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Foresight

The rise of US superstar firms and its implications for investors

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Schroders

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Over the past two decades, over 75% of US industries have become more concentrated, with a small number of large firms controlling greater shares of their markets. These "superstar" firms – including Microsoft, Apple, Amazon, Facebook and Alphabet (Google's parent) – increasingly dominate their respective industries in terms of sales, profits and equity returns. Although this winner-takes-all market has been great for investors, there is a growing concern that it is indirectly harming consumers and worsening income inequality. The regulatory backlash against these superstars could curb their abnormal profits, with potential consequences for stock market returns.

Competition is the bedrock of the market economy. It incentivises firms to keep prices low, produce better quality products and offer attractive wages. So when firms compete for market share, prices fall, economic output increases, productivity rises and standards of living improve. This not only benefits consumers and workers, but also the economy in general as resources are allocated more efficiently.

However, over the past two decades, there have been signs that competition has weakened across numerous US industries, as a handful of "superstar" firms exert more market power than before. In 2000, for example, the top two telecom service providers controlled around 30% of industry sales. Today they control 70%[1]. In the US airline industry, the top four airlines have increased their share of domestic air travel from 48% in 1997 to 68% today[2].

Economy-wide indicators all point in the same direction. Between 1997 and 2012, over 75% of US industries have become more concentrated, with the four biggest firms accounting for a greater share of revenues than in the past. Specifically, the weighted average share of revenues of the top four firms in a given industry rose from 24% to 33%, with the largest increases occurring in the information technology (IT), telecoms, media and retail sectors (Figure 1).

1 Goldman Sachs Global Investment Research, June 2019.

2 Bureau of Transportation Statistics. Data from 1997 to 2018. Measured using domestic revenue passenger miles.

A similar trend can be observed using the Herfindahl-Hirschman Index (HHI) – a commonly accepted measure of market competitiveness that takes the sum of squared market shares of all firms[3]. Research has found that, between 1995 and 2013, the weighted-average HHI of all industries in the US equity market has risen by 54% and is now approaching its previous peak reached in the early 1980s (Figure 2). This has coincided with the large-scale disappearance of publicly traded firms, as the number of listed companies has nearly halved[4]. Meanwhile, the average and median size of publicly traded firms has tripled in real terms[5]. As a result of this increased market control, firms have been able to charge higher prices, or keep them unusually high. Average mark-ups (prices over marginal costs) for publicly traded firms have increased from around 3% in 1980 to 20% in 2015[6].

3 If a firm has a 100% market share, the HHI would equal 10,000, indicating a monopoly. The US Department of Justice considers an HHI of 1,500 and 2,500 to be a moderately concentrated marketplace, and an HHI of 2,500 or greater to be a highly concentrated marketplace.

4 See our paper: "What is the point of the equity market." Schroders, April 2018.

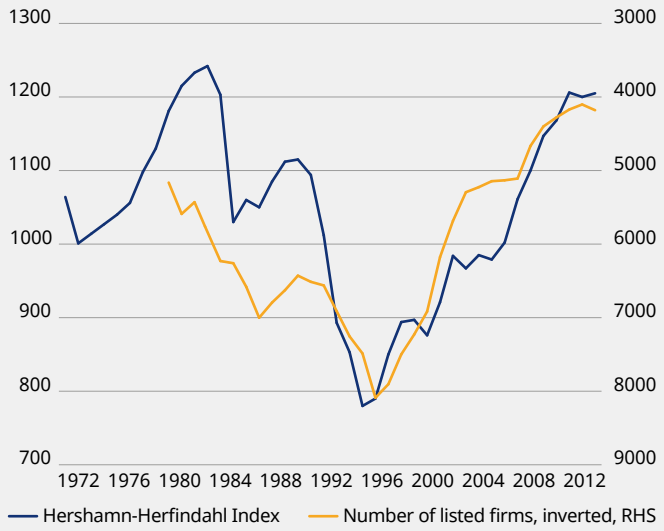
5 "Are US Industries Becoming More Concentrated". Grullon, G. et al. Review of Finance, Volume 23, Issue 4, pages 697-743, July 2019.

6 "Who are America's Star Firms?" Ayyagari, M. et al. World Bank Group. July, 2018.

Figure 1: Major sectors of the US economy are more concentrated than in the past

Source: US Census Bureau and Schroders. Notes: latest data currently only available for 2012. The top four firms' average share of total revenue is the weighted average across six-digit North American Industry Classification System (NAICS) Industries within a sector. For manufacturing, value added is used to calculate the average share. The wholesale trade sector is excluded due to data issues. *Market share is calculated using only taxable firms in that industry.

Figure 2: Market consolidation has coincided with the large-scale disappearance of public firms



Source: Are US Industries Becoming More Concentrated". Review of Finance, Volume 23, Issue 4, pages 697-743, July 2019, World Federation of Exchanges and Schroders. Data to 2013. More recent data not available.

Market dominance is nothing new

To a certain extent, this picture feels déjà vu. The US has a long history of going through cycles of market competition and consolidation. Indeed, throughout the 20th century, many US industries were dominated by large companies such as Standard Oil, US Steel and General Electric. Some of these were eventually broken up by antitrust authorities into smaller companies, while others lost market share to more efficient competitors. Like their predecessors, a small group of large firms are once again dominating their respective industries.

Yet, there are also striking differences between the largest firms of today and the past. Today's corporate giants are predominantly technology companies that command huge market values and typically have fewer physical assets and employees (Figure 3). For example, in 1989, the three largest US stocks – Exxon Mobil, General Electric and IBM – had in today's dollars, combined annual revenues of $412 billion, a market capitalisation of $356 billion and an employee base of 779,000. In 2019, the tech superstars – Microsoft, Apple and Alphabet - had combined annual revenues of $529 billion, a market cap of $2.9 trillion and an employee base of just 362,000[7].

