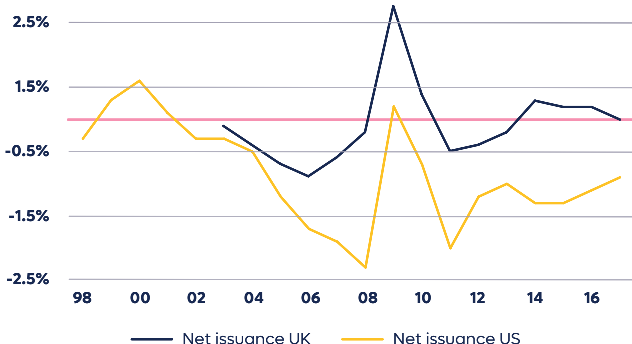
Fig. 9: The split between buybacks, dividends & investment
Source: Lazonick and Van Bever



The growth in share buybacks points to a concerning trend among larger companies to pay more of their profits out to shareholders and invest less in their business, with significant potential long-term consequences. It also suggests that companies are under greater pressure to generate short-term returns for their shareholders and are being rewarded less for making longer-term investments. In the five years to 2016, companies in the S&P500 effectively paid out more to shareholders in buybacks and dividends than they generated in profits according to research by Harvard academics Lazonick and Van Bever: buybacks added up to 57% of profits, and dividend payouts were the equivalent of another 45%. This is a stark contrast to the five years to 1971, when companies reinvested 45% of their profits.

The debate over buybacks has a long way to run: many market participants argues that buybacks are an effective way of returning excess capital to shareholders, drive longer-term performance, and that the proceeds from buybacks are available to be reinvested in equity markets elsewhere. More research is needed to establish whether companies that engage in buybacks invest less in their business as a result.

Fig. 10: Net equity issuance in the US and UK 1998 to 2017
Net equity issuance by non-financial corporates as a % of total market capitalisation 1998 to 2017
Source: Roosevelt Institute and Bank of England



De-equitisation

The combination of delistings, reduced equity issuance and share buybacks is feeding a process called de-equitisation: an inelegant way of saying that equity markets are shrinking. In the US net equity issuance (the value of new issues minus buybacks and cash M&A) has been negative in 16 of the last 20 years (according to research by the Roosevelt Institute) and in the UK, cumulative net issuance has been -£31bn in real terms since 2003.

7) Missing the bigger picture

New listings and IPOs attract a lot of attention and have dominated the debate on the future of stock exchanges and public equity markets for the past few decades. But they are only part of the story. One of the advantages of public equity markets is that once a company is listed, it can raise more money by selling additional shares to investors in what is known as a secondary or follow-on offering. IPOs account for less than 40% of the total amount of money raised in the stock market by companies in the UK since 1980s. In real terms, new listings have raised nearly £400bn since 1980, compared with more than £1 trillion raised secondary offerings. Fig.11 shows the balance between IPOs and secondary offerings on the main market in the UK since the 1980s.

However, it is important to note that this balance between secondary offerings and IPOs does not change the long-term downward trend in capital raising from stock markets: the total value of capital raised has fallen by around two thirds in real terms from its peak in the late 1980s.

While many other indicators have moved in the wrong direction over the past 20 years, it is interesting to note that a growing proportion of companies that do choose to list on the stock market return to the market within five years to raise additional capital (see Fig. 12). In the UK, this proportion has increased from around one third of companies that listed in 1997 to over 60% of companies that listed in 2012. On AIM more than 70% of companies that went public in 2012 have since used the stock market to raise additional capital and the trend is heading in the same direction in the US. The inverse of this is also true: a growing proportion of companies that raised capital in secondary offerings first listed on the stock market in the previous five years. More than half of UK companies that did a secondary offering in 2017 had completed their IPO in the previous five years, up from around one fifth in the early 2000s.

Fig. 11: Total capital raised on UK stock market
£bn in real terms, three year rolling average 1980 to 2017
Source: New Financial, LSEG

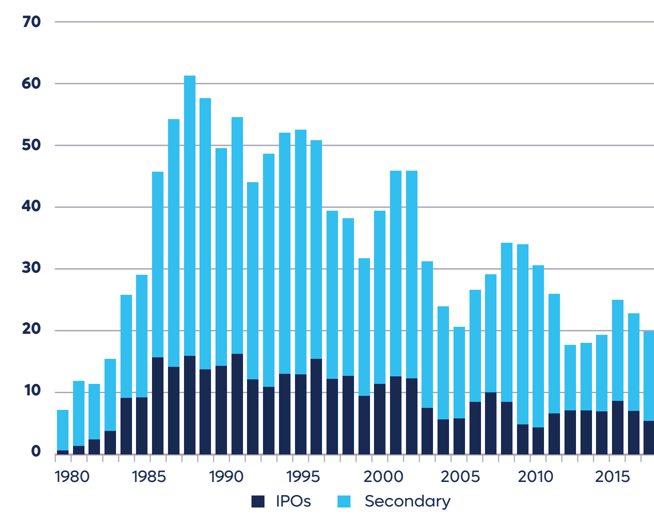
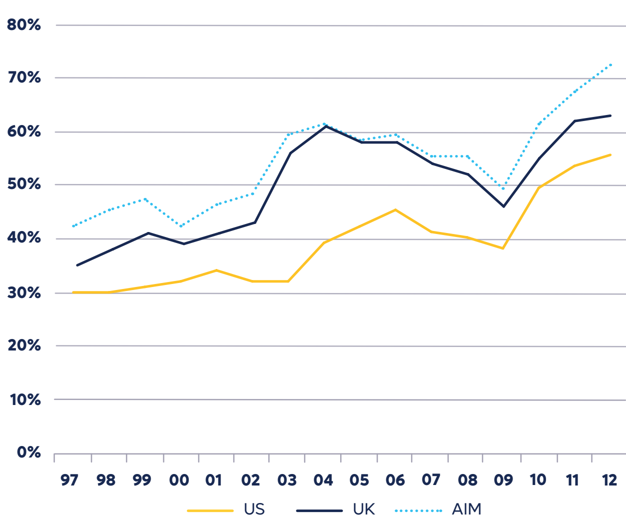


Fig. 12: Coming back for more
The % of companies listing in year X that raised additional capital in the following five years
Source: New Financial, Dealogic



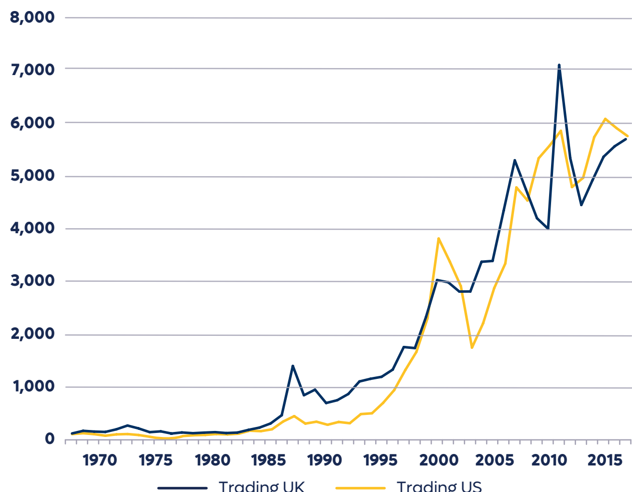
8) The surge in trading volumes

Perhaps the most striking change over the past few decades in the world of stock exchanges is that while the number of listed companies, new issues and capital raising have been shrinking, trading volumes have soared. In real terms, the value of trading in both the UK and US has increased by more than 50 times and is now 10 times higher relative to the combined value of listed companies than it was 50 years ago.

This development has been driven by a combination of deregulation, increased competition between exchanges, an IT arms race that has seen the shift from face-to-face trading on a stock exchange floor to ever-faster trading conducted by computers, the rise of index investing, and the huge growth in the pools of capital invested in stock markets. As this chart shows, this growth really took off in the mid-1980s in the US and the late 1990s in the UK, fuelled by the abolition of fixed commissions, the launch of electronic trading, and the introduction of central counterparties. Hedge funds and high frequency trading firms now account for around two thirds of the average daily trading volumes in the UK market, according to research by Prof John Kay at the London School of Economics.

This astonishing growth has brought many benefits: the cost of trading has collapsed with spreads (the difference between the price at which you can buy and sell a share) falling by more than 90% in little more than 20 years. Our analysis shows that the average spread on FTSE 100 stocks in 2018 was around five basis points (five one hundredths of a percent) compared with 24bps as recently as 2006 and more than 60bps in 1994 (before the introduction of electronic trading in the UK in 1997). In the US, spreads have fallen by a similar amount since the mid-1990s. Commissions paid to intermediaries have also tumbled. Online brokerage enables retail investors to buy or sell

Fig. 13: The growth of trading volumes
The value of trading in UK and US equities 1967 to 2017
(In real terms, rebased to 1967 = 100)
Source: Stock exchanges, Fidessa, S&P, SEC



shares for just a few dollars in commission today. The increase in trading volumes has made stock markets more liquid, more efficient, and more responsive which should in turn reduce the cost of capital for companies looking to raise money from them.

The rapid growth in trading has been concentrated in larger companies at the top end of the market and the cost benefits and efficiencies that have come with it have not been shared equally across the market. We think it has contributed to a bifurcation in the market into a hyper-efficient market for capital raising and trading at the top end, and a less efficient, less attractive and less active market for smaller companies.

The trading velocity (the annual value of trading as a percentage of the combined market value of listed companies) has more than tripled in the UK and US since the early 1990s to around 250%. It is interesting to note that the trading velocity for stock listed on AIM is only around 65%. This problem is reflected in trading volumes and analyst coverage: the proportion of listed companies in Europe where there is less than €100,000 of share trading a day rose from 48% before the financial crisis to 63% in 2015 (ESMA), and more than half of companies in the US with a market value of less than $100m have no analyst coverage of their stock.

The overall growth in trading raises a fundamental question about the purpose of stock exchanges. While secondary markets – the day-to-day trading – is an important part of a stock exchange's purpose, why has the massive growth in trading volumes not been reflected in the primary side of the business? Has trading become an end in itself? And has the purpose of stock exchanges gradually shifted over the past few decades from capital formation to trading?

9) The increased complexity of market structure

The increase in trading volumes has been accompanied by much greater complexity in the stock exchange industry and the ecosystem around it. Before 2008, virtually all trading in the UK was conducted by the London Stock Exchange. The introduction of Mifid, a package of EU-wide reforms, brought more competition and new trading venues and exchanges. Fast forward to 2017 and little more than half of trading volumes in companies listed on the London Stock Exchange is conducted on the London Stock Exchange itself.

