CASTLEFORGE PARTNERS

20 May 2021

A BASIS FOR VALUE

Howard Marks is worried that value investors have lost the plot. In his January 2021 memo, "Something of Value", he writes that their obsession with cheapness—or more specifically, with a naïve definition of cheapness—has confounded their ability to spot genuine value. This focus on "cheap" as a byword for "value" above all else has arguably produced some nasty results. For example, according to Morningstar, large-cap value funds underperformed large-cap growth funds by 32% last year, in their fourth straight year of underperformance. That underperformance has made many value investors question whether something has fundamentally changed.

Marks traces value investors' woes to what he dubs the "false dichotomy of value and growth" or the idea that there is a sharp delineation between the two. He argues that value investors must abandon this false separation and consider intangible traits too, like competitive advantage, economic moat, and long-term potential for earnings growth. Broad structural trends relating to macroeconomics, demographics, or technology also weigh heavily on investment returns in the long run, and investors who simply focus on firm-specific fundamentals may miss the forest for the trees. According to Marks, "successful investing has to be more about superior judgments concerning (a) qualitative, non-computable factors and (b) how things are likely to unfold in the future." In other words, they must also study the big maps.

We think that's absolutely right.

It is why Castleforge has long advocated and practiced thematic investing. With old economic moats threatened by new technologies and demographic patterns, whole industries stand vulnerable to disruption, and obsolete business models will not be saved by impressive-looking price-to-earnings ratios alone, nor will simple formulas help investors identify the disruptive winners. It's no good to have the best deck chair on the Titanic, as we sometimes say.

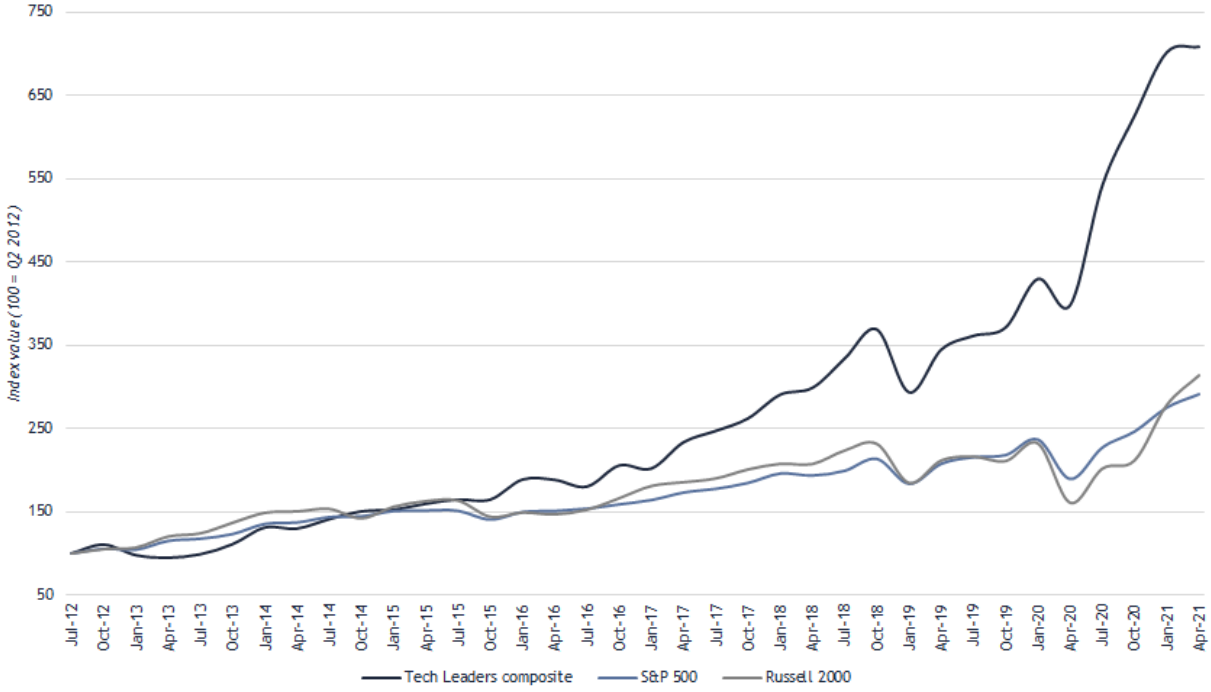
Then, Marks moves on from what we might term a "minor transgression" to full-on heresy as far as the holy community of value investors might be concerned. While Marks specifically does not advocate that many of today's pricey growth stocks are appropriately valued (even calling some of their valuations "laughable"), he does at least question the logic that especially the "Tech Leaders" (let us define that as Facebook, Apple, Alphabet, Microsoft, Tesla and Amazon, which now make up over 20% of the S&P 500 market cap) will ultimately have to revert to the mean and that they cannot enjoy "fade-defying business model[s]" over our investing careers.

That's quite a bombshell (at least to value investors), and one that we are not going to jump on directly. Whether or not tech companies are absolutely overvalued can be left to Marks and the equities community to decide. Instead, more important for us is that, if investors like Marks are valuing companies' "future prospects" not simply by using easily calculable metrics like PE ratios, then on what key set of assumptions about how the future will look are they relying?

Thus, we began writing this memo with a simple goal in mind: that understanding these assumptions is key to improving our ability to make investments in the real estate markets. As an owner of a flexible office business around the UK, and of central London office buildings often leased to the very high-growth businesses to which Marks refers, we were interested in the durability of their business models, especially those of many of today's Tech Leaders.

As we explain in this note, we noticed the valuations of these businesses are heavily reliant on their terminal value, which means that investors need to have a view on what the future looks like. It would be prudent to recognise how we believe the world *might* change and how that would impact investors' potentially correlated investments and valuation assessments, so that we can make our own investments that are hedged/protected in the event those changes do occur.