It should be no surprise that increased industry concentration has greatly benefitted investors, as clusters of economic power have translated into substantial earnings growth and stock market gains. But there is a growing concern that it may be indirectly harming consumers and worsening income inequality. We unravel some of the potential explanations for weakening US market competition and find that its economic consequences have induced a regulatory backlash, which may affect stock market returns.

7 Source: Refinitiv Datastream and Schroders. Data from 1st January 1990 to 31 August 2019. Notes: inflation adjustment made using core CPI.

Figure 3: The most valuable stocks are all tech firms

Top five publicly traded US firms by market cap

Year	#1	#2	#3	#4	#5
1989	Exxon Mobil	General Electric	IBM	Altria Group	Merck & Company
1999	Microsoft	General Electric	Cisco	Walmart	Exxon Mobil
2009	Exxon Mobil	Microsoft	Walmart	Apple	Johnson & Johnson
2019	Microsoft	Apple	Amazon	Facebook	Alphabet

Source: Datastream Refinitiv and Schroders. 2019 data as at 30th September all other data as at year-end. Notes: green denotes technology sector and black denotes other sectors.

Tech markets are winner-take-all

The digital and information revolutions have played an important role in influencing the US competitive landscape. Digital products and services require considerable upfront investment, but are much cheaper to scale than physical products. This is because they rely on intangible inputs (software, data, research and development), which shift the cost of production away from variable costs towards fixed costs. So once a firm has developed an innovative digital process or product, it can acquire new customers and dominate the market at virtually zero marginal cost.

This effect has been particularly marked in the IT sector. For instance, Google controls 88% of US search activity, Microsoft's Windows operating system runs on nearly 75% of US desktop PCs and almost all mobile operating systems are provided by either Apple or Google (Figure 4). The dominance and popularity of these technological creations has created powerful barriers to entry for competitors. Peter Thiel, co-founder of Paypal crudely summarised this phenomenon as follows:

> **"Competition is for losers. If you want to create and capture lasting value, look to build a monopoly."[8]**

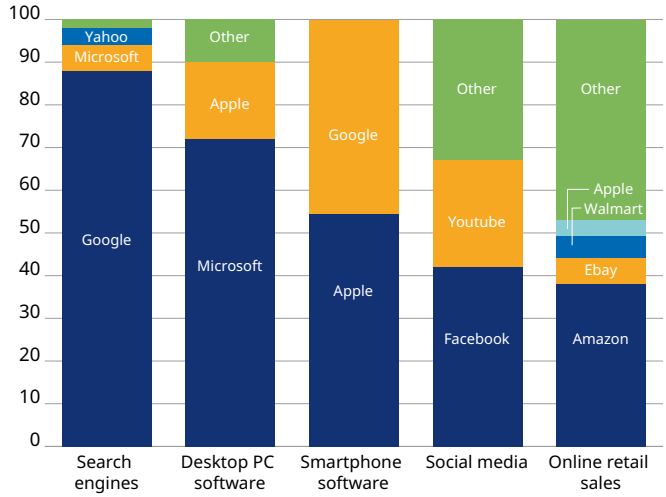
The tech giants' market dominance has also been strengthened by direct (within-market) and indirect (cross-market) network effects. Most of the new tech firms are "platforms" that connect different groups of people and foster mutually beneficial exchanges. Social media platforms such as Facebook and YouTube have largely built their fortunes through direct network effects, where the value of their service has increased with the number of users. Other platforms such as Amazon have relied on indirect network effects to achieve their massive scale, as the value to participants in one market (customers) has depended on the number of participants in another market (suppliers). But once these companies dominated their relevant market, success became self-fulfilling.

Finally, many tech companies have deployed strategies to lock in users by making it difficult to switch to a rival service or product, reinforcing their market dominance. The time invested in learning a particular system, user customisation (personalised interfaces, music playlists etc.) and the accumulation of content (Amazon's marketplace ratings or Apple's iCloud data storage) all increase switching costs. Usage has also become habitual or even addictive in some cases.

8 "Zero to One: Notes on Startups, or How to Build the Future." Thiel, P. 2014.

Figure 4: Concentration is high in markets that rely on intangibles and network effects

US market share of selected markets, %



Source: eMarketer, MarketingCharts, Statista, Statcounter and Schroders.
Notes: search engines shows total US search queries as at August 2019. Desktop software shows US market share of desktop operating systems as at August 2019. Smartphone software shows US market share of mobile operating systems as at April 2019. Social media shows total US user visits (desktop and mobile) as at June 2016. Online retail sales shows US market share as at June 2019.

The impact of M&A and lax antitrust enforcement

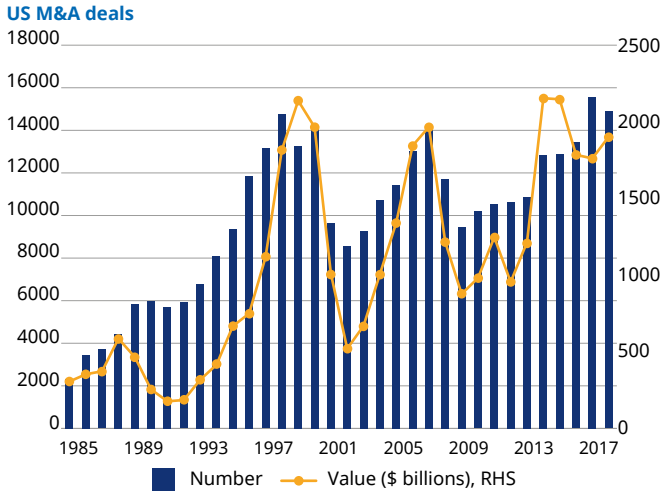
Since the late 1990s, market consolidation has been further driven by a flood of merger and acquisition (M&A) activity. Between 1985 and 1995, there were on average 5,600 M&A deals announced each year, with an average annual total value of $370 billion. Over the next two decades, the average number of deals per year swelled to over 10,000 and the average total value more than tripled. In 2017, there were a record 15,000 deals worth a total of $1.7 trillion (Figure 5). But as many as 60% of US stock market delistings between 1997 and 2012 were the result of M&A, thus supporting increased public equity market concentration[9].