In the US, this shift started a decade earlier and its impact has been more radical: today there are 13 stock exchanges in the US, with 11 of them owned and operated either by the New York Stock Exchange or Nasdaq, in addition to dozens of different trading venues of different types with confusing names and acronyms such as dark pools, MTFs or ATSs.

In many respects this competition is healthy – it has helped drive huge reductions in the cost of trading – but it has created a series of trade-offs between the depth of a market, competition between trading venues, speed, cost, fragmentation and volatility. It has also heightened the tension in balancing the interests of different market participants. In the context of this paper, it has also created a new breed of stock exchanges that do not list companies themselves (a fundamental part of capital formation) and instead exist solely to trade the shares of companies listed on other exchanges. This complexity and increase in scale may also have been a factor in shifting the attention of investors, intermediaries and exchanges themselves towards the larger end of the market and created a sense of dislocation and disconnect between listed companies and their investors.

10) An international patchwork

The structure of the industry becomes even more complex when you overlay it with national borders. In the US, market structure is relatively simple: two main exchanges (Nasdaq and the NYSE) compete for listings, trading in those stock is conducted on 13 different stock exchanges and alternative platforms, but all trading is cleared and settled through the same entity.

In contrast, in Europe the stock exchange industry is fragmented and hugely complicated. Our research shows that across 31 countries in Europe there are 20 different stock exchange operators who between them operate 34 different stock exchanges (many of which operate additional markets for small or growth companies). Trading on these exchanges is cleared through more than 20 central counterparties or clearing houses, and then settled in 21 different securities depositaries. This structure is a significant brake on growth – particularly in smaller markets. It fragments pools of capital and liquidity, reduces the efficiency of exchanges, and increases costs for companies and investors.

While significant progress has been made in terms of consolidation of stock exchanges (the London Stock Exchange also owns Borsa Italiana; Euronext operates the stock exchanges in France, the Netherlands, Belgium, Portugal and Ireland; and Nasdaq owns seven exchanges in the Nordic and Baltic region), there is significant scope for more consolidation and much closer harmonisation of trading rules and regulations in individual markets to help create a deeper 'European' market that would potentially be more attractive to issuers and investors alike.

11) A shift in the type of seller

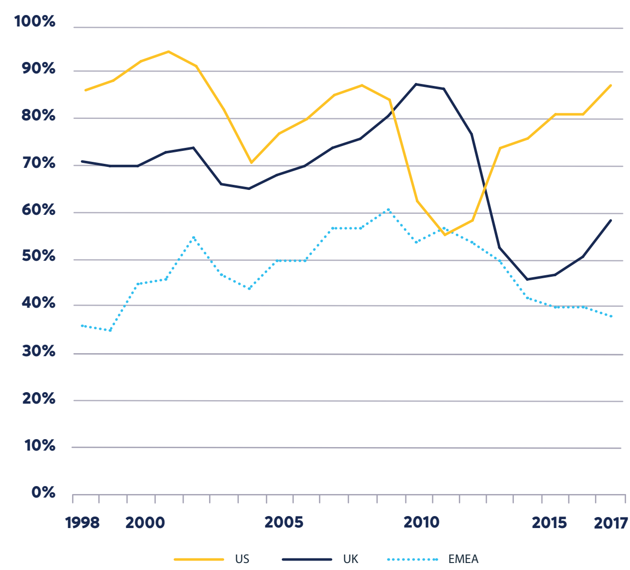
In the past decade there has also been a significant shift in terms of how companies use the new issue market. Companies list on stock exchanges for lots of different reasons (including to raise capital, to raise their status and profile, to offer employees a market in the shares, a currency to make acquisitions, or to provide existing shareholders with an exit). One of the less noted trends in the new issue market over the past decade has been the decrease in the use of the IPO market for companies to raise capital to invest in their business. This raises a fundamental question about the purpose of the new issue market, posed by the Norwegian petroleum fund in a report in 2015: 'are IPOs for cashing out or for raising capital?'

In the US, just under 90% of the value of shares sold when companies went public in the three years to 2017 were new shares issued by the company to raise capital to invest in its business. But in the UK, the equivalent figure was 58%: in other words, more than 40% of the value of new issues is accounted for by existing shareholders selling down their shareholding or cashing out.

This seems to be a problem for three types of IPOs: European IPOs, larger UK IPOs and private equity backed IPOs. Less than half of the value of UK IPOs that have been brought to market by private equity firms over the past 20 years has been to raise capital. This is a potential problem given that private equity firms accounted for over half of all IPOs in the UK by value over the past five years.

In the US, some big technology companies such as Spotify and Slack have decided not to raise any new money at all when they go public by instead opting for a direct listing. There is some evidence that IPOs that involve lower levels of new shares being sold perform worse after a company has gone public than other new issues. How stock exchanges and investors react to this development will be a big factor in the equity market in the next few years.

Fig. 14: Cashing out?
The proportion of shares in UK IPOs that are new shares %, rolling three year average
Source: New Financial, Dealogic



12) Staying private for longer

The sharp decline in the number of new issues and the amount of money they have raised has been accompanied by a significant shift in the age of companies when they first come to the market. Between 1990 and 2001 in the US, the average age of company listings in the US was just four and a half years, but since then this has more than doubled to 10 years (LTSE paper). One of the mantras in Silicon Valley is to 'stay private for longer' for several reasons: companies can access large amounts of private capital; they don't want the scrutiny of being a public company in their early development; and they want to avoid the high costs and perceived burden of going public.

This means that many investors in public equity markets are potentially missing out on the early and rapid growth that smaller companies - particularly technology companies - might generate and that listed companies are on average getting older and less dynamic. (Investing in private capital is mainly restricted to wealthy individuals and people lucky enough to be part of a defined benefit pension scheme).

A quick look at the FAANGs (Facebook, Amazon, Apple, Netflix and Google) highlights how some of the most successful technology companies in the world today accessed public equity markets when they were still very young: in contrast, Uber, the taxi hailing service that went public last month was 10 years old in March.

Fig. 15: Early to market
The age and growth of selected US technology companies
Source: New Financial

Company	Founded	IPO	Age at IPO	Market cap at IPO	Market cap now	Multiple (in real terms)
Facebook	2004	2012	8	$104bn	$424bn	3.7
amazon	1994	1997	<3	$438m	$823bn	1193
Apple	1976	1980	4	$1.35bn	$732bn	178
NETFLIX	1997	2002	4	$309m	$153bn	312
Google	1998	2004	6	$23bn	$754bn	21

13) An increase in short-termism

One of the main complaints of listed companies over the past decade is that public equity markets have become more short-term in their outlook. There are lots of factors at play, including: the increase in disclosure requirements for listed companies; the growth of investors and traders with a shorter time horizon such as 'high frequency traders' and hedge funds who between them account for around two thirds of daily trading volumes on the stock exchange (according to the report for the UK government on UK equity markets by Prof John Kay in 2012) ; greater media scrutiny; increased turnover in investment portfolios; and the increased power of investment consultants to pick and choose asset managers.

This places enormous pressure on companies (and others in the chain such as asset managers) to deliver in the short-term and hit their quarterly numbers. As a measure of the short-term pressures on companies from all sides, research by the CFA Institute found that 80% of companies would reduce discretionary spending (including R&D) in order to hit their quarterly earnings targets and more than half knowingly defer valuable long-term projects to meet short- term targets.

Research by an industry initiative called Focusing Capital on the Long-term (FCLT) in 2016 found that two thirds of companies in Europe and the US thought that short-term pressure had increased in the previous five years. And since the 1970s the average tenure of CEOs of companies in the S&P500 has more than halved to less than five years.

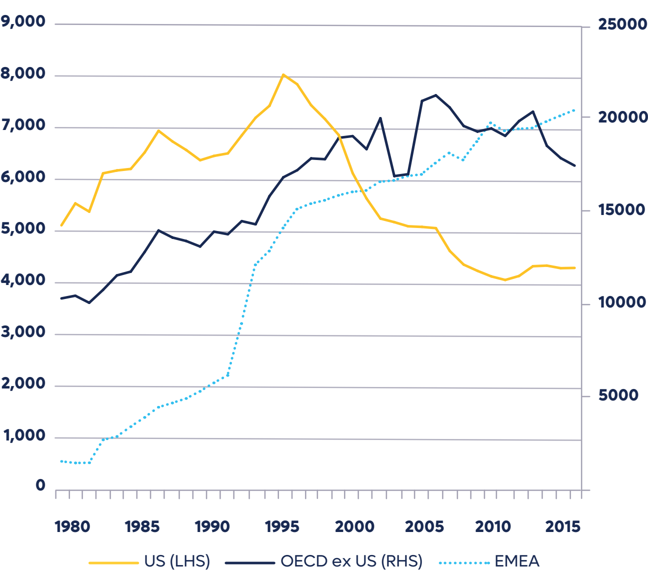
This short-termism can make life harder for listed companies trying to build a business over the long-term – and make listing on stock exchanges or staying listed less attractive. While Netflix is a good example of a company that has thrived on the stock market, it is also a good example of the short-term pressures on the company. Fig. 16 shows the change in the share price in Netflix on the day after it announced its quarterly results from 2009 to 2016. While its share price increased rapidly over this period, its senior executives echo the views of many technology companies when they argue that it is hard to focus on building a business for the long-term when the stock price is so volatile in the short-term.

Fig. 16: A bumpy road
Change in Netflix share price the day after its quarterly results 2009 to 2016
Source: LTSE, S&P Capital IQ

14) A developed markets problem

This report has so far focused mainly on the UK and US, but the global picture for stock exchanges shows an altogether more encouraging picture. Since 1996, the number of listed domestic companies has roughly halved in London and New York, but in developing economies outside the US it has increased by nearly 50%.

Fig. 17: The global shift in listed companies
The number listed companies globally from 1980 to 2017
Source: World Bank



These countries have added more than 6,000 listed companies in the past 20 years, more than offsetting the decline in some developed markets. In China, for example, the number of listed companies has increased 10-fold since 1995 to around 3,500 and the Chinese market is likely to overtake the US in terms of listed companies in the next few years. Overall, stock markets in emerging markets are less than half as large relative to GDP as in developed markets, suggesting there is still plenty of scope for further growth.

In developed markets, the picture is more mixed. Along with the UK, the number of listed companies has been shrinking in France, Germany, the Netherlands and Switzerland, but growing in Australia, Canada and Japan (which have both benefited from launching successful growth company markets).

Virtually all major markets have seen the same trend of significant increases in the value of listed companies relative to GDP and a surge in trading relative to market value. For example, in France the value of listed companies has increased 14 times relative to GDP since 1980 and trading volumes have jumped nearly seven times relative to the market value. One potential danger is that global capital markets tend to take their lead from the US: if the trend over the past few decades in the US continues, this could have a knock-on effect on stock exchanges around the world.