FADE-DEFYING VALUATIONS?[1]



As Marks challenges us, "it's hard to make a convincing case that today's market is too high if you can't explain why its tech leaders are overvalued". We used that challenge not as a way for us to "disprove" these valuations (in fact, over the course of researching for this memo, we have become *less* convinced that the largest tech companies are likely to revert to the mean on their own). Instead, we saw this as an opportunity to better investigate just why we think these valuations are what they are.

Specifically, we believe that investors' perception and evaluation of companies' future prospects—that is, the growth and discount rates applied in their future cash flows, especially for the Tech Leaders—depends very much on a world twenty years from now looking strikingly similar to how it looks today.

We believe two areas in particular materially impact Tech Leaders' valuations, and could look very different in the next couple decades: (a) interest rates and (b) antitrust regulation and legislation.

Section I. The Impact of Low Interest Rates

Low Rates Allow the Market to Wait Patiently for Immense Future Potential Pay-offs

Seth Klarman has often remarked on how low interest rates have favoured growth stocks of late. As a result of low rates, Klarman believes, companies like Tesla have soared to levels "beyond all reason". One suggestion as to why this is the case, encapsulated by a one-liner from a Wall Street analyst, is that Tesla is "expensive [based] on what we know, and cheap [based] on what we don't [know]." In other words, investors seem to be latching on to the monumental promise of high future cash flows in industries that could literally change the world, which are now discounted at low levels.

Indeed, in an ultra-low interest rate environment, it's (arguably) reasonable to place a lot of value on "what we don't [know]". Consider two companies:

[1] Tech Leaders composite includes Apple, Amazon, Facebook, Google (Alphabet), Microsoft, and Tesla. Market data are from Trading Economics, Federal Reserve Bank of St. Louis, and FTSE Russell.

- Company A, which has a low starting cash flow of $1 but a high 25% compound annual growth rate ("CAGR") over 20 years; and
- Company B, which has a more modest 6% cash flow CAGR over those 20 years but a higher starting cash flow of $10.

When you discount using the current 20-year risk-free rate of around 2%, you find that about a third of Company B's present value derives from what investors expect to receive in the next 10 years. Alternatively, in the case of Company A, only about 5% of the present value derives from the next decade; in fact, over two-thirds of Company A's present value derives from its expected terminal value 20 years hence (and *that*, of course, depends on what exit multiple you choose to use).

This lopsided distribution of value creates a powerful reason for companies to focus on the distant future—and, in practice, many of the Tech Leaders have done just that. For example, Facebook purchased Oculus Rift in 2014 for $2 billion, an investment based on the company's view that virtual reality ("VR") and augmented reality ("AR") could follow smartphones as the next major platform. One can presume Facebook wanted not only to layer its social network on top of someone else's platform (like iOS and Android devices) but to *own* the platform as well, and it figured that Oculus could help. But just how far into the future was Facebook looking?

In a recent interview with The Information, Mark Zuckerberg speculated that the proliferation of VR and AR could "start to come about in the 2020s… [but] may not reach the full scale until… the 2030s"—meaning that Facebook made a $2 billion acquisition for a company that *could maybe* develop the platform that *could maybe* succeed mobile phones *in 15-20 years*. That doesn't imply that Facebook's acquisition of Oculus was mistaken; companies that operate in fast-changing industries must invest in innovation to stave off disruptive competition. Yet Facebook's ability to invest billions of dollars in these types of projects depends on the market's willingness to allow companies to focus on the distant future.

Investors can't be blamed for admiring the S&P 500's tech companies' promises to solve humanity's problems in exciting and uncharted ways. After all, it's not like General Mills is going to save humankind with a Lucky Charms that doesn't turn the milk blue. Still, we wonder: if interest rates weren't so low, would the market be so patient in waiting for these "unknown unknowns"?

Ultra-low Rates Helped Tech Leaders Maintain Market Leadership

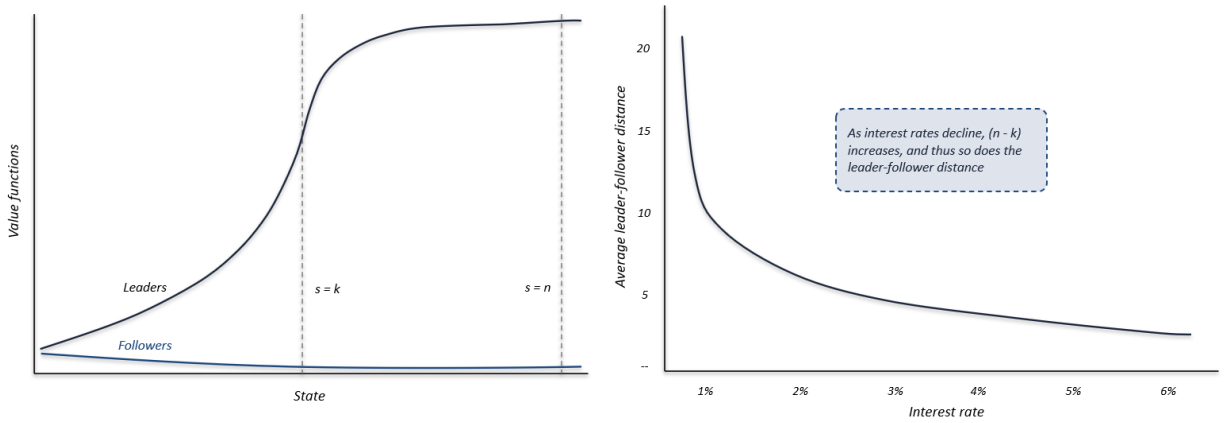
In a recent paper, Ernest Liu, Atif Mian, and Amir Sufi argue that extremely low (i.e., near-zero) long-term real interest rates can lead to more concentrated markets, higher profits for dominant firms, and lower aggregate productivity growth[2]. Their paper may help explain the status quo—in which a small number of powerful tech companies have entered markets through disruption and then maintained their dominant positions through large amounts of investment, all with the help of near-zero interest rates.