Superstar firms have been able to cement their dominant market position by gobbling up competitors using the record piles of cash that their success has generated. For example, just as Facebook was about to hit a wall in user growth, it acquired Instagram and WhatsApp to boost its revenue streams. Instagram's massive user base, combined with the potential monetisation of WhatsApp, allowed Facebook to fend off competition from Snap and Twitter on the advertising front. In the same vein, Google's acquisition of Android in 2005 (prior to the release of the first iPhone) was intended to prevent Microsoft from dominating the smartphone market.

Lax enforcement of antitrust policy has facilitated this wave of M&A activity. Generally, transactions have raised antitrust concerns when they either (1) cause the HHI to rise by 200 points or more in an already concentrated market or (2) cause the market HHI to exceed 1,500 points, as these are assumed to represent a concentration of market power. However, over the past 20 years, the Federal Trade Commission (FTC), the US antitrust authority, has challenged fewer transactions on anti-competitive grounds. It has also narrowly focused on only the highest concentration cases. Academic research found that, between 2004 and 2011, only 33% of mergers that raised a market's HHI by 200 to 299 points were challenged, compared to 65% between 1996 and 2003. In fact, enforcement action declined for all mergers that changed HHI levels by 100-1199 points (Figure 6). This lenient antitrust approach has contributed to the rise in industry concentration levels.

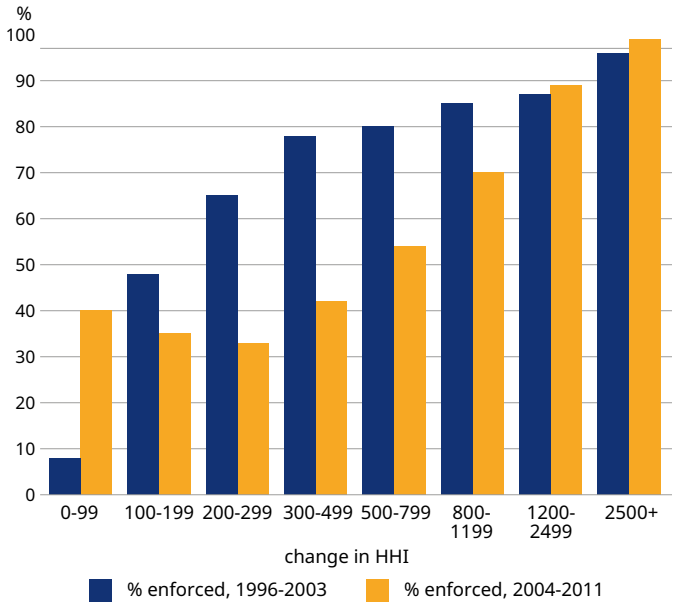
9 "The US listing gap." Doidge, C. et al. July 2015.

Figure 5: Market consolidation has been driven by a flood of M&A activity



Source: IMAA Institute and Schroders. Data to 2018. Notes: based on announced deals.

Figure 6: Antitrust enforcement action has weakened



Source: Kwoka, J. "Mergers, Merger Control, and Remedies." Cambridge, Massachusetts: MIT Press, 2015. Notes: percentage of all merges that resulted in antitrust enforcement action. More recent data not available.

The experience of telecoms, pharma and airlines

Since the late 1990s, various M&A deals have transformed AT&T and Verizon into the largest US telecom providers. The resulting stunted level of competition combined with weak regulatory enforcement has meant that high-speed fibre internet deployment in the US has remained low while broadband prices have stayed high[1]. Currently, US wireless data prices are among the most expensive in the world, even after adjusting for the number of competitors in each country[2]. For example, one gigabyte of mobile data on average costs Americans $12.37 while the same amount in India costs only $0.26.

It is no secret that Americans also spend more on healthcare than most developed countries. Spending per capita on prescription drugs and self-medication is significantly higher in the US than in any other OECD country[3]. This was not always the case. In the 1980s, several developed countries spent about the same per capita as the US. But in the 1990s and 2000s, pharmaceutical spending grew much more rapidly in the US than in other countries. Among other reasons, market consolidation, patent laws that restrict competition and a relative lack of pricing controls are to blame, as these have paved the way for monopoly pricing.

Evidence of increasing market power has emerged in the US airline industry as well. A series of mega mergers have left the four largest US airlines – American, Delta, United and Southwest – controlling more than half of all domestic air travel. Yet, in recent years, these companies have come under increasing regulatory scrutiny and faced lawsuits for colluding to drive up air fares[4].

1 "Communications infrastructure upgrade, The need for deep fibre". Deloitte. July, 2017.