15) Smaller companies bouncing back

While smaller companies have been hard hit by the decline in listings and new issues, in some respects smaller companies are thriving on stock exchanges around the world. Exchanges have launched more than 50 dedicated markets for smaller companies in the past 25 years and we estimate that there are around 9,000 companies listed on them (nearly a quarter of the total number of global listed companies). Many of these markets are modelled on either Nasdaq, which was launched in 1971, or AIM, launched by the London Stock Exchange in 1995, and they all have less onerous listings requirements to encourage smaller companies to use them as a means of raising capital.

In many countries, smaller company and growth markets have outgrown their parents in terms of the number of listed companies. There are more than twice as many domestic companies listed on the TSX Venture market set up by the Toronto Stock Exchange in 1999 than are listed on the main market, which has shrunk over the past few decades.

In the UK, there were just over 800 domestic companies listed on AIM at the end of 2017, not far short of the 942 listed on the main market. However, the combined value of all the stocks listed on AIM was about the same as the value of BP, and annual trading volumes on AIM are just over 1% of the total value of trading across the market.

Fig. 18: The largest growth / SME stock exchanges
Ranked by number of listed companies
Source: World Federation of Exchanges, New Financial analysis

Name of SME / growth market	Name of main exchange	Country	Year launched	No. of domestic listed companies	Market cap $bn
TSX Venture	TMX Group	Canada	1999	1,980	43
Kosdaq	Korea Exchange	Korea	1996	1,267	265
AIM*	London Stock Exchange Group	UK	1995	903	131
Jasdaq	Japan Exchange Group	Japan	2010	749	101
ChiNext	Shenzhen Stock Exchange	China	2009	710	787
New Connect	GPW (Warsaw Stock Exchange)	Poland	2007	401	3
Euronext Growth / Access**	Euronext	France +	2006	367	25
GEM	Hong Kong Exchanges and Clearing	Hong Kong	1999	324	36
First North***	Nasdaq Nordic Exchanges	Sweden +	2006	318	19
Mothers	Japan Exchange Group	Japan	1999	248	47

* AIM includes AIM Italia (95 companies and $6.3bn market cap at the end of 2017)
** Euronext includes markets in France, Belgium, the Netherlands and Portugal, and was initially launched as Alternext in 2006
*** Nasdaq First North includes markets in Sweden, Denmark, Finland and the Baltics

What is driving this?

This section analyses some of the main factors behind the significant changes we have seen in the stock exchange landscape over the past 50 years. There is no single factor that explains the decline of listed companies and new issues over the past 25 years, and we have grouped some of the potential causes under three main themes:

i) the availability of alternative sources of capital

ii) the cost and burden of being a listed company; and

iii) structural changes in the finance industry.

It is worth noting two important points before looking at the causes of the decline in public equity markets. First, the bigger question should be whether the decline in new issues means that there is a shortage of available growth capital for high-growth potential companies – and the answer is clearly no. One study in the US found that three quarters of the 'funding gap' in the IPO market over the past 25 years has been filled by additional venture capital funding since 1996. One way of framing the trend of the decline in listings and new issues over the past 10 or 20 years is that companies have a far wider range of potential financing options than they used to. This greater range of funding options also translates into a wider range of investable assets for pension funds and other investors.

And second, one of the main reasons why companies are using stock exchange less to raise less capital is that they don't need to. At one end of the spectrum, larger companies have less need to use equity markets to raise capital because they already have more cash than they know what to do with. And at the other, not only do companies have a wider range of sources of funding than they used to, but they need less capital. Over the past 20 years the nature of the economy has shifted away from a reliance on fixed assets – such as machinery, factories, and buildings – towards intangible assets such as design, branding, software and R&D (a good analysis of this shift is the recent book Capitalism Without Capital). This shift has significantly reduced the cost of setting up and building a company.

1) The availability of alternative sources of capital

One of the main reasons why fewer companies are choosing to raise capital on stock exchanges is the rapid growth over the past 25 years in alternative sources of funding. Venture capital has provided much of the growth financing for high potential companies, private equity has provided an attractive and well-funded alternative to being listed for larger companies, corporate bonds have offered a low cost and tax-efficient source of funding, and selling to more established companies has become a quicker route to growth than going public.

I) The growth in venture capital

The growth in venture capital funding over the past 25 years has reduced the need for many high-growth firms to raise money in the equity market. In the US annual venture capital funding has more than tripled in the past decade to more than $60bn in 2017 (nearly three times the amount of money raised by IPOs). This has enabled firms with venture capital backing to stay private for longer and come to the stock exchange later if at all.

In 1996 – the peak year for US IPOs – the median amount of money raised privately by companies before they listed was just $20m in today's money, the median age of companies going public was just over three years, and the IPO market accounted for 20% of exits by venture capital investors. Fast forward to 2017, and the average company had raised five times more money ($98m) before going public, was more than twice as old (around seven years) and just 4% of all venture capital exits involved an IPO, according to data from US law firm Wilmer Hale.

Around the world, there are now nearly 400 'unicorns' (privately-held companies with an estimated valuation of more than $1bn). In 2013 when the term was first coined by Techcrunch there were 19. Virtually all these unicorns are reliant on venture capital and their rapid growth has been captured by a small number of investors in venture capital firms.

Perhaps perversely, well-intended regulation in the US designed to encourage funding for start-ups and growth companies has boosted private capital and undermined stock exchanges in attracting new issues. In 1996 the National Securities Markets Improvement Act significantly expanded the ability of companies to raise capital from private investors and made it easier to sell securities to 'qualified investors' (either institutions or wealthy individuals). Since 1996 the real value of capital raised by new listings in the US has fallen by just over $40bn, but more than three quarters of this gap has been filled by companies that have raised venture capital funding four or more years after they first received backing (Harvard / NBER). This would usually be about the time that companies backed by venture capital would seek additional funding from the stock market.

More recently, the introduction of the JOBS Act in 2012 (Jumpstart Our Business Start-ups Act) reduced the listings requirements and burden of disclosure on smaller companies for up to five years after they listed, and more than 80% of all new issues in the US since then have taken advantage of this lighter-touch regime. But at the same time, it further expanded the ability of companies to raise capital privately. Before 2012, privately held companies with more than 499 shareholders (including employees) had to file limited financial statements with the SEC. The JOBS Act increased this threshold to 2,000 and removed many employees from the count, which has arguably made it more attractive to stay private for longer.

ii) The role of private equity

The private equity industry has grown rapidly around the world over the past few decades and the total value of its assets under management in the UK has tripled in real terms since 2000. The model involves raising a fund from investors; using the fund to buy companies – often financed with significant amount of debt; taking a hands-on role in running those companies, often involving significant restructuring of the business and its balance sheet, and frequently involving buy-and-build acquisitions; before selling the company on five to seven years later to a trade buyer, another private equity firm or back to the stock market.

Fig. 19: The growth in private equity in the UK
Assets under management in real terms 2000 to 2016, $bn
Source: Preqin

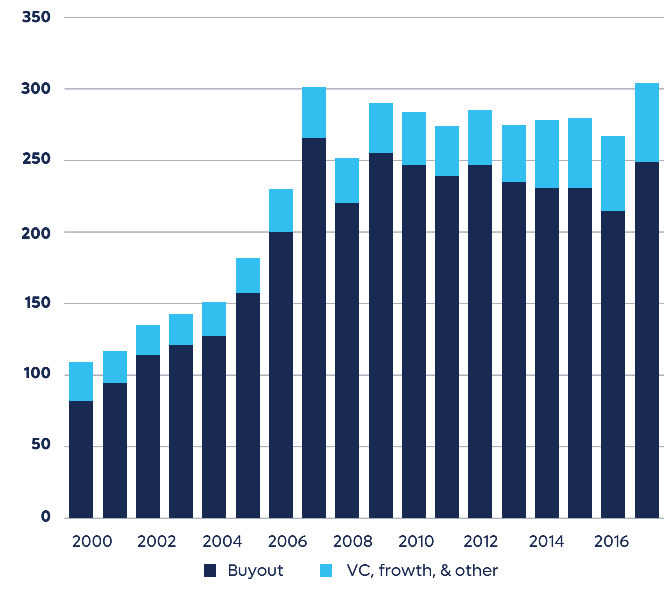
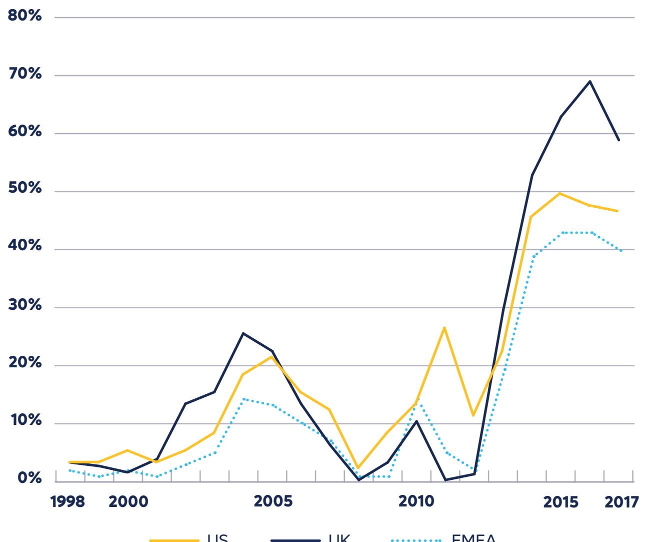


Fig. 20: A tighter grip
% of IPOs by value involving in a private equity or VC seller
Source: Dealogic, New Financial (rolling three-year average)

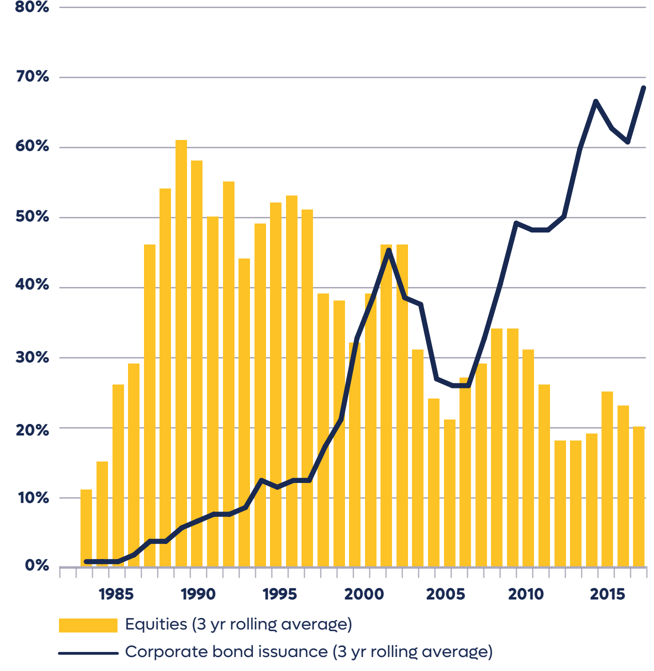


Private equity has a direct impact on listed companies and new issues in several ways.