Typically, lower interest rates incentivise *all* market participants to invest more. However, according to Liu, Mian, and Sufi, that general principle does not always hold in an environment of ultra-low interest rates. The author's model creates a value function of a firm depending on how far ahead of fellow participants that firm is (head-to-head would equal a state $s = 0$, and $s > 0$ indicates that a firm is ahead of its competitors).

The model shows that a firm's value is relatively large after it has become the market leader ($s > k$). It wants to remain there, and thus will invest further until it is secure in its dominant position ($s = n$). After this point ($s > n$) the incremental investment is not worth it. However, the leader-follower state where point n occurs (i.e., how far from $s = 0$) depends on where real interest rates are.

[2] See Ernest Liu, Atif Mian, and Amir Sufi, "Low Interest Rates, Market Power, and Productivity Growth" (2020).

ULTRA-LOW REAL INTEREST RATES CAN REDUCE COMPETITION AND SOLIDIFY DOMINANCE[3]



As real rates decline, the model shows that (*n* – *k*) grows indefinitely, because the leader wants to avoid the future prospect of falling back to more competitive, less profitable, states. At a near-zero time value of money, "even the distant threat of losing market power is perceived to be imminent" to the patient leader, and the leader invests (e.g., Facebook's 20-year call on AR).

Conversely, a symmetric argument does not apply to the followers. Low interest rates motivate investment only if future leadership is attainable, but as rates approach near-zero levels, the followers recognise the leader's motivations and see it continue to invest to pull further and further ahead. Thus as rates tend to zero, it becomes infinitely costly to overcome the competition, and the prospect of becoming a future leader is perceived to be too low even for a patient follower discounting at a near-zero time value of money. Instead, the followers opt to invest less—which benefits leading firms, produces higher levels of market concentration, and reduces productivity growth.

What's more, we think this model implicitly shows how the Tech Leaders have managed to achieve and preserve their current positions. The authors note that their model assumes that follower firms can only gain market power by making incremental gains—i.e., without leap-frogging past incumbent firms by developing some disruptive new technology. That's a major caveat to the model, and one that often *does not hold* for the industries disrupted by today's Tech Leaders. While these companies first established their dominance by leap-frogging old industry stalwarts, they now maintain their power with the help of ultra-low interest rates.[4] What's especially striking is that rates wouldn't need to rise by much to disturb the status quo; the paper's authors emphasise that the concentration effect occurs when and only when the real interest rate approaches zero.

And since market concentration has turned leading firms into integral components of the entire global economy, investors' portfolios could be exposed to market-leading firms in non-obvious ways: for example, by owning long duration government bonds together with the S&P 500 index, as well as UK logistics space leased to Amazon and residential properties in San Francisco, which essentially serves as a labour pool for Big Tech. And so, we believe that investors' portfolios may more correlated than they think.

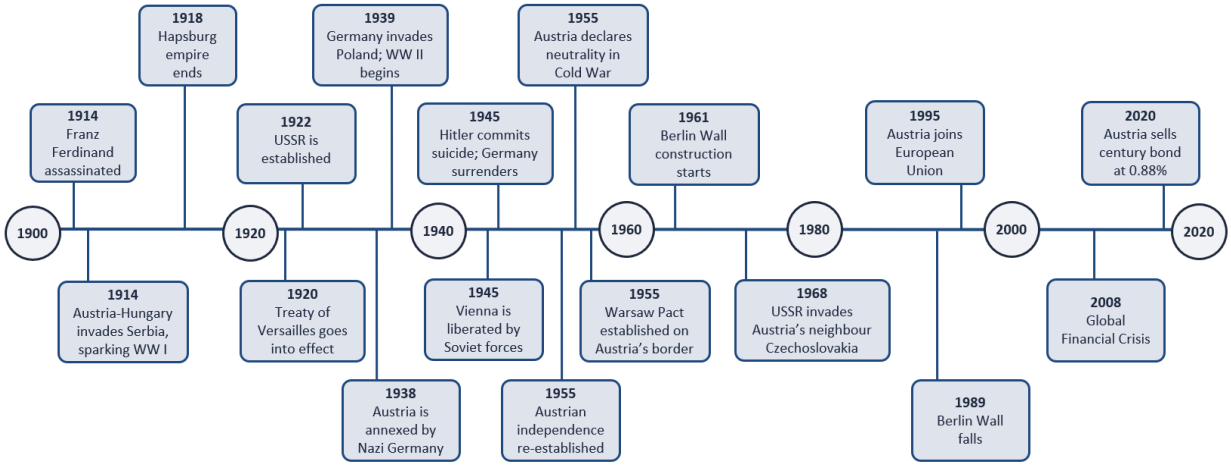
The Distant Future is Exposed to Negative Future Outcomes, Not Just Positive Ones

Some investors seem to forget that "cheap [based] on what we don't [know]" comes with a flipside, which creates another source of correlated exposure in investors' portfolios. Although the distant future could contain tremendous upside, a lot could go wrong before then. Given our conviction that the world will indeed look considerably different in the next few decades, we think that risk has been underappreciated. We're puzzled by investors' appetite for the "Austrian century bond", issued for a second time in 2020 at a YTM of 0.88%; after all, a century is a long time.

[3] Chart is based on Liu et al. (2020)

[4] If you are wondering why new entrants don't just leap-frog today's Tech Leaders, that is a question we cover in Section III.