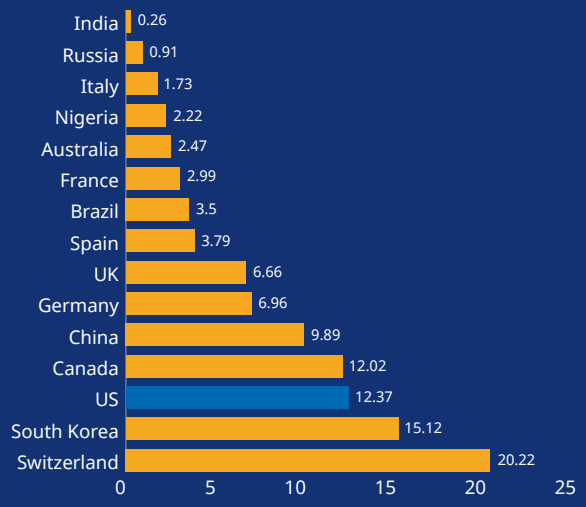
2 "The state of 4G pricing." Rewheel. October, 2018.

3 OECD, 2017.

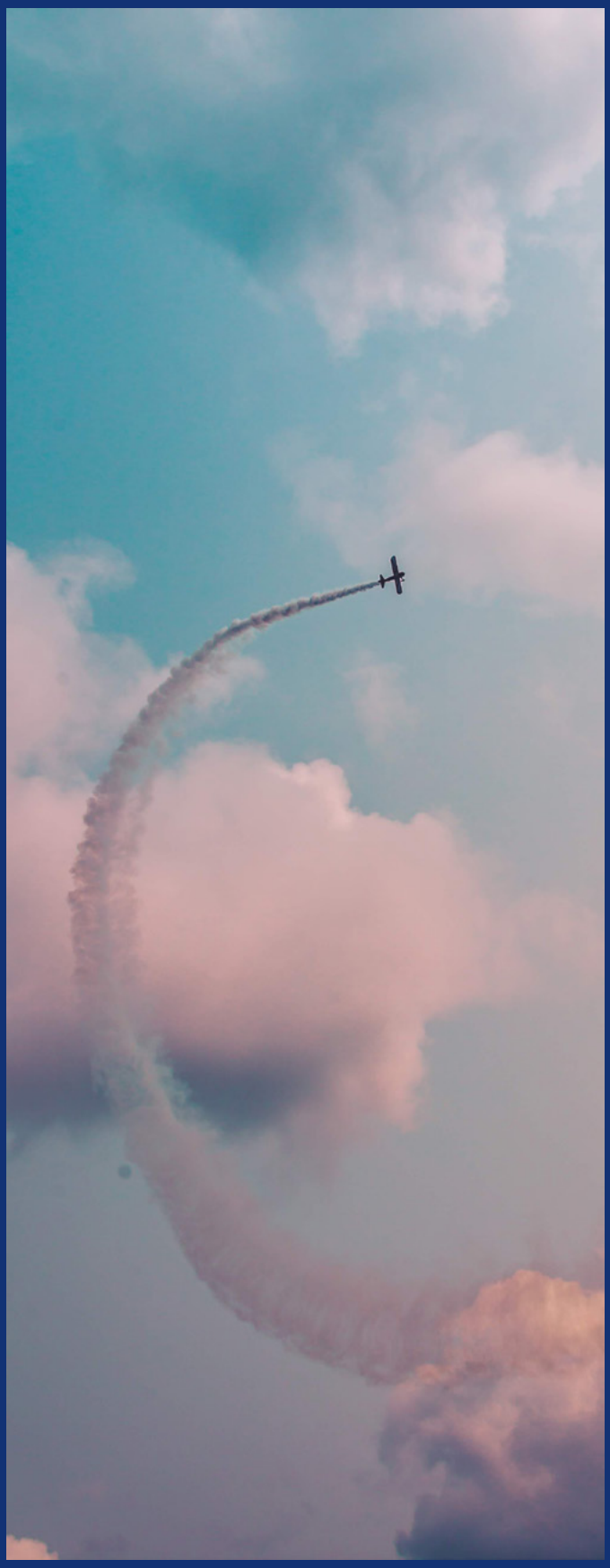
4 "American Airlines agrees to pay $45 million to settle fare collusion lawsuit". Bloomberg. 15 June, 2018.

The cost of mobile internet around the world

Average $ cost of 1GB of mobile data in selected countries



Source: Cable.co.uk and Schroders. Data as at 2018.



Abnormal profits have fuelled income inequality

All of this has helped US firms earn a growing a slice of the economic pie. Since the 1990s, corporate profits as a share of GDP have risen from around 6-8% to 10-12% today. In particular, the overall revenues of the Fortune 500, the largest American firms, have risen from 58% of GDP in 1994 to 66% in 2018[10].

In theory, firms can only enjoy temporary periods of abnormal profits because new market entrants should eventually compete them away. However, reduced competition has enabled the largest companies to exert more market power than before and thus yield higher profits. Research from Stanford University confirms this: the share of monopoly profits in economic output has risen from virtually nil in the 1980s to around 22% in 2015[11]. This is almost a mirror image of labour's income share of GDP, which has been on the decline for about three decades, but has accelerated since the turn of the century, falling from around 64% to 57% today (Figure 7).

It is no coincidence that workers have received a shrinking slice of the economic pie as industry concentration levels have gone up. The McKinsey Global Institute estimates that superstar effects and market consolidation account for 18% of the decline in labour's share[12]. Research elsewhere also shows the industries that have become the most concentrated are the same sectors that experienced the largest declines in the labour share[13]. Firms with a high market share of total industry sales typically have above-average profit margins and sales per employee than firms with low market shares (Figure 8). Consequently, as industries have become more concentrated and the weight of superstar firms in the US economy has grown, the overall share of GDP going to labour has fallen.

This reallocation of output towards superstar firms and away from workers has contributed towards rising income inequality. On average, low-income households derive a substantially smaller share of their wealth from stock ownership than high-income households[14]. So although industry concentration has boosted corporate profits and shareholder returns (see later section), the benefits have not been equally distributed among the US population.