- Buyout firms are prolific acquirers of companies, which removes listed companies from the stock market and prevents or delays privately-held companies from listing on it. Private equity firms acquired more than 2,300 companies (or significant stakes in companies) with a combined value of well over £250bn in the UK in the five years to 2017 according to Dealogic, including nearly 150 listed firms.
- Private equity funds have tended to generate higher returns for investors than investing in public equity markets, even after high fees that often run to 2% of assets under management and 20% of any profits. This performance has made private equity an attractive asset class relative for many asset owners such as pension funds. However, there are some signs that this performance differential is narrowing under the weight of money being invested in private equity.
- Lower levels of disclosure and public scrutiny for private equity-backed companies, combined with the high rewards for executives running the underlying companies, have attracted more companies to go private and arguably drained some of the best talent from publicly-listed companies.
- When private equity firms exit an investment, less than 5% of all deals involve an IPO, which reduces the supply of potential new listings. The most common exit is via a trade sale (often to listed companies), with a secondary sale to another private equity firm in second, well ahead of listing on the stock exchange. We estimate that one third of the largest privately-owned companies in the UK (as measured by the annual Fast Track 100 and Top Track 250 rankings) are owned entirely or in part by private equity firms, which is likely to reduce the future supply of IPOs in the UK.
- And fifth, while the IPO market is not a particularly important market for private equity firms, private equity is vitally important to the IPO market. Since the financial crisis the proportion of new issues in the UK, US and Europe that involve a private equity firm selling all or part of its stake in a company has soared from less than 20% to 50% or more. These IPOs tend to involve a lower proportion of new shares to raise capital (and when they do raise capital often a large part of that is to pay down debt that was built up under private equity ownership). Over the past 15 years there have been a number of high-profile examples of private equity-backed IPOs that have performed poorly after listing.

iii) Borrowing on the cheap

Fig. 21: Running away with it
Corporate bond & equity issuance by UK companies 1980 to 2017, £bn in real terms Source: Dealogic



Over the past few decades, the amount of money raised in the corporate bond market around the world has surged, fuelled by an unusually long period of abnormally-low interest rates, and the tax advantages of debt funding over equity. This rapid growth has provided companies with a cheap alternative source of funding that involves much less onerous public disclosure requirements than listing.

In 1997, UK companies used the stock exchange to raise £39bn in today's money, more than twice as much as the £18bn they raised in the bond market. By 1999 bonds raised more than equities for the first time and since then have raised more money in every year except 2002. In 2017, UK companies raised £71bn in corporate bonds, more than three times as much as they raised in equity. More than three quarters of companies in the FTSE 100 have issued a corporate bond in the past five years, but only a quarter of them have used their listing to raise additional capital from equity markets, according to our analysis of data from Dealogic.

This surge has been helped by the unfair advantages built into debt financing which make equity more expensive: the differential tax treatment of debt and equity. If a company issues a corporate bond, the interest payments that it makes are tax deductible (in other words they can be used to reduce a company's taxable profits). Meanwhile, equity is effectively taxed four times: shares are taxed with stamp duty when they are traded, investors pay taxes on the dividends they receive from companies, and they also pay tax on the capital gains they make from their investors, and companies pay tax on their profits.

This is one reason why many private-equity backed companies pay relatively little in corporation tax, because the interest on the additional debt that is used to finance them is offset against tax. The combination of low interest rates and clear tax advantages of debt funding make equity a relatively inefficient form of funding for many companies. One market veteran described this differential tax treatment recently as 'like trying to drive with one foot on the accelerator and another on the brake at the same time'.

iv) Flush with cash

One reason why companies are raising less money in the equity markets is that they already have more cash than they know what to deal with. Since the mid-1990s, the profitability of large companies has increased rapidly and so has the amount of cash that they generate. US companies have more than $2 trillion in cash on their balance sheets – or more than 10 times the total amount of capital raised in the equity market in 2017 – and across a sample of more than 750 European companies, cash piles have increased by a fifth since 2011 to just over $1tn, according to Moody's. This excess cash has helped drive the surge in buybacks that suck underlying equity out of the market as companies have come under pressure to return cash to shareholders.

v) Economies of scope

It's not just that companies don't need the money from equity markets. One theory is that the 'economies of scope' in the business world started to change in the early 1990s. Larger companies became structurally more profitable while smaller companies became less profitable and found it harder to break out of being small. While it has become far cheaper to set up a company, it has become more difficult to make it grow. For every Facebook and Amazon, there are hundreds of companies with similar ideas and business models that didn't make it. On this thesis, getting big fast is at a premium. Research by Vanguard shows that most very small companies that list in the US are still very small five years later or have delisted – either because they have been acquired or gone bust.

The number of companies being acquired within three years of listing has been rising steadily since the 1990s, perhaps as a means of bigger companies taking out potential competitors or short-circuiting R&D and product development. This wider economic shift may help explain why many start-ups see their natural exit as 'sell to Google' rather than to list on the stock exchange. Since 2000, the big four tech companies (Amazon, Apple, Facebook and Google have acquired more than 450 companies between them), almost all of which were privately held and may otherwise have been future candidates to become listed companies.

2) The cost and burden of being a listed company

Listing has many advantages: it enables firms to access the deepest available pool of investors to raise capital, gives them a currency to help fund future acquisitions, raises their profile and status, enables shareholders and employees to realise their investment, and it improves operational and governance standards within a company. However, the cost and perceived burden of being listed has gone up over the past few decades: more disclosure, more corporate governance rules, more public scrutiny, and the high cost of listing in the first place all add up to a perceived increase in overall burden of being listed.

i) Has governance and disclosure reached a tipping point?

The most frequently cited argument for why many companies are turning their back on the stock market is the growing burden of regulation, disclosure and corporate governance. There is an inevitable disconnect at listed companies from the separation of ownership and management: addressing this agency effect requires a regular stream of disclosure, high-quality listings standards, and strong corporate governance frameworks to ensure that investors have the right information to inform their investment decisions.

However, many companies and investors believe that the pendulum may have swung too far: companies have to disclose huge amounts of information that very few people will ever read, the bodies that set these standards sometimes seem to be seeking to eliminate risk in the name of investor protection, and division of responsibility between company management and shareholders is becoming increasingly blurred.

Any set of standards that is designed to apply to thousands of companies involves a trade-off between flexibility and consistency, but over the years more rules and requirements have been layered on top of each other. Over the past 25 years in the UK, there have been more reports and codes on corporate governance for listed companies than there have been Prime Ministers (from the Cadbury Report in 1992; the Greenbury Report in 1995; the Hampel Report in 1995; the Combined Code in 2000; the Higgs Review in 2003; the Walker Review in 2009; the Stewardship Code in 2010; and the revised Corporate Governance Code that took effect this year).

In the US, the biggest change in the past 20 years was the introduction of Sarbanes-Oxley, in 2002, in response to the dotcom and the scandals of Enron and Worldcom, which significantly tightened disclosure, and which is widely cited as being a significant factor in the reduced attractiveness of being a public company.

The concrete impact on companies has been a big increase in the volume and cost of annual and quarterly reporting. The average word count in US annual reports has more than doubled from 23,000 in 1996 to around 50,000 in 2014 (Schroders) and the number of pages in the annual reports of a selection of FTSE 100 companies has increased by between 40% and 60% over the same period. The quarterly reports of large companies can run to over 100 pages, several times longer than the annual reports of large privately-held companies. Meanwhile, shareholders have far more power today than 25 years ago, and in many countries have binding votes on issues such as executive pay, appointing or deselecting directors, and adding items to the agenda for a company's annual shareholders meeting.

One issue is that much of this regulation and disclosure appears to have been designed with the good intentions of protecting individual investors. However, retail investors directly own just 11% of the UK stock market (and most retail investors with direct holdings of individual stocks will tend to be sophisticated investors). This raises the concern that the regulation is being designed with one particular group of investors in mind, and that the tail could be wagging the dog.

While exchanges have been careful to reduce the burden of reporting and disclosure on smaller companies (for example, after a review in 2007, smaller companies in the US were exempted from large parts of Sarbanes-Oxley) it is hard to avoid the fact that listed companies have to disclose far more and open themselves up to far greater scrutiny of short-term changes in their business than their privately-held peers.

On the other hand, if increased regulation were the main cause of the slowdown in new issues, you would expect that to be more clearly reflected in the data. The structural decline in public equity markets set in many years before the burden on listed companies became a significant issue. There is no apparent slowdown in the flow of US IPOs or uptick in delistings after the introduction of Sarbanes-Oxley in 2002, no apparent rebound in smaller company IPOs after they were exempted from large parts of the reforms in 2007, and there has been no apparent slowdown in new issues or increase in delistings in the UK over the past decade when disclosure and governance requirements are perceived to have gone too far.

ii) An expensive option

While there are many benefits to listing, it is not a cheap or easy option. The median all-in cost on IPOs in the US in 2017 was just over 10% of the amount raised, according to a study by law firm Wilmer Hale. The median fee paid to the banks arranging the IPO was 7% and additional legal, listing and accounting fees added up to another 3.1%. Those numbers exclude the huge amount of management time over many months spent preparing for the IPO and pitching to investors on the roadshow.

This is more than double the cost of a listing in Europe, which in turn is roughly double the cost of doing a bond issue (although the upfront costs of listings open the door to raising additional capital at a lower cost in future). For smaller companies, the cost is higher: the all-in cost of listing on AIM is around 9% of the money raised, according to research by accountancy firm UHY Hacker Young. Listing fees charged by exchanges are only a small proportion of this total.

Fees in the US have been remarkably stubborn: between 2001 and 2016, 97% of companies that raised less than $100m paid exactly 7.0%, as did half of companies that raised more than $100m, according to research by Jay Ritter. Our analysis shows that the average fee on European IPOs is around 3%, with the average in the US and Asia closer to 6%. Over the past 20 years, despite the improvements in technology and huge increases in liquidity, these fees have remained relatively constant.

The bigger cost for companies is what is known as the money left on the table. In order to attract investors to buy into an IPO, banks tend to price the shares at a discount to their 'fully distributed' market value (this reflects the 'liquidity risk premium' that is a core part of the function of public equity markets). One way of looking at the returns made on day one for investors is that it represents money that companies have 'left on the table'. Since 1980, the weighted average first day return on IPOs in the US has been 18%, according to research by US academic Jay Ritter. This means that in real terms more than $220bn has been left on the table by companies for investors out of the $1.2 trillion in capital they raised. Of course, investors require a discount in exchange for the risk of investing an IPO. If you assume that discount translates into an average 10% increase on the first day of trading, the money left on the table is about $125bn.