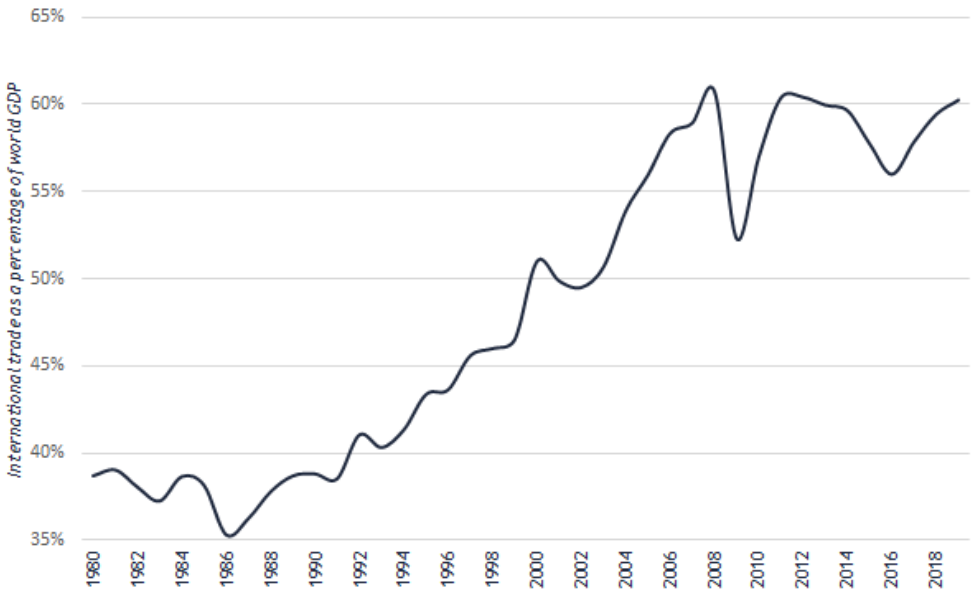
A LOT CAN HAPPEN IN AUSTRIA IN (JUST ABOUT) A CENTURY



How exactly is the world evolving? Start with geopolitics. The Pax Americana, which characterised global power dynamics from 1989 to the middle of the last decade, has finally passed, and a multipolar world order is now emerging in its place. Although much remains unsettled, the new world order will surely be more chaotic than the last one—and that's probably bad for big business.[5]

Meanwhile, the Harvard economist Dani Rodrik has observed that the political untenability of globalisation in developed countries is already apparent, and he predicts that it will lead to stricter financial regulation, heightened trade barriers, and tighter capital controls.[6]

GLOBALISATION HAS ALREADY STARTED TO SLOW[7]



[5] Geopolitical strategists and chiefs of global fund managers have noted that there is considerable risk for conflict in the future. According to Ian Bremmer of Eurasia Group, we have already entered a "G-Zero" world, where no single country has enough clout to enforce the stabilising institutions from which investors benefitted over the past several decades. Indeed, Michael O'Sullivan, the former CIO of Credit Suisse Wealth Management, often warns about the looming rise of great power competition, particularly over rare earth materials and natural resources under the Arctic. O'Sullivan notes that "the potential is high for friction, misunderstanding and conflict."

[6] See Dani Rodrik, Straight Talk on Trade (2017).

[7] World Bank

Ultimately, these shifts will threaten the stable, mobile, free-trading, and hyper-globalised world of the Washington Consensus. That also does not bode well for many Western multinational corporations, which thrived in yesterday's open world.

This shift matters because it suggests that the long-term picture—where low interest rates have enabled investors and firms to focus—is now riddled with structural challenges. Looking ahead, smaller addressable markets, constraints on knowledge-sharing, elevated geopolitical tensions, and more stringent capital controls will likely weigh negatively on companies that operate globally. As a result, all-in bets on the long-term strike us as increasingly risky given the new geopolitical framework we are entering.

Section II. Forces Driving Real Interest Rates Could Be Changing for the First Time in Decades

So far, we've made a few observations about real interest rates. First, we pointed out that low interest rates have enabled, and even encouraged, firms to invest in the extremely long term. Second, we also suggested that low interest rates have created conditions that favour market leaders, by entrenching their dominant positions. Finally, we suggested that long-term bets could generate more risk than many investors assume. Our point has been modest: that many portfolios may have more exposure to low interest rates than investors believe.

However, as to suggesting that interest rates will soon rise and wreak havoc on Tech Leaders, we will proceed with caution. True, markets have already started to price in modest near to medium term inflation and higher longer term rates (the 10-year Treasury has jumped from 0.6% to 1.7% already over the last year).

Still, rather than make specific predictions on the future movements in interest rates, we think it's more useful to try to understand the underlying forces that have driven interest rates in the past few decades, and then consider whether those forces are likely to change.

The Natural Rate of Interest Has Seen a Multi-Decade March Downward

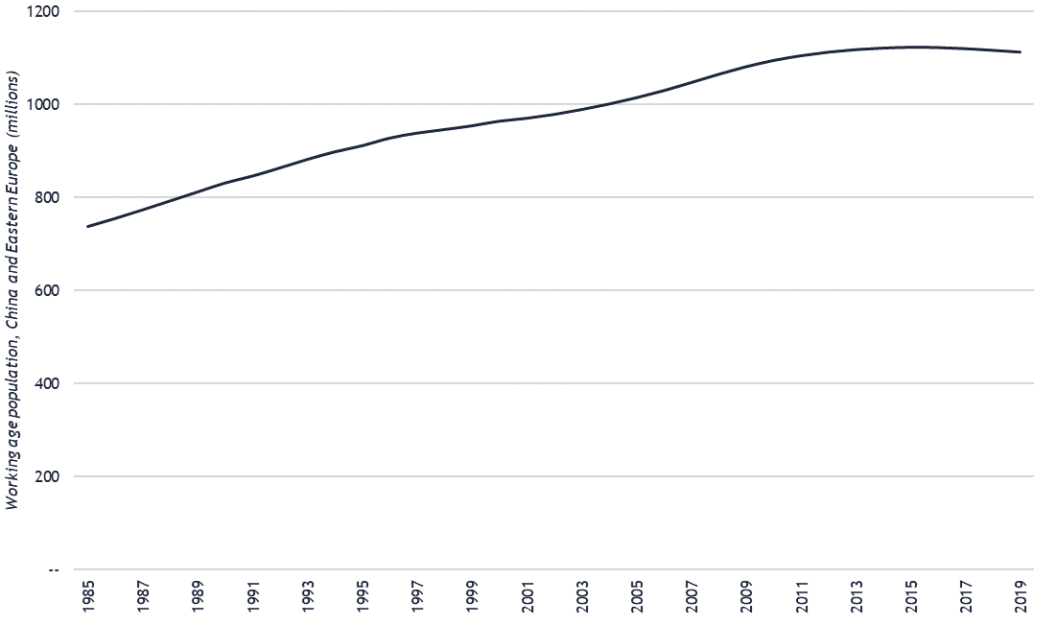
At a higher level, over the past several decades, interest rates fell because desired savings increased at the same time that desired investment decreased. On the supply side, starting in the 1980s, explosive growth in China's working-age population coincided with globalisation to massively expand the global labour force. The integration of Eastern European countries into the world economy, following the collapse of the Soviet Union, added fuel to that fire and further expanded the global supply of labour.[8] As the world's working age population started to accumulate savings, these savings made their way into the international financial markets.