10 Fortune, 2018.

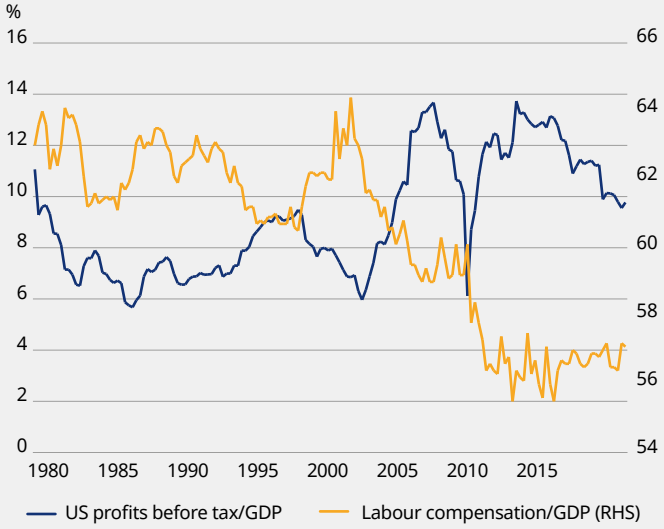
11 "On the Formation of Capital and Wealth: IT, Monopoly Power and Rising Inequality." Mordecai, K. 2017.

12 "A new look at the declining labor share of income in the United States." McKinsey Global Institute. May, 2019.

13 "The Fall of the Labor Share and the Rise of Superstar Firms." Autor, D. et al. 2017.

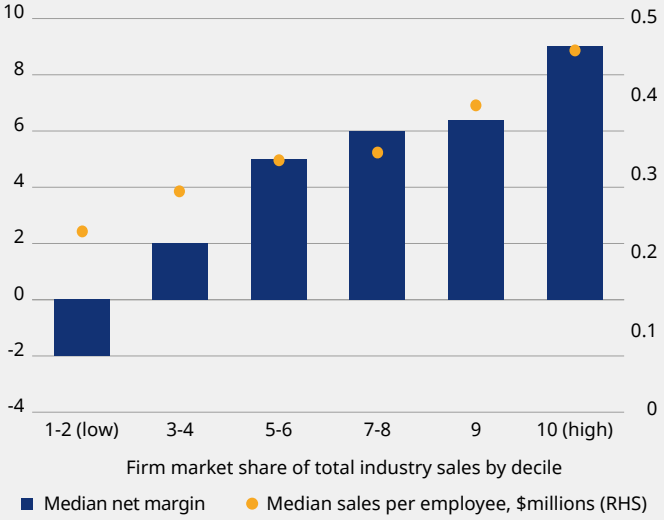
14 "The Asset Price Meltdown and the Wealth of the Middle Class." Wolff, E. 2012.

Figure 7: The rise of superstar firms has been better for shareholders than for employees



Source: Refinitiv Datastream, BLS and Schroders. Data to Q2 2019. Notes: Profits exclude Inventory Valuation Adjustment and Capital Consumption Adjustment. Labour compensation refers to nonfarm business sector.

Figure 8: Firms with high market shares are typically more profitable and more efficient



Source: Goldman Sachs Global Investment Research and Schroders. Data as at 2018. Notes: Based on 3-year average US sales of the S&P Total Market Index using GICS Level 2 and 3 industries. Deciles refer to market share of firms within an industry.

The puzzle of low inflation

One economic mystery of the past decade is that overall US inflation has remained muted even as market power has intensified. Although the exact reasons for this are unclear, one potential explanation is that greater industry concentration has resulted in more labour market concentration, which has in turn depressed wage growth and inflation. When fewer firms exist in an industry, they can get away with paying lower wages compared to a competitive labour market where firms need to compete for talent. This is consistent with evidence that since the late 1980s, the gap between how well big and small firms pay has shrunk. According to a research paper, mid- and low-wage workers at big companies make less money relative to their counterparts at small ones than they used to[15].

The increasing role of intangible investment in the US economy has also probably played a part in driving inflation lower. Economic theory says that prices should rise more rapidly as the economy gets closer to capacity. However, in an intangible-intensive economy, things work slightly differently. Consider the smartphone market: once a company has written the software underlying its mobile applications, it incurs virtually zero marginal costs whether it sells a hundred or a million copies. The company never quite reaches capacity and so the incentives to increase prices to meet demand are lower. Economies that employ more intangible capital may therefore be less inflation-prone as they expand and become more concentrated.

Lower interest rates, higher stock market returns

The rise of superstar firms has had various implications for investors. For a start, if rising industry concentration has contributed to lower inflation, then it would illustrate why the Federal Reserve has been able to keep interest rates so low for so long, thus supporting bond prices. The elevated profit margins associated with declining competition have also boosted stock prices. Several research papers provide evidence that equity returns have increased as industries have become more concentrated, indicating that a significant portion of the gains have accrued to shareholders[16].

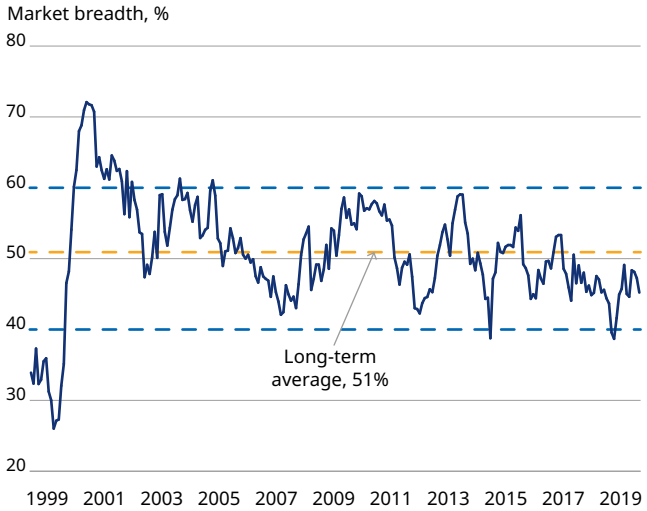
As superstars have prospered, a narrow group of companies have become the motor of the US stock market. For example, over the past two decades, the top 20 performing stocks in the Russell 3000 Index (just 0.7% of all constituents) accounted for 25% of the index's total return. And just five companies – Apple, Microsoft, Amazon, Google and Facebook – accounted for 10% of the index's total return[17]. This has meant that market breadth – the proportion of stocks that outperformed the index – has trended below the long-term average for a number of years (Figure 9).