This all adds up. If a company wants to raise $100m, it will pay around $10m in fees and then another $8m in money left on the table for investors. These costs are one of the main reasons why some large companies such as Swedish music-streaming firm Spotify have opted instead for direct listings, which don't raise capital but transfer shares from their private ownership to public markets.

One argument for the high initial cost of a listing is that it opens the door to being able to raise additional capital in the equity in future at a relatively low cost. Around half of all companies that go public raise more money within five years, and the cost of follow-on issues is around half the cost of an IPO. However, the cost of a follow-on issue is around the same as the all-in cost of doing a bond issue.

iii) In the public eye

Quite apart from the big increases in regulation and disclosure over the past few decades, listed companies today face far more scrutiny from the media and an increasingly mistrustful public. Social media and rolling 24-hour news have fuelled a relentless appetite for news - particularly bad news. Big losses, 'fat cat pay', and corporate scandals are amplified and broadcast far more widely than before. It may not be a coincidence that many of the concerns over short-termism, increased disclosure and governance have occurred in the period since CNBC, the first dedicated rolling news channel for business news, launched in 1989. While this increased scrutiny has brought greater transparency to investors, with so much information about listed companies now in the public domain it has made life uncomfortable for listed companies and their management. Privately held companies are not immune to this scrutiny, but they are in part shielded from it.

At the same time, particularly in the UK and Europe, the wider public approach to risk, return and reward has not been a supportive environment for stock exchanges. The first official 'fat cat' back in 1995 was Cedric Brown, the then chief executive of the privatised British Gas, when it was revealed that he had been paid more than £1m. When a company gets into trouble, tall poppy syndrome kicks in and one of the first instincts in the UK is to turn on the chief executive (as with the recent examples of Jamie Oliver's restaurant chain or the accounting problems at Luke Johnson's café group). And if a company goes public and then subsequently fails it is widely treated a shameful failure rather than a brave attempt. This overall suspicion of business has been compounded by the financial crisis and has morphed into a wider 'crisis of capitalism' over the past few years.

3) Structural shifts in the finance industry

Financial markets and the finance industry have been transformed over the past few decades. Virtually every corner of the market is bigger and more complex than it used to be. While this growth has brought many advantages in terms of lower costs and greater competition it raises a fundamental question as to whether this increase in scale and complexity has led to a bifurcation between the larger end of the market and smaller companies and the ecosystem supporting them.

i) Equity market performance

One of the main benefits of investing in equity is that shareholders share in the growth of successful companies. The downside is that they lose money – sometimes all of it – when companies are less successful. A big challenge for public equity markets has been overcoming the perception among investors (particularly retail investors) that stocks aren't worth the risk. The long-run performance of the FTSE 100 highlights this problem: on New Year's Eve in 2018 it closed around 1% lower than its record high set on New Year's Eve in 1999 nearly 20 years earlier (although in theory if you had reinvested all your dividends tax free you would have made a return of 94%). The AIM All Share index is roughly where it was when it launched and has roughly halved from its highs in 1999 (although you would have tripled your money if you were brave enough to invest in it in 2009).

At a wider level, there is increasing evidence that the vast majority of stock market performance comes from a small minority of companies: 70% of stocks in the S&P500 in the past 20 years have underperformed the index itself, and in 2017, roughly 80% of the growth in the S&P came from just 50 stocks and nearly half of its return from just 10 stocks. The vast majority of companies in the Russell 3000 index in the US underperformed the index between 1980 and 2014, according to analysis by JP Morgan Asset Management, with most of the performance coming from just 7% of stocks.

While equities have historically outperformed as an asset class over long periods, this concentration of performance in a small number of stocks in any given index make it harder to attract investors to the equity market, let alone to investing in individual stocks or new issues. The unpredictability and cost of investing in individual stocks has been a big factor in encouraging the growth of passive or index investing, which now accounts for around one fifth of all funds invested in equities. This problem is particularly acute in parts of Europe, where retail investors are still suspicious of investing in equities because they had their fingers badly burned in the dotcom crash nearly 20 years ago.

ii) The performance of IPOs

There is growing evidence that investing in individual IPOs is a tough way to make money. If you had bought every IPO in the US from 1980 to 2015 and held them for three years, you would have made an average return in each cohort of 21%. That sounds great, but it's 18% below what you would have made if you had spent the same money investing in the index on the same day, according to analysis by US academic Jay Ritter.

The first day of trading has been a more reliable way of making money on IPOs: over the past decade, the weighted average first day return on IPOs in the UK has been 6% and nearly 12% in the US – though in both cases that performance is around a third lower than the average in the decade before the crisis, according to our analysis of data from Dealogic. The weighted average performance of new issues in the first six months is around 6% in the UK and 13% in the US.

However, most investors can't buy shares in new issues at the start of trading, so a better measure is the return between the first day close and six months later. In the US, you would have made about 1% using this strategy and in the UK you would have lost money over the past decade. Nine out of 10 IPOs in the UK in the past 20 years have increased in value on their first day, but one in three falls below their issue price within six months, and you have a 50/50 chance that a company will be trading higher after six months than it was at the end of its first day.

Getting your hands on shares in an IPO is difficult. Given the uncertainty over future returns, the amount of time and effort to analyse a company planning a new listing may not be a wise allocation of resources, particularly given the fact that most investors rarely get the allocation of shares that they ask for in an IPO. Research in 2016 by a former investment banker now at Said Business School in Oxford showed that investment banks systematically reward investors with whom they have a good existing business relationship in terms of sales and trading with higher allocations of shares in IPOs.

iii) The changing economics of broking

The ecosystem around stock exchanges has also been transformed over the past 25 years by technology and regulation, and the economics of broking and investment banking at the smaller end of the market has been undermined. This has reduced the number of firms that focus specifically on smaller companies and has left many firms with little or no research coverage to help stimulate investor interest. The number of Nomads – specialist brokers and advisers who focus on the AIM market in the UK has fallen by 30% in the past five years, and in the US the number of different investment banks that worked on small company IPOs dropped from 167 in 1994 to just 39 by 2006 according to research by David Weild, the former vice chairman of Nasdaq.

He argues that shifts in market regulation have had a far bigger impact on smaller companies than increases in disclosure and governance standards for listed companies. For example, before 1997, US stocks were quoted in fractions with a minimum of 1/8th (so a stock could be priced at $10.125 or $10.250, but not $10.19 or $10.22). This meant that brokers specialising in smaller companies could always make a living from trading shares with these artificially wide spreads. Decimalisation was introduced across the market in 2001, reducing the 'tick size' from 12.5 cents to one cent, and significantly reducing the profitability (and economic incentives) of dealing in smaller companies.

At the larger end of the market, this compression in margins was offset by a massive increase in volumes, which accelerated in 2008 with the introduction of regulations that required brokers to route every order to the market offering the best price at that time. But this increase in volumes has not been shared across the market. One estimate suggests that more than half of all companies in the US with a market value of less than $100m have no analysts at investment banks or broking firms covering their stock, because the low levels of trading and low levels of interest from investors make it uneconomic to do so.

A similar effect is underway in Europe where the economics of smaller company broking are forcing many firms to shift their focus 'upmarket' towards larger companies, morph into wealth management firms rather than stockbrokers, or to drop out of the market altogether. EU-wide regulation is often cited as the main driver, particularly Mifid 2. Many smaller company specialists complain that the rules have been designed for big investment banks who can afford the additional compliance costs which can be enough to force smaller firms out of business.

For example, the separation of trading and research costs under Mifid 2 (known as unbundling) require investors to now pay cash for equity research. While many are prepared to pay for research on larger companies (which account for the majority of trading volumes) fewer investors are willing to do so for smaller company research.

The economics of smaller company stockbroking and investing have long been a challenge: 20 years ago research firms and investors were complaining about the low levels of analyst coverage and low trading volumes in smaller stocks, but virtually every major trend in markets over the past few decades – the shift to electronic trading, tighter regulation of markets, tougher governance standards for listed companies, the increase in scale of investors – have exacerbated the problem. While the decline in (artificially high) profits of broking firms is unlikely to generate much sympathy, it has clearly had an impact on the ecosystem around smaller companies listing on the stock exchange and the flow of smaller companies listing on stock exchanges.

iv) The changing dynamics of investors

Investors in listed companies have also faced dramatic changes in their business model and in regulation over the past few decades, which have reduced their overall interest in listed companies and in smaller companies in particular. One of the biggest changes has been the sharp drop in asset allocation by UK pensions funds and insurance companies to UK equities. As recently as the mid-1990s UK pensions funds allocated just under half of their assets to UK equities, but this has fallen to less than 15%. And UK insurance companies have less than 5% of the asset allocated to UK equities, roughly half what they had 10 years ago. Another way of looking at this shift is that in 1991, UK insurance companies and pensions funds owned just over half of the UK stock market between them, but today they only own about one fifth of the market. This has sucked a lot of natural demand out of the equity market, and their place has been taken by overseas investors who now own more than half of UK equities.

Some of this wholesale shift is a result of the maturity of the UK pensions system and shifting demographics: as a greater proportion of pension scheme members approach and reach retirement, the asset allocation of pension schemes will shift towards bonds with a more predictable return. But regulation and accounting treatment of pensions has also played a role, by encouraging companies to invest in more predictable assets that more closely match the likely increase in their future pensions liabilities.

More recently Solvency 2, an EU-wide set of regulations for insurance companies, has increased the amount of capital that insurance companies must hold against riskier assets, reducing the appeal of equities. Other changes such as the introduction of the Pensions Regulator and the vastly increased volume and complexity of pensions law have made investing in bonds a safer and cheaper option.

At the same time, the asset management industry has been transformed: it is far bigger, more concentrated and more profitable than ever. There are more than £6 trillion of assets under management in the UK and the 10 largest asset management firms account for more than 40% of the market. Larger asset management firms running larger individual funds are less likely to be interested in smaller companies, and many firms have a minimum value for companies in which they can invest. The rise of passive investing, which now accounts for around one fifth of all money invested in public equity markets, has also played a role in the decline of the new issue market: passive funds don't buy into individual new issues and only include them once they are included in an index. The recent backlash against 'closet-tracking' and 'lazy active management, in which asset managers have such large portfolios that they mirror passive performance but charge active fees, has also reduced the levels of demand for new issues.