At the same time, on the demand side, cheap labour abroad enabled firms in advanced economies to invest less, both in relatively expensive domestic labour and also in the physical capital that would have been used to substitute for higher domestic labour costs. That decline in demand for investment was likely exacerbated by additional forces—like an exogenous fall-off in innovation (according to Robert Gordon) and/or a general decline in aggregate demand in developed countries (according to Larry Summers).

The important point is that the curve for desired savings moved outward at the same time as the curve for desired investment moved inward, leaving us with a falling natural real rate of interest.

[8] Charles Goodhart and Manoj Pradhan develop this idea in their recent book, The Great Demographic Reversal (2020).

THE GLOBAL LABOUR FORCE EXPANDED RAPIDLY BETWEEN 1985 AND 2010[9]

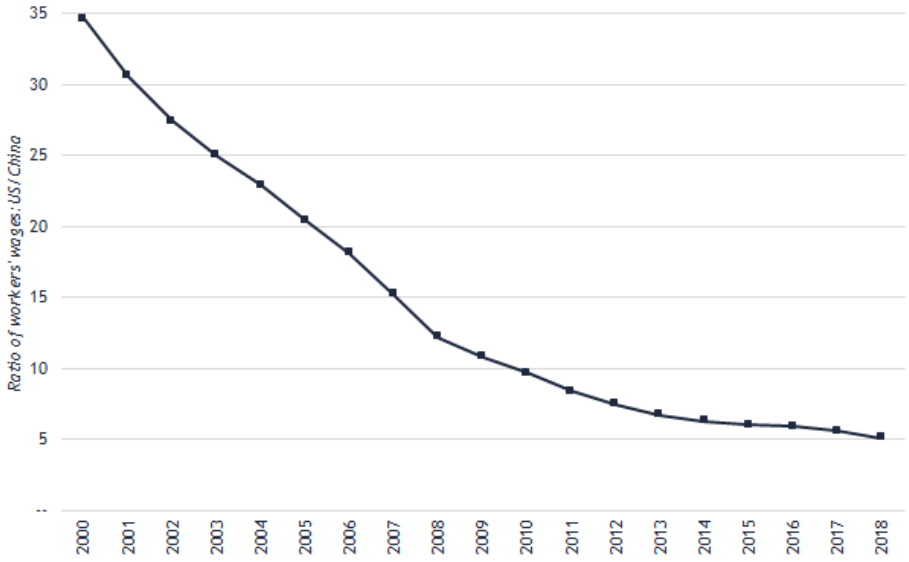


Will all these conditions persist? Probably not.

Reversing the Factors that Led to Downward Pressure on Rates

Start by considering the supply of savings. China's working-age population peaked in the last decade, and it will soon start to shrink. That demographic shift implies a major departure from the conditions that prevailed for the last thirty years. Most immediately, it will reduce the global supply of middle-aged, inexpensive labour. As workers in China grow older, that cohort will start to dissave, by consuming more relative to what it produces. This will tend to shift the curve for desired savings inward.[10]

THE RISING COST OF OFFSHORING IN CHINA[11]



[9] United Nations Population Division

[10] Much of the literature suggests aging is inflationary, as those not working consume more than they produce (and save). It's just that savings tend to get spent on healthcare, not Playstations.

[11] Chart is based on data drawn from Goodhart and Pradhan (2020).