15 "Growing Apart: The Changing Firm-Size Wage Effect and Its Inequality Consequences." Cobb, J. et al. 2016.

16 See "Are US Industries Becoming More Concentrated". Grullon, G. et al. Review of Finance, Volume 23, Issue 4, pages 697-743, July 2019 and "Industry Concentration and the Cross Section of Expected Returns: A Global Perspective." N.W., E. The Journal of Investing. Spring 2018, Volume 27, Number 1.

17 Source: Bloomberg and Schroders. Data from 2000 to 31st December 2018.

Figure 9: US equity returns have become increasingly concentrated

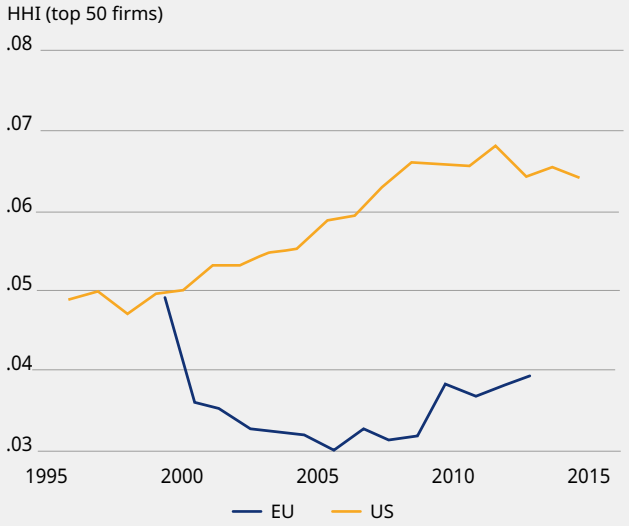


Source: Refinitiv Datastream and Schroders. Data is from July 1999 to August 2019. Notes: US market represented by MSCI USA Index. Proportion of stocks beating the respective index total return measured as the number of stocks outperforming divided by the total number of stocks in the respective index. The breadth is calculated each month using 12-month rolling returns. Long-term average since July 1999.

This narrowing market leadership helps to demystify the recent disappearance of the value premium - the historically positive difference in returns between value and growth stocks[18]. The sectors that experienced significant increases in industry concentration, such as the technology sector, are home to some of the largest, fastest-growing companies, whose continued success may not have been possible if it were not for M&A, lax antitrust enforcement and technological innovation. Meanwhile, the banking industry, a typically value-orientated sector, has been under immense regulatory scrutiny since the financial crisis and this has weighed down on return on equity.

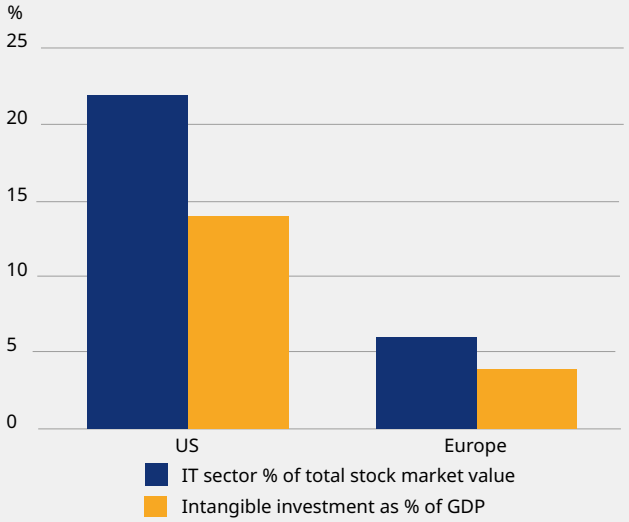
In practice passive investors have benefited more than active from the strong market performance of the superstar firms. The problem now is that with concentration levels increasing in the US stock market, passive investors are taking more risk than they realise and are therefore exposing themselves to a potential reversal of recent market trends.

Figure 10: Markets are more competitive in Europe than in the US



Source: How EU Markets Became More Competitive Than US Markets: A Study of Institutional Drifts." Gutierrez, G. and Philippon, T. 2018. Notes: based on weighted mean of top 50 firms in each industry which differs from earlier Figure 2 that includes all publicly traded firms.

Figure 11: Technology and intangibles have a larger footprint in the US than in Europe



Source: Refinitiv Datastream and Schroders. Sector data as at 30th August 2019, annual intangible investments as at Q4 2018.

Competition is stronger in Europe

Diverging trends in industry concentration between the US and Europe provide a compelling explanation for recent US stock market outperformance. Since the late 1990s, industry concentration and profits have remained relatively stable in Europe while they have increased in the US (Figure 10). One reason is that EU antitrust institutions have more political independence than their American counterparts, which makes them less amenable to lobbying by special interest groups. This is consistent with evidence that US firms spend twice as much on lobbying regulators and politicians and 50 times more on campaign contributions than EU firms[19]. EU policy is also more focused on promoting competition within an industry and has a slightly broader scope, whereas US policy aims to primarily protect consumers. These regulatory differences have arguably fostered a more competitive marketplace in Europe, thus limiting monopolistic profits and potentially also stock market returns.