The spread of modern portfolio theory has turned asset management into a relative game where the performance of funds is measured relative to each other, and business is won and lost based on decisions by increasingly powerful investment consultants over shorter timeframes. The increased short-term pressures on asset managers seem to be encouraging them to apply increased short-term pressure on the companies in which they invest.

v) The business model of exchanges

One of the most challenging questions for stock exchanges when you look at the paradox of stock exchanges over the past few decades is whether they have been in part responsible for it. While the basic function of exchanges has remained largely unchanged for decades, the industry itself is almost unrecognisable from as recently as 25 years. Stock exchanges have traditionally been mutually-owned by their members but starting in the early 1990s they began to demutualise (the Stockholm exchange went first in 1993). Since then virtually every stock exchange around the world that can has not only demutualised to become a for-profit company but also listed on their own market. As such they face all the scrutiny and short-term pressures faced by all listed companies that we have outlined in this paper.

Stock exchanges have been very successful as businesses since they have listed. The value of the London Stock Exchange Group has increased nearly 10-fold since it listed in 2000 and the value of the Australian Stock Exchange, CME Group and Hong Kong Exchange have all grown by more over roughly the same time frame. Only two of the 18 listed exchange groups that we analysed have seen their shares fall since they went public, and the average annual share price growth has been in the mid-teens for most exchanges over the past 15 to 20 years.

Despite their rapid growth and the huge increase in the scale of equity markets over the past 20 years exchanges have managed to maintain their profitability. Our research in 2017 showed that exchanges were the only sector of the banking and finance industry to emerge from the financial crisis both bigger and more profitable, with an average operating profit margin of 46% in 2016 (up from 40% in 2006).

This shift has added another layer of complexity and potential conflicts to an already difficult balancing act for exchanges. In order to generate this growth, they have not unreasonably focused on the parts of their business that are likely to generate more growth, more revenues and more profits, such as trading, data and clearing. While listings remain an important revenue stream it plays a smaller role in the economics of individual exchanges than before, according to analysis by the World Federation of Exchanges.

If the underlying purpose of stock exchanges is capital formation, but the real money in exchanges is made in trading, market data and clearing – particularly among the largest listed companies - what impact is that likely to have on how exchanges think about their purpose? Has the shift from mutually-owned for full-on for-profit companies shifted their focus? As Robert Jackson, a Commissioner at the SEC, said last year: 'we should all agree that for-profit companies can be counted on to do one thing – pursue profit'. While this transformation of exchanges has brought huge benefits in terms of innovation, competition and efficiency – and no-one is advocating a return to the clubby mutuals of the 1970s – we think it is a question that deserves further research.

What can we do about it?

There is no silver bullet to reverse what appears to be a structural change in the UK and US market (and equity markets in most developed economies). We have presented these recommendations in summary form for discussion and grouped our recommendations - some of which are more practical than others - into three main themes: i) resetting the regulatory framework ii) collective industry action and iii) rethinking exchanges.

i) Resetting the regulatory framework

Given that we don't think the increase in regulation for listed companies and the ecosystem around stock exchanges is the main cause of the decline in listings and new issues, we don't think that changes to regulation will have a significant impact on reviving them. High standards of corporate governance and disclosure are a hallmark of high-quality markets and we think it is important to avoid any sense of a regulatory 'race to the bottom' to try to kickstart new issues by lowering standards. However, there are a number of areas where regulation can be reviewed and reset:

- Closing the disclosure gap: the disclosure gap between public and private companies can be reduced by raising disclosure standards for privately-held companies (as per the Wates Review of corporate governance for private companies in the UK) and reviewing the height of the bar for listed companies. Any aspect of disclosure for listed companies that is not strictly-related to investor protection and shareholder rights should be reviewed. Investment funds in Europe have to issue a KID (key information document) for their investors: perhaps all companies above a certain size (both public and private) could do the same?
- Quarterly reporting: listed companies should be encouraged to drop quarterly reporting (following the likes of Aviva, Diageo, Schroders and Unilever) and quarterly guidance to analysts should be abolished. A shorter, simpler and more consistent framework for quarterly trading updates could encourage listed firms to focus more on the essential indicators that act as better signposts to their longer-term plans.
- Another look at Solvency II: large asset owners such as pensions funds and insurance companies are being actively dissuaded from investing in equities by regulations such as Solvency II. Brexit could be a good occasion for regulators in both the UK and the EU to review whether improvements can be made to increase long-term investment in equities, although given the shift in the maturity of pension schemes in the UK and their focus on cashflow rather than growth, this may have a limited impact.
- Closing the tax gap: the differential tax treatment of debt and equity acts as a brake on equity financing, particularly in the current benign interest rate environment. While the balance may shift over time as monetary policy normalises, this process could be nudged along by introducing tax credits for equity funding (for example, by allowing the costs of a listing to be offset against tax), limiting the tax deductibility of interest payments to a particular level of leverage, reintroducing indexation and taper-relief on capital gains tax. The EU should resurrect the work it has started on reviewing this tax differential.
- Access to private capital: most individuals savings for their pensions are locked out of investing in private capital: regulators should review how defined contribution pension schemes might be able to provide limited and controlled access to venture capital and private equity to close some of this 'exclusivity gap'. While expanding access to private capital would not help the growth of public equity markets, it would support the vital role that equity plays in widening the sharing of wealth creation. The SEC has issued a concept paper on this topic.
- Preferential voting: it may be time to review the mantra of 'one share one vote'. In order to encourage a longer-term perspective for both listed companies and their investors, regulators could experiment with a limited form of preferential voting rights for longer-term shareholders, perhaps incorporating a minimum qualifying provision and a rolling sunset clause.
- A more proportionate regime: Brexit may also be a good occasion for both the UK and EU to develop a more clearly proportionate regime of regulation for smaller companies and the ecosystem around them that reflects the economies of scale that larger companies, investors and investment banks enjoy.

ii) Taking collective action

There are many areas of the market where listed companies, investors, exchanges and intermediaries could collaborate to encourage a different approach to investing:

Supporting industry-wide initiatives like Focusing Capital on the Long-Term and the Long-Term Stock Exchange in the US, or the Investor Forum in the UK. Encouraging investors to embrace stewardship and to take a longer-term and more engaged approach to their investments will require time, effort, and collective action all the way through the chain of investment (from asset owners, investment consultants, asset managers, and investment platforms and ratings services. Changing the timeframe over which asset managers are judged and rewarded will ultimately change the way in which they engage with the companies in which they invest.

Reforming the IPO process: the basic IPO process has hardly changed in the past 50 years, other than that IPOs tend to involve more banks, require more disclosure and take longer. Widening access to company information for analysts and investors before a company goes public (perhaps with exchanges including a pre-IPO market segment), shortening the process and applying more technology to it, improving the transparency of the allocation process, and experimenting with replacing the bookbuilding process with auctions could reduce the cost, time and effort involved in going public. Nearly 20 years ago several platforms emerged to aggregate retail demand for new issues (EO.com and EPO.com). While they were probably ahead of their time it may be worth resurrecting them, perhaps in the form of an industry-wide platform to attract interest in new issues from retail and smaller institutional investors who would not normally get a look in.

Supporting smaller companies: there are many ways in which investors and investment banks could support the ecosystem around smaller companies. The asset management industry could create an 'investment sandbox' initiative by allocating a very small percentage of their assets to focus on investing in smaller companies and smaller company IPOs (remember that the combined value of the 800 companies listed on AIM is about the same as the value of BP). This sandbox approach would limit any financial risk to the investors but have a potentially huge impact on the smaller end of the market. It could also provide a valuable training and education opportunity for staff.

Collective funding: given that the future supply of smaller companies is vital to the overall health of the market, all market participants – asset managers, investment banks, and stock exchanges - could jointly fund the provision of a basic level of research and support for smaller companies, perhaps through a version of the 'PTM levy' that funds the Takeover Panel and is levied at £1 for every trade above £10,000 (a maximum of one basis point). For example, in Australia, the stock exchange runs a system where investors can sign up to smaller company research reports for free.

Education, education, education: low levels of financial literacy and understanding among the wider public and policymakers are a significant brake on investing in the UK and Europe. While many firms run individual programmes targeted at different audiences (from workshops in primary schools to teach-ins for MPs) the industry could adopt a more co-ordinated approach working with their trade associations and government to maximise the impact of education programmes.

iii) Rethinking exchanges

As gatekeepers to the equity markets, stock exchanges play a vital role. Here are some suggestions as to how they could make listing and investing in listed companies more attractive:

More consolidation: the complex patchwork of exchanges and market infrastructure across Europe is a significant drag on listed companies and new issues because it fragments liquidity and raises the costs of issuing and investing in shares. Further consolidation should not only be encouraged but mandated to help create a smaller number of larger exchange groups operating across multiple markets. This would need to be accompanied by much closer harmonisation of local market rules to help create a genuine single market within each exchange group, instead of just of a single exchange operator.

More competition: in the UK and Europe competition between exchanges is episodic and mainly restricted to competing for trading volumes in the largest stocks. A smaller number of competing exchange blocs across Europe would create more effective competition for listings and trading. In the same way that Nasdaq carved a niche for itself as a technology market, different exchanges in different countries could establish themselves as sector specialists. At the same time, the industry should address some of the hidden barriers to competition for listings: for example, on most European exchanges, in order to be included in the main country index, a company has to be domiciled in that country, and listed on the main exchange. In most cases – unlike in the US – the indexes are owned by the exchanges.

Clearer segmentation: while most exchanges have introduced different segments with different disclosure rules and trading requirements for different types of companies, this could be taken further. Trading in many medium-sized and smaller companies could be limited to a series of two or three auctions a day (to concentrate volumes and reduce the cost of providing liquidity) and exchanges could create 'quiet zones' for companies that choose to be less actively traded or which choose a lower level in the volume (not quality) of disclosure, in exchange for a potentially higher cost of capital. Fees structures for listings could be restructured to make them more attractive to smaller companies (who on most exchanges currently pay higher fees in relative terms than the biggest companies).

Corporate services: many exchanges have set up a range of services for listed companies but there is scope to do more. Given the unique information on trading to which exchanges have access on listed companies and the central role exchanges play in the market, they could provide more services to listed companies in terms of investor relations, PR and communications, training and development.

A regional focus: stock exchanges tend to be based a long way from where many of the companies listed on them – and many of the people whose savings are invested in those companies are based. While it would not make sense to wind back the clock to recreate a network of regional exchanges, there is a potential opportunity to develop a series of 'shop window' exchanges in different regions, to raise the profile of local listed companies, of stock exchanges more broadly, and promote financial education (think of the high profile Nasdaq centre in Times Square in New York). This could double up with developing a local network for listed companies and their executives , perhaps working alongside existing bodies like the Institute of Directors, the Confederation of British Industry, and the Federation of Small Businesses.

iv) And finally...