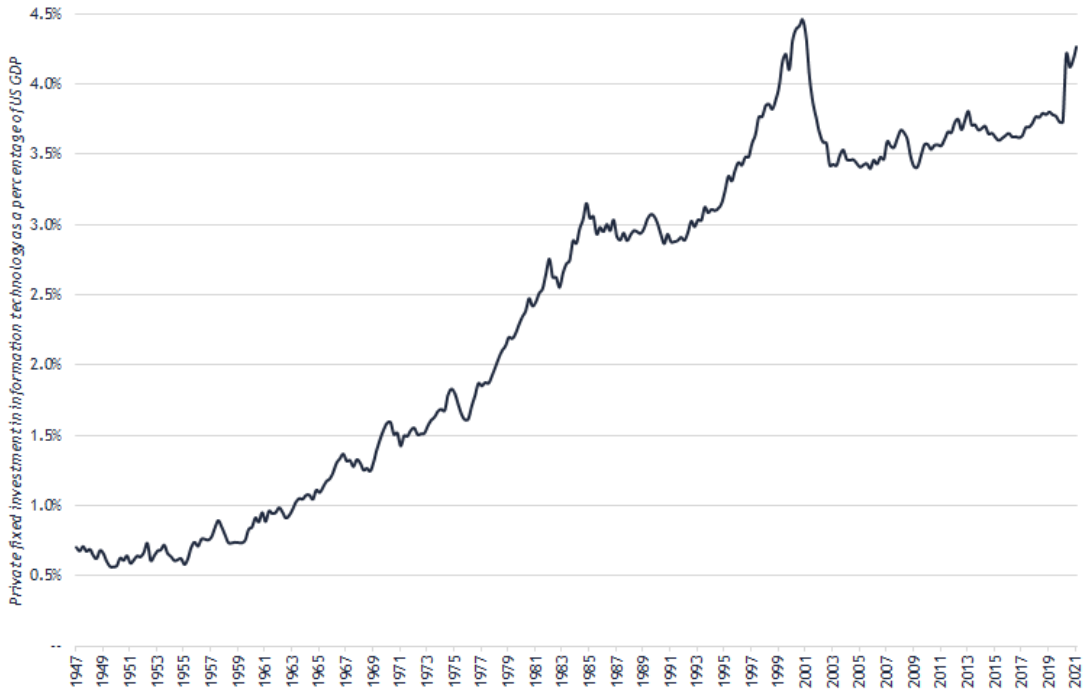
We can then look at demand for investment to see that, surprisingly, the level of desired investment could also increase in the next decade, even in the face of aging populations.[12] As the global supply of cheap labour shrinks and emerging economies get wealthier, offshoring will grow increasingly infeasible (mathematically, not just politically). In 2000, American wages exceeded Chinese wages by a factor of 35; by 2018, that figure stood at just five.

Globalisation is now beginning to unwind—a process that's increasingly accelerated by political pressures in advanced economies, as we discussed above. As globalisation unwinds, producers in advanced economies will need to spend a lot more on costlier domestic labour just to maintain current production levels. When that starts to happen, we can expect domestic labour in advanced economies will get pricier, as workers regain power and extract higher wages.[13]

In turn, firms will likely find it necessary start to invest in labour-saving technologies.[14] More recently, the pandemic has also hinted at an acceleration of investment in innovation: after about two decades of stagnation, private fixed investment in information technology (as a share of GDP) rose sharply in the past year. While much of that increase was a direct response to the pandemic, it nonetheless signals an important change. Promising new technologies—from mRNA platforms and AI to solid-state batteries and supersonic passenger jets—seem to be emerging at a faster pace.

And as China and the United States increasingly compete in great power politics, they will pour money into the renewable-energy technologies needed to ensure their own energy security. Indeed, even Robert Gordon has revised his productivity projections for the next decade upward, in recognition of the fact that technologies adopted during the pandemic could produce lasting effects on productivity. If so, the savings glut could easily disappear.

AFTER DECADES OF STAGNATION, FIXED INVESTMENT IN TECHNOLOGY IS RISING[15]



[12] Falling aggregate demand is an oft-cited reason for why aging will keep interest rates low, but in that argument, the timing could be out of synch: desired investment falls at a slower pace and to a lesser extent than, and then only after, a fall in desired savings. See Goodhart and Pradhan (2020) for a fuller version of this argument, and especially for an explanation of the unique Japanese experience if you're now asking "Yeah, but what about Japan?".

[13] Marko Papic of the Clocktower Group has repeatedly emphasised that rising labour power in advanced economies will be a major theme of the next decade. See Papic, Geopolitical Alpha (2020), one of our favourite books of the last year.

[14] For more on this point, see Bain & Company, Labor 2030: The Collision of Demographics, Automation and Inequality (2018). The report projects that American companies alone could invest $8 trillion in automation-related technologies by 2030.

[15] Federal Reserve Bank of St. Louis

In short, we think that the next decade will see elevated demand for investment—in the face of a major demographic shift that will likely reduce the supply of savings. Higher real interest rates strike us as a plausible outcome. We don't think higher interest rates are guaranteed, and we certainly don't think that such a spike would happen overnight. But the tides are clearly changing. After decades of declining real interest rates, low inflation, and low productivity growth, the world is now moving in the opposite direction. Investors should prepare to capture the new direction of travel, especially considering that it could come faster than markets expect.

To summarise, in Section I and Section II we have noted that:

- Low interest rates have encouraged investors and growth companies to direct their efforts and capital towards the long-term future;
- In particular, ultra-low interest rates have enabled Tech Leaders to achieve and to maintain market dominance;
- But, the era of low interest rates may not last much longer, as the demographic and globalizing forces that kept rates low for the past few decades now start to reverse; and
- As a result, if interest rates begin to trend up, then Tech Leaders could suffer.

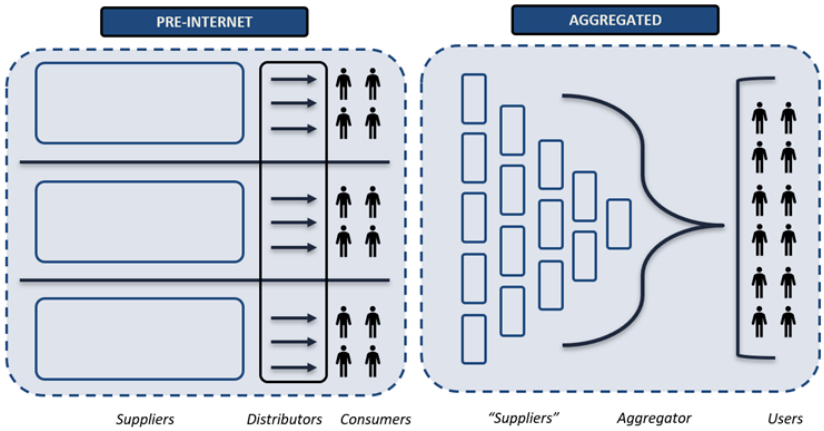
Section III. The Impact of Outdated Regulation and Antitrust Solutions

There is another large reason to worry about the valuations of the Tech Leaders—reasons that have less to do with macroeconomics and more to do with the political economy. In particular, we believe that investors have adopted too rosy a view of the regulatory environment that currently allows leading tech firms to dominate, by taking for granted that American antitrust policy will remain friendly to Big Tech. As we'll argue below, we think that's probably mistaken.