The lack of concentration in Europe is also partly down to the absence of successful tech companies. For example, as at 30 August 2019, the IT sector represented 22% of the market cap of the MSCI USA Index, but only 6% in the MSCI Europe Index. This phenomenon is reflected at the broader economy level as well. Investment in intangible assets represents 14% of US GDP, but only 4% of EU GDP (Figure 11). Such compositional differences have further contributed to the widening performance gap between US and European stock markets, since firms with higher intangible capital tend to have on average higher equity returns than firms with lower intangible capital[20].

The EU has become the global trailblazer in policing competition, fining Google and Facebook over privacy concerns and the competitive implications of the digital platforms' collection of user data. However, recent political rhetoric suggests that the tide may be turning. The German economy minister, Peter Altmaier, has called for changes to EU competition rules to foster the creation of "European champions" to compete with tech firms in the US[21]. This idea is gaining increasing traction in Brussels, as the EU recently announced plans to launch a €100 billion sovereign wealth fund to finance industrial champions[22]. A political move in this direction could support stock market returns in the future.

19 How EU Markets Became More Competitive Than US Markets: A Study of Institutional Drifts." Gutierrez, G. and Philippon, T. 2018.

20 "Intangible Capital and Asset Prices." Nguyen, T. January 2018.

21 "Germany pushes for EU industrial policy revolution." Financial Times. 6th February 2019.

22 "EU floats plan for a €100bn sovereign wealth fund." Financial Times. 23rd August 2019.

What could reverse the ascent of superstar firms?

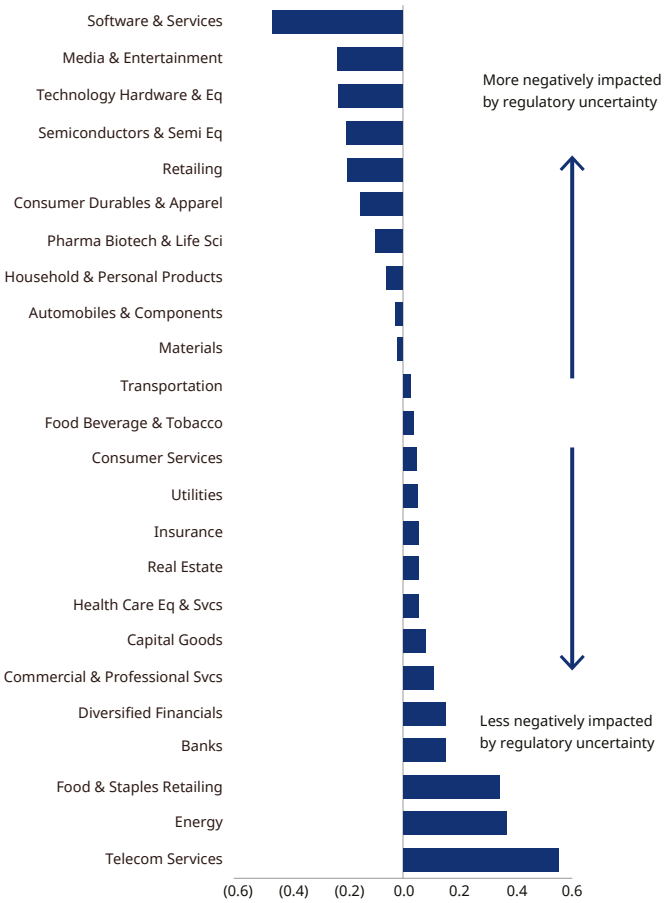
The rise in US concentration levels and its effect on inequality has had major political repercussions. Growing disaffection with stagnating income levels has contributed to the populist movements in the US and elsewhere. Further, since 2016 public opinion has become more critical of the tech superstars. Over the past four years, the share of Americans who felt that technology companies were having a positive impact on society fell from 71% to 50% and negative views have nearly doubled, from 17% to 33%[23]. This mistrust of rising corporate power has been channelled into calls for government intervention on both sides of the aisle. President Trump has threatened "Big Tech" – Apple, Amazon, Google and Facebook - with regulatory action, while the democratic presidential candidate Elizabeth Warren has floated the idea of breaking them up.

Increased regulation poses significant downside risks to superstar firms' revenue growth, profit margins and valuations. The Department of Justice and Federal Trade Commission have launched investigations into Google, Apple, Facebook and Amazon, and the House Judiciary Committee is launching an antitrust probe of Big Tech. Investors have taken notice of these rising regulatory risks. Over the past three years, the market performance of stocks within software (Microsoft), media & entertainment (Google and Facebook), tech hardware (Apple) and retailing (Amazon) have exhibited the strongest negative correlation with changes in the regulation component of the Economic Policy Uncertainty Index, as investors digest the prospect of slower growth and lower profitability (Figure 12). Besides these industries, pharmaceuticals have been a regulatory focus as well.

In the past, regulatory action against AT&T, Microsoft and IBM coincided with lower valuation multiples and share prices between lawsuits being filed and resolved, and was followed by a downward shift in the trajectory of sales growth (Figure 13). And although it took many years for a resolution to be reached, the valuations of these companies fell much sooner. Indeed, the mere possibility of regulatory action tends to unnerve investors relatively quickly. For instance, during the 2016 US presidential election, pharmaceutical stocks took a hit after Hillary Clinton promised to tackle the problem of high drug prices. In 2018, a number of tech stocks also briefly tumbled following the Cambridge Analytica data scandal concerning Facebook. So if anything, increasing regulatory scrutiny over the coming years is likely to place downward pressure on the stocks concerned. Given the high public interest in this subject, some legal experts also believe investigations could be done at a faster pace than in the past[24].