Given the long history of stock exchanges and the data-intensive nature of their business, we were repeatedly surprised while working on this project that the quality and consistency of data on different aspects of stock exchanges and public equity markets is so patchy. Building basic time series data often involved multiple sources and informed guesstimates. In some areas, such as trading volumes, there is no single data source and the comparability between different exchanges and over different time periods is particularly difficult.

Stock exchanges are a vital part of a thriving economy. We think that a combined industry and government initiative to build, backdate and monitor comprehensive datasets and key indicators would make a significant contribution to shaping constructive debate, better-informed decision-taking and sensible policy reforms across the industry.

Stakeholder Responses.

Responses received from:

Chris Gibson-Smith
Vice chairman of UBS Investment Bank & former chairman of the London Stock Exchange

Alasdair Haynes
Chief Executive, Aquis Exchange

Tim Ward
Chief Executive, The Quoted Companies Alliance

Rebecca Healey
Head of EMEA market structure & strategy at Liquidnet

Andrew McNally
Chief Executive of Equitile Investments and author of 'Debtonator'

Rainer Riess
Secretary General of the Federation of European Securities Exchanges

John Godfrey
Head of group public affairs at Legal & General.

Chris Gibson-Smith

Vice chairman of UBS Investment Bank and former chairman of the London Stock Exchange

Stock exchanges were created to fulfil the funding needs of joint stock corporations. They did this through the provision of public equity. Public equity enabled the wide sharing of risk in new ventures, and wide participation in the creation of wealth. This collection of concepts was a revolutionary step in financial thinking, pooling societal capital, sharing risk with limited liability, and accelerating the development of the economy in a way which was available to everyone. At the time, it was as revolutionary, and important, as the invention of banking had been in Italy in the thirteenth century.

Today, public equity is the sole financial asset class which enables the entire population simply to share in the exponential growth of our economies. The savings and financial reward this enables was at the heart of the development of private pension arrangements. The critical difference, between public equity and public debt, is that the former yields long-term, exponential growth, and returns which make savings for retirement a viable concept. Saving for retirement through using debt instruments is a form of institutionalised poverty enforcement, since the economy is growing in the background at an exponential rate, while the return from debt is linear. This form of savings formed the bedrock of the investment which underpinned the productivity growth of the entire economy.

Public equity has been systematically damaged over the last 50 years. The burden of four levels of taxation makes it the most inefficient form of finance available. Taxation of profits, dividends, trading, and capital gains associated with public equity is in massive contrast to the interest debt relief, against tax, available to debt. There is no coherent explanation of this dichotomy. Add the further burden of increasingly excessive and intrusive regulation, the negative effects of the over application of market consistent ideas, plus quarterly reporting schedules, and you have a perfect storm of abuse levelled against one of the most societally beneficial financial concepts available to us.

An inevitable retreat from the use of public equity followed this onslaught. The rise of alternative financing structures, such as private equity, hedge funds, sovereign wealth funds and cheap corporate debt was specifically designed to avoid these disabilities, and has led to the effective privatisation of capital. As a result, and apart from property, the wider population is largely disbarred from the benefits of participating in their own, growing economy.

This lies at the heart of Picketty's criticisms of the current capitalist system, within which the rewards accrue to capital at the expense of labour. The recent resurgence of socialist, and even communist, ideas is seeking more egalitarian economic systems. In the USA, for instance, the lower 50 percentile of income earners has seen no growth in their real incomes since 1980, as they have lost access to jobs entwined with the world economy. Add to this, their growing exclusion from being able to share in the development of their own economy, for the reasons given above, and one has the source of the current widespread disaffection.

Public equity capital is the source and bedrock of a fair, and efficient, capitalist system. Add to this, widely available access to jobs linked to the development of the world economy, and one has a recipe for considerable societal wellbeing. Over the last 50 years our economic policy actions have, effectively and systematically, created an economy in which neither of these features is, any longer, universally present.

Alasdair Haynes

Chief Executive, Aquis Exchange

In many ways the conclusions of this report are very disappointing. While it is good for the European financial sector and the whole economy that exchanges are bigger, more liquid and more efficient than ever before, it is a major failing that they have been attracting fewer and fewer companies to list on them or use them to raise capital. Listings, after all, are the basic raison d'etre for exchanges. That is where Wall St and Main St intersect. There are several reasons for this failure, but chief amongst them is competition, or rather the lack thereof.

It was the unprecedented competition unleashed by Mifid I in 2007 that saw the creation of many new rival exchanges and MTFs. This new crop of upstarts and start-ups were in many cases pan-European and came in with superior technology, lower latency and were much cheaper than the incumbents. They targeted the secondary trading business of the national exchanges and the liquidity the incumbents thought would never move, did indeed move – around 25% of it in some markets. This competition forced the national exchanges to up their game and the result has been a much-improved marketplace.

This has not been the case with listings. The alternatives to listing for companies looking to grow come not from new or rival exchanges but from completely different sources of finance such as private equity, venture capital and cheap debt, which are very distinct beasts. If you are a UK company and want to raise capital, expand your shareholder base and have publicly-traded paper then you go to the London Stock Exchange (in the vast majority of cases). If you are a French company wanting the same thing, then you go to Euronext, and so on. There is no significant alternative domestic or pan-European 'exchange' for listings. In other words, there is a national monopoly in operation when it comes to listings. Other than in very few cases, where the company in question is huge or very niche, companies list on their one home exchange – end of story. And this isn't good for the economy.

Attempts have been made before in the UK and Europe to establish rival domestic listing businesses - and in the case of Easdaq in the 1990s, a putative pan-European platform - but all have ended in failure. Europe lacks the fierce competition for listings in the US between the NYSE and Nasdaq, but even that is not enough: duopolies behave much like monopolies and what is needed is 3-or-more way competition to bring about significant innovation and sizeable economies of scale.

The separation between the listings business and trading business has so far only been in one direction: new venues for secondary trading. Maybe it is time we should consider the pan-European model for a listings-only exchange.

In addition to creating a pan-European platform for new issues, any next-generation exchange would need to offer lower listing fees and different payment terms for annual fees. For example, these could be linked to revenue as opposed to market capitalisation, with ability to pay not market value being the main measure. These venues would then also need to relax some of their more onerous rules, such as dispensing with mandatory quarterly reporting. This is not a case of lowering standards and making the markets less safe. It is about making the constituent companies more economic to run and making stock exchanges more attractive to them. Another important component would be to foster a nurturing ecosystem for nascent companies and run a comprehensive educational programme.

Governments and regulators need to play their part too. Businesses are already hobbled by existing red tape. An improved tax regime and a reduced corporate governance framework would be a start. Another move could be to force incumbent exchanges to allow easy switching of where they are quoted – much like banks have been forced to do to make switching accounts a simpler process.

While I don't think the major incumbent exchanges face a significant existential threat, the IPO industry just might. Europe needs new entrants to shake up the listing business by bringing in a more international outlook, more innovative technologies and practices and more cost-effective business modes.

Tim Ward

Chief Executive, The Quoted Companies Alliance

This report is a clear articulation of the challenges facing stock exchanges and the wider public equity markets. It is obvious that markets have been going through a fundamental recalibration over the last few decades. What we don't know is where this will naturally end. Unless we see decisive action by the market as a whole, what appears to be a structural decline in equity markets will continue and many companies – particularly smaller companies - will lose out on the ability to raise permanent equity capital. This in turn will limit their growth and have a significant knock-on effect on the UK economy.

The challenges are particularly acute for smaller companies: the number of investible small-cap companies is declining. Investors need to ask themselves where in 10 years, they will find a decent pool of public companies in which to invest. With 284 companies in the FTSE SmallCap Index (as of the end of March 2019), a portfolio manager investing in say 150 companies against this benchmark would find this challenging to say the least. With only 635 companies in the FTSE All-Share this too could present future challenges for active managers.

The stark decline painted in this report highlights the need to develop a more attractive market for companies with a more flexible regulatory and policy approach. The current drive towards a one-size-fits-all, homogeneous approach to enable investors to compare companies on a global basis, and to force companies to behave in exactly the same way, is clearly not an approach that makes it attractive to many smaller companies considering a potential listing.

It is time for a fundamental reassessment or a rebalancing of the market so that investors are protected but not wrapped up in cotton wool and handed only low risk, carbon copy investments. The unattractive alternative - and perhaps the logical conclusion of the trends over the past few decades - is to abandon the market to the top 100 companies who do not need to raise equity and who instead use the stock market mainly to mark their value.

The call to action described here is a challenge that the market needs to respond to. There is no silver bullet and no single set of market participants can solve these challenges on their own. Collective responsibility and action are required. It is time to act.

Rebecca Healey

Head of EMEA market structure & strategy at Liquidnet

Addressing the future role of stock exchanges has never been more critical. While their historic role in capital formation and the facilitation of transparent price discovery is well recognised, the rise in alternative methods of capital raising and growth of corporate debt is challenging the traditional market eco-structure. Stock exchanges – as for-profit organisations - have become increasingly reliant on revenues from the sale of market and trading data rather than new issues. The increasing cost of this data for industry participants is gaining attention from regulators globally, raising the question whether stock exchanges will remain the lynchpin between investors and investments in future as they are today.

At the same time, the investment management industry is undergoing significant change. The continued rise in passive funds has shifted some focus from active and longer-term investment towards more short-term index re-weightings in larger blue-chip companies. This matters not least because pension funds continue to fall short of future funding obligations.

As pensions shift from defined benefit schemes to defined contribution and more flexible shorter-term investment horizons at lower cost, fund performance still counts but creates challenges for asset managers held to benchmarks that are increasingly mere reference points rather than reflecting the underlying fundamentals of a longer-term investment.

These investor challenges are occurring at a time when the cost and burden of being a listed company in terms of disclosure and corporate governance is increasing. The incentive to pursue share buybacks and pay out dividends to maximise returns to shareholders is undermining longer-term investment, while acquisitions and de-listings are undermining the equity market itself.

As more companies move from public markets to private capital, a big question for the industry is how this will affect the democratisation of wealth creation in the longer-term, and what impact it will have on capital formation.

The continued changes in market eco-structure and increasing search for alpha is leading secondary markets liquidity to move from sell-side market makers to electronic liquidity providers and the buy-side themselves. This in turn is having an impact on primary markets activity as the traditional model between the sell- and buy-side evolves.

This is not to say that stock exchanges have had their day. Recent growth in emerging markets and innovation from developed exchanges provide clear evidence of how the industry can improve. However, to succeed in the long run the industry now needs to ask some hard questions as to what the future role of stock exchanges should be.

Andrew McNally

Chief Executive, Equitile Investments and author of 'Debtonator

New Financial – The Purpose of the Stock Market.