New Industrial Dynamics Are Often Misunderstood by Regulators, Who Are Then Slow to React

Why are companies like Facebook so valuable? What makes their products so good? Part of the answer involves network effects: companies like Facebook get better for users as they grow larger. (The more friends you have on Facebook, the more useful you'll find the platform.) Journalist Ben Thompson's "aggregation theory" argues that tech companies drive value by directly integrating forward with end users at scale.[16] Similarly, investors like Bill Gurley and David Sacks demonstrated the virtuous circle that drives Uber's business, where more driver liquidity produces a better customer experience.[17] Until recently, however, regulators have failed to grasp just how powerful these network effects could become.

TECH LEADERS ACHIEVE MARKET POWER BY INTEGRATING FORWARD AT SCALE[18]

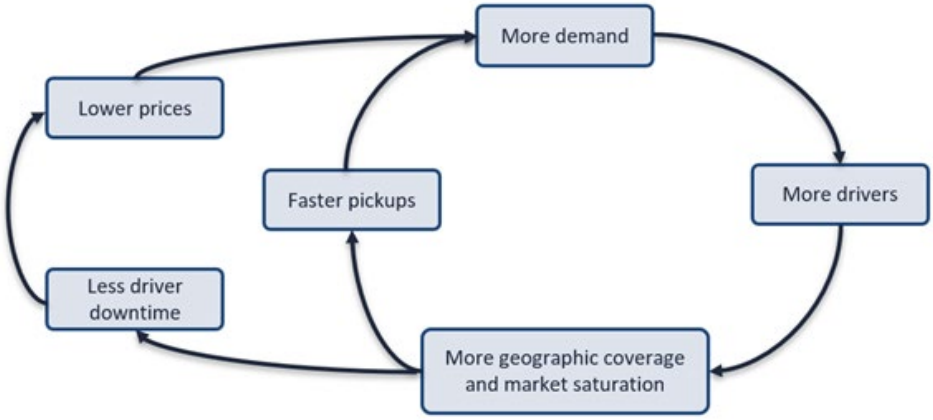


[16] See Ben Thompson's blog post, "Aggregation Theory" (2015).

[17] See Bill Gurley's blog post, "How to Miss by a Mile: An Alternative Look at Uber's Potential Market Size" (2014).

[18] Diagram is based on Thompson (2015).

UBER'S VIRTUOUS CIRCLE AND THE POWER OF NETWORK EFFECTS[19]



That's understandable. Regulation often takes a long time to catch up to new realities because regulators need to understand what they're trying to regulate in the first place. History illustrates that point. For example, the Sherman Antitrust Act was signed in 1890, decades after railroad-track construction had peaked, and the Supreme Court didn't break up Standard Oil until 1911, even though Rockefeller had already become the dominant oil refiner in Pennsylvania by 1870.

Although there have recently been a few attempts to rein in Big Tech (like the EU's Digital Services Act and Digital Markets Act), governments have so far relied mostly on antiquated regulatory frameworks, which are ill-equipped to deal with modern-day market leaders. As regulators start to understand how Big-Tech companies work—and why they've managed to dominate markets—we think that will change.

Facebook and Google Are Monopsonies (not Monopolies) and Pay Highly to Maintain That Status

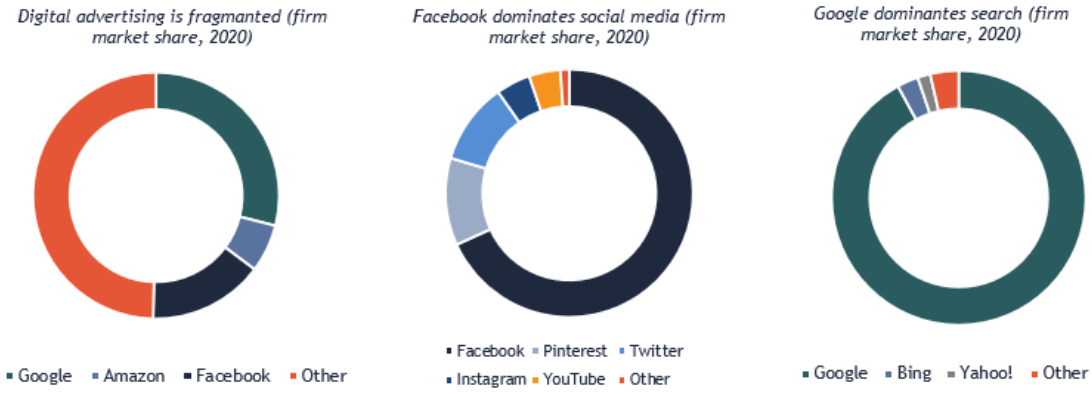
The conventional antitrust argument against Big Tech seems to rest on the idea that Facebook and Google (for example) control monopolies in their respective markets. Are Facebook and Google actually monopolies, though? We don't think so, at least in the strict sense of the term 'monopoly'. Technically they're *monopsonies*—a distinction that many tech observers have grasped for some time, but which regulators are only now coming to appreciate.

Why are Facebook and Google monopsonies, not monopolies? They certainly hold market-dominating power over their users. *But their users are not their customers; instead, users are their suppliers.* We think of Facebook and Google as companies that operate the largest "focus groups" in world history. They extract sophisticated information from their focus groups, by mining user data, and then do what all traditional advertising firms do—sell that information to their actual customers: companies that want to buy advertising space.

Yet Google, Facebook, and Amazon only control about 30%, 15% and 6% of the online advertising market, respectively—and the market for online advertising is itself only a sub-set of the entire advertising market. That hardly looks like monopoly power. Since Facebook and Google don't look like traditional monopolies (because they aren't), traditional antitrust frameworks that attempt to improve consumer surplus with the user as the customer haven't managed to do much.