Figure 12: The technology sector has been in the regulatory spotlight

Correlation of industry group returns with changes in regulation uncertainty



Source: Goldman Sachs Global Investment Research. Data as at 11th June 2019.
Notes: monthly observations during the last three years.

23 Pew Research Center survey, July 2019.

24 "US Internet & Interactive Entertainment. Is the antitrust "winter" upon us?" UBS

Figure 13: In the past, regulatory scrutiny has lowered stock valuations

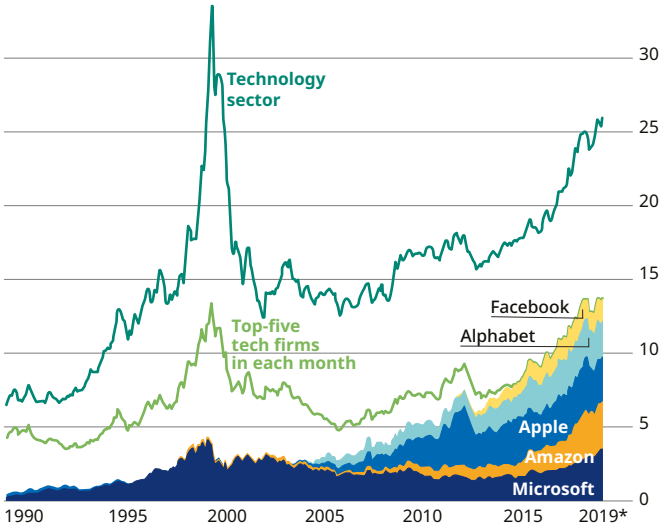
Company	Lawsuit filing year	Impact between lawsuit & resolution	Resolution year	Resolution	Impact post-resolution
AT&T	1974	Valuation multiples fell	1982	Breakup ordered	Growth slowed, valuations rose
Microsoft	1998	Valuation multiples fell	2000/2001	Settlement, ordered to change practices	Growth slowed, valuations fell through 2011
IBM	1969	Valuation multiples fell	1982	Dropped lawsuit	Growth slowed, valuations initially rose but then fell

Source: Goldman Sachs Global Investment Research Global Research. 17th June 2019.

Figure 14: The top five tech firms make up more of the technology sector's value than in the past

US technology companies

Share of total US stockmarket value, %



Source: The Economist and Schroders. *As at 31st July 2019.

Regulation was not written for the digital age

The problem for US regulators is that current antitrust laws make it difficult to win a lawsuit unless it can be demonstrated that consumer prices have increased due to monopoly power – something which is challenging to prove given that many superstars' products are often cheap or even free (Amazon's online retail business, Google's search engine and Facebook's social network are just a few examples). There is also greater understanding of the importance of barter in Big Tech business models: a trade between access to customer data and a helpful service. Nevertheless, the US Department of Justice's antitrust chief recently stated that free and cheap products would not shield Big Tech from further regulatory scrutiny[25].

On top of this, Big Tech bears an uncanny resemblance to the US railroad monopoly of the 19th century, where just six rail companies owned or controlled 90% of the market for anthracite coal[26]. As Rana Faroohar of the Financial Times puts it:

> **"The internet is the railroad of our times – an essential piece of public infrastructure over which much of the world's commerce and communication is now conducted."[27]**

These companies, however, were eventually broken up to prevent them from creating and dominating a marketplace. Such parallels have spurred a number of politicians to demand that digital platforms should become regulated as public utilities given their increasing size, influence and market power. Taken together, it seems likely that antitrust enforcement will evolve to rein in Big Tech.

Superstar status is not permanent

Aside from rising regulatory risk, it is not a one-way bet that such companies will dominate forever either. Today's dominant firms could be tomorrow's Nokia or Blackberry. Research from the McKinsey Global Institute shows that superstar firms come and go - nearly 50% of all superstars fall out of the top 10% by economic profit in every business cycle and many of them fall to the bottom 10%, suggesting that the superstar status is contestable[28].

Compared with the dotcom bubble, the technology industry is also looking more vulnerable and concentrated today. As at 31 July 2019, the top five companies in the technology sector accounted for half the industry's stock market capitalisation (Figure 14). That is slightly higher than at the previous peak in early 2000, before market turmoil soon ensued. Although the biggest five stocks accounted for an even larger slice of the total US market in the 1960s and 1970s, what makes the current situation more unusual is the dominance of just one sector. The technology sector currently makes up around 25% of the total US stock market value, which is just shy of the peak reached during the dotcom bubble.

25 "US antitrust chief issues warning to technology giants." Financial Times, 11th June 2019.

26 "United States v. Reading Co." 16 Dec, 1912. 226 US 324.

27 "Big Tech is America's New 'railroad problem'". Financial Times, 16th June 2019.

28 "Superstars. The dynamics of firms, sectors, and cities leading the global economy." McKinsey Global Institute, October 2018.

Conclusion

Technological innovation, increased M&A activity and lax antitrust enforcement have enabled the largest US firms to consolidate their market power and generate abnormal profits. Shareholders have benefitted more than employees from this trend. However, this has contributed to income inequality and the populist movement in the US, which has in turn induced a host of regulatory challenges for certain superstars.

Investors are currently defending the valuations of tech firms based on their strong growth prospects. These have been protected by their high barriers to entry, but the spectre of increasing regulatory scrutiny could quickly alter this perception. This will have implications for both their performance and overall stock market returns.

History has shown that yesterday's winners could easily become tomorrow's losers. Passive investors are most exposed to this risk materialising. But rigorous analysis of individual companies and their prospects can help investors to manage the dangers that may lie ahead.

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