Although my parents were not the sort of people to invest in the stock market, it was always part of my youth. Every night, just before the weather forecast, the BBC News at Ten would run the stock market report - "The Footsie closed up by ten points at 1050, the Dow Jones up by twenty-two points at 1234 and the pound traded down against the dollar at 1.42". I can't claim I knew what it all meant but the message was clear; the stock market was important – there was something, perhaps, to aspire to.

It was the infamous "If you see Sid tell him" campaign during the privatisation of British Gas in 1986, however, that brought those arcane BBC reports to life for more than just a few. The virtue of owning a stake in a business listed on the stock exchange was now the domain of many more families, mine included, than it had ever been before.

The BBC News no longer runs the stock market report every single day – generally, they only mention it when it's crashing. Testament, in many ways, to the declining role the stock market plays in our lives. What we in the industry call "de-equitisation" has left companies less reliant on the stock exchange for funding and, more worryingly, fewer people inspired to own a stake in it. "Sid", as it turns out, sold his shares a long time back and the stock market is once again the domain of just a few.

There have, of course, been positive developments over recent decades – low-cost index funds, the introduction of tax-efficient savings wrappers and online investment platforms have all made it cheaper and easier to own equities. In practice, however, the disparity in equity ownership is greater today than it has been for many years. Even pension funds, driven by regulation and perceived best practice, have significantly reduced their allocation to the stock market.

Why does this all matter?

Firstly, the equity contract is the most effective recycler of wealth created by economic progress there is. The more people own equity, the more people reap the financial rewards of economic growth – a natural antidote to the destabilising effects of excessive wealth polarisation as we observe today.

Secondly, the virtue of broad ownership beyond just the financial benefits is not being captured as well as it could be. Greater sharing of risk and return through a more relevant stock market would not only bring greater stability to our financial system, but it would encourage the sense of independence, responsibility and shared-endeavour that our society increasingly lacks.

The solution goes beyond the stock market itself. More equal tax treatment of equity finance relative to debt finance, a regulatory culture that encourages broader ownership rather than one that stands in its way and reform of our pensions industry are just a few areas where we could start to redress the balance.

A "re-equitisation" of our economy, with the stock market at its core, would not only stabilise our financial system, but it would bring the full value of ownership back to the heart of our society.

Rainer Riess

Secretary general of the Federation of European Securities Exchanges

This report highlights some of the core challenges equity capital markets and stock exchanges face globally. Perhaps even more timely is that it asks the question should we care? Yes, is my emphatic answer to that.

With an ageing population creating a pension gap, increasing disparity between rich and poor, and the questions around the sustainability of our capitalistic economies from an environmental, social and governance point of view, we need public equity markets that allow citizens to be able to contribute and participate towards the growth and returns of our real economy.

I am optimistic about the future – exchanges have historically faced numerous challenges and weathered the storm. They have remained consistent: delivering high quality price formation and market data. The financial crisis has shown that exchanges can provide stability, fairness, integrity and resilience, when other markets failed. They have done so by embracing change, looking to the future, embracing technologic advances and focusing on the best outcomes for end investors.

The European Union launched an ambitious project under Lord Hill, the British EU Commissioner: how to build a sustainable Capital Markets Union (CMU) for Europe. This report highlights many of the building blocks which could be used towards creating a CMU that delivers for citizens, companies and societies. Recently, FESE and its members took the time to analyse the impact EU regulation has had on various aspects of the exchange industry and identified 20 key principles in our report 'FESE Blueprint: Capital Markets Union by 2024 - A vision for Europe' . It is no surprise that many of our principles are also reflected in this report.

The EU's goal to create a Single Market through greater competitiveness was fully endorsed by Exchanges, and whilst regulations such as the Markets in Financial Instruments Directive (MiFID) framework delivered greater choice and lower trading fees, the focus was on the largest and most liquid stocks i.e. the blue chips, without consideration of the impact these rules would have on the listing conditions faced by Small and Medium Sized Enterprises (SMEs).

Current regimes of insolvency, intellectual property rights, accounting, taxation and capital adequacy are insufficient in the context of global competition and seem to be discouraging companies from listing in Europe. Regulatory overhead and compliance cost for SMEs and brokers catering to SMEs need to be reviewed. In addition, after MiFID we observed a growth in dark trading; consequently, weakening the basis of price formation and the very basis of the equity ecosystem in Europe.

Exchanges provide reference prices to all market participants including those that do not contribute to the price formation process. In the absence of policy action, price formation on public markets may become non-viable in the long-term, leading to the re-emergence of dealer markets with higher risk to systemic stability, higher cost and less transparency.

We must reflect on the most appropriate market structure design, to allow a robust, liquid and transparent price discovery mechanism. We must also discuss what incentives we can provide for transparency and public markets that provide environmental, societal and governance sustainability. We should also be asking why private and less transparent markets enjoy advantages without fulfilling the same societal functions in the investment process.

John Godfrey

Head of group public affairs at Legal & General

Narrowing the 'Exclusivity Gap'

Over the last twenty years, returns from investment in private, or illiquid, assets have exceeded returns available from publicly-listed securities by 5.7% annually.

Compounded over the multi-decade period of an individual's pension accumulation phase, this 'exclusivity gap' is huge, and for the 'ordinary' long term saver into a pension scheme, these higher returns are simply unavailable: they are the preserve of an already wealthy elite.

There are obvious reasons why, historically, access to stellar returns in private markets has not been 'democratised'. Pension trustees are understandably nervous about illiquid assets 'for the masses', and regulation has reinforced this.

While property can be held in a portfolio, legislation on 'permitted links' has not permitted other illiquid assets to be held. Smaller schemes, in particular, lack the scale and capacity to diversify and often the safest course is to default to index-tracking and / or investing in gilts. Illiquidity makes it more difficult to provide valuations, and the industry argues that delivering investment in illiquid assets is hard if not impossible to reconcile with a 75 basis point charge cap for auto-enrolment funds. This is understandable in the context of a 2% set fee plus 20% of performance.

However, this needs to be set against the backdrop of a shortage of investment, particularly patient capital, for start-ups and scale-ups. As defined contribution pension scheme portfolios grow, organically or through consolidation, the opportunity to invest a small portion of the total in illiquid assets presents itself. The government work on "VC into DC" will help, as will associated efforts by regulators to tackle the issues of permitted links, valuation and fees. For large funds, a small allocation across a series of VC investments should be achievable without unacceptable levels of risk.

The potential here is significant: funding gaps for business can be addressed, returns can be improved, and pension savings made more 'relevant' to the 'real economy'. Many of us would enjoy talking in the pub about what our pensions are doing for new and growing businesses. And it may also spur earlier listings on growth markets, if regulation is suitably joined-up. Perhaps counter-intuitively, France has taken a more progressive view to using pension savings to drive economic growth: we can follow suit.

For more information please contact:

Jeremy Apfel

Managing Director, Corporate Affairs

apfel@pensioncorporation.com
020 7105 2140

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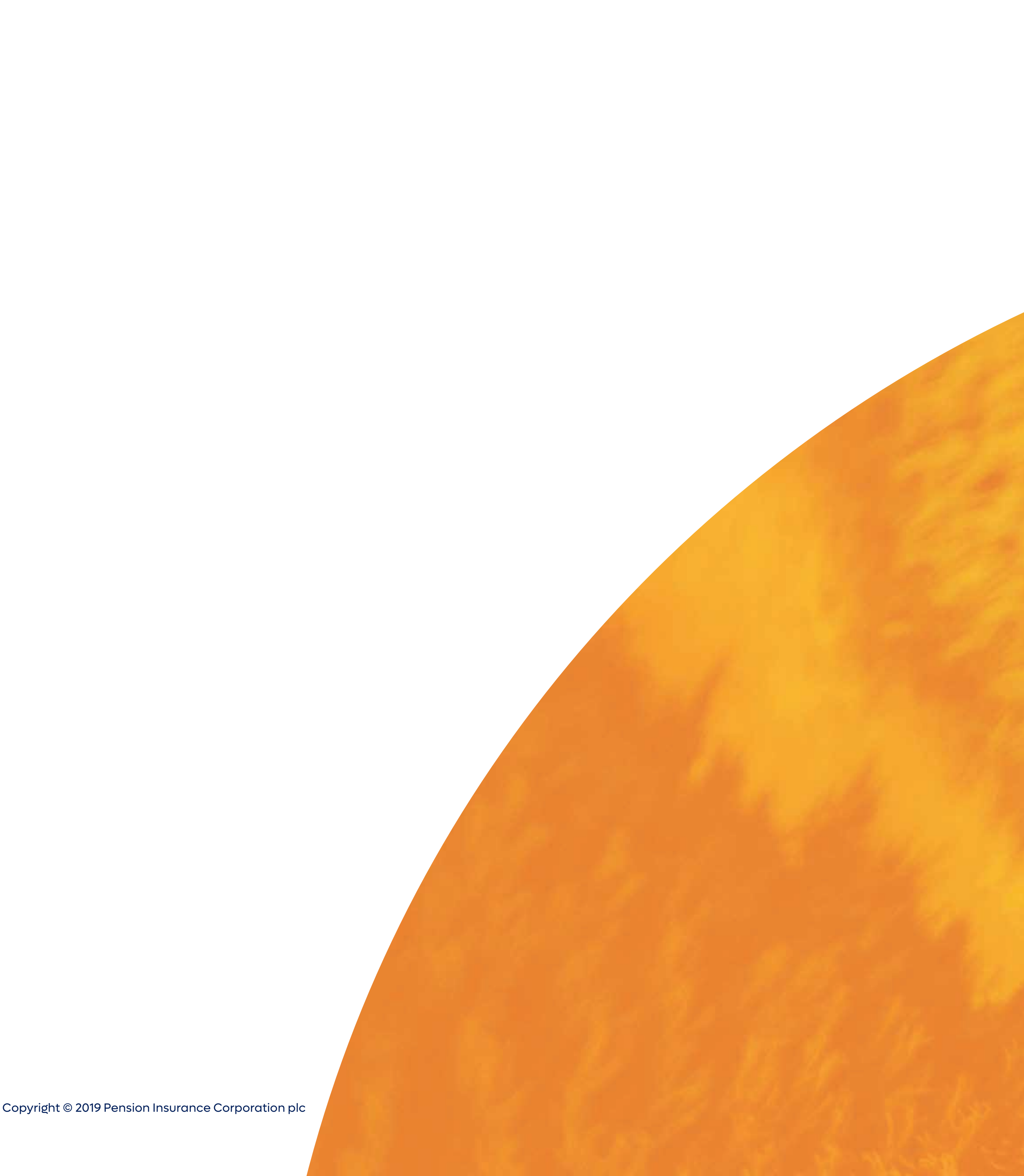
This document is designed to provoke thought and discussion and should not be relied on when making investment decisions.



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