[19] Diagram is based on a 2014 tweet by Uber investor David Sacks.

NOT YOUR GRANDFATHER'S MONOPOLIES[20]



However, Google controls 92% of search, and that *is* market dominance—but it is dominance in the market for information about Google's users, which amounts to almost all users of search. In other words, Google is the only "focus group" where you can go if you are willing to accept your position as a focus group participant, where the *quid pro quo* is "Tell me what you want to know but allow me to track that and sell the resulting insight to someone else, and I'll tell you what you want to know for free". Something similar is true of Facebook, which controls over 60% of all social media. So, although these companies may not hold monopolies over consumers of their products, they do hold control over the "supply" of their users.

What's more, leading tech firms spend a lot of money to maintain their dominance over their suppliers (of information). Facebook's acquisitions of Instagram, WhatsApp, and Oculus—for over $20 billion in total—were all ways for the company to preserve its position as the only focus group available to people who want to communicate virtually with their friends. With respect to Google, the Department of Justice recently reported that Alphabet paid Apple about $12 billion in a single year to remain the iPhone's default web browser. That figure amounts to about a quarter of Google's net income in 2020 pre-payment. That suggests two points: first, that Google sees a quarter of its profits paid in the form of "protection money" as money well spent—necessary for the company's survival—and second, that Apple's own dominance in mobile platforms allows it to extract a level of protection money that Tony Soprano could only dream of.

Tech Leaders Prevented Technological Leap-Frogging By Entrants, but Regulators Have Not Acted

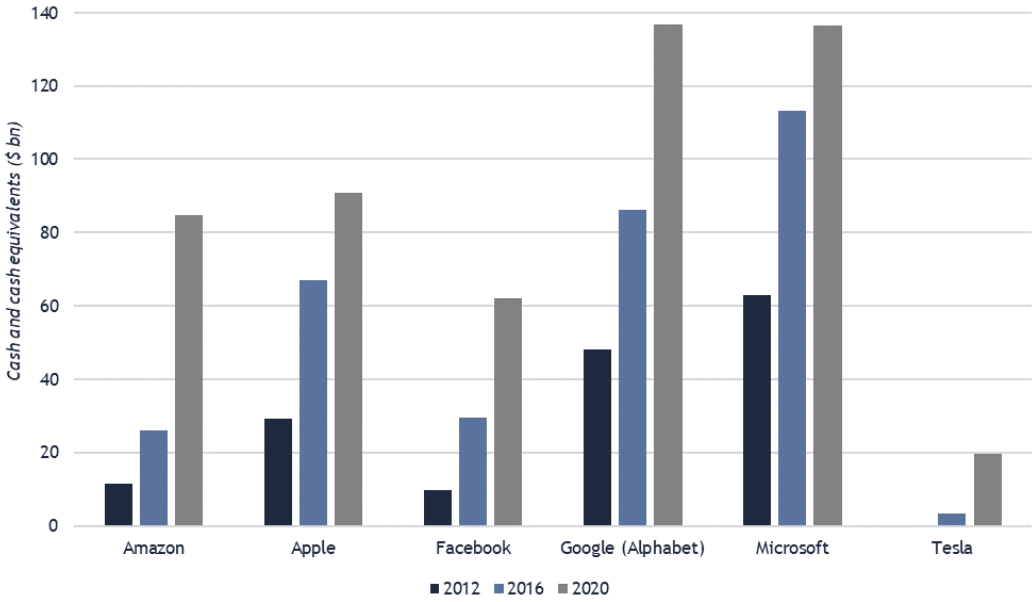
There are two ways to invest in product innovation: through M&A (buying) or in-house R&D (building). While most top tech companies do still invest massively in R&D, some industry observers have argued that that's just to keep the trains running on time. For example, Peter Thiel often attributes Google's enormous cash balance to its inability to innovate. *Why let all that money sit in the bank, where it earns almost no return, unless you really can't figure out how to profitably deploy it?* In a 2012 debate with Google's then-CEO, Eric Schmidt, Thiel claimed that "the intellectually honest thing to do would be to say that Google is no longer a technology company" and just return profits to shareholders—but, as he pointed out, that $30-50 billion one-time dividend would be tantamount to admitting that Google had no good ideas left.

But the Tech Leaders *do* deploy their significant cash balances in the service of acquisitions when upstart competitors threaten their dominance—which is arguably a major reason they chose not to distribute their cash. The competition law community refers to these acquisitions as "killer acquisitions". A recent paper authored by Colleen Cunningham, Florian Ederer, and Song Ma surveyed M&A activity in the pharmaceutical industry and found that a number of "incumbent firms may acquire innovative targets solely to discontinue the target's innovation projects and pre-empt future competition."[21] We think the Tech Leaders have adopted this practice in order to defend themselves against leap-frogging.

[20] Wall Street Journal, StatCounter. Figures for social media market share based on amount of traffic each site generates for other sites.

[21] See Colleen Cunningham, Florian Ederer, and Song Ma, "Killer Acquisitions" (2021).

SAVING UP FOR THE NEXT KILLER ACQUISITION?[22]



Many argue we should not worry about killer acquisitions. Benedict Evans argues that the history of technology is a history of leap-frogging. According to Evans, "someone [always] works out that you can sail around the Cape of Good Hope and get directly to the Spice Islands without going through Venice anymore…at a tenth of the price". We agree generally, but we think a qualification is in order. Of course, innovation does occur—Shopify has come from nowhere to become a meaningful competitor to Amazon—but when poor regulation creates a situation in which innovative firms can be acquired in killer acquisitions without intervention by regulatory bodies, then the normal forces of creative destruction may lose their power.

Led by David Cicilline, the antitrust subcommittee of the US House of Representatives recently published a report that documents this strategy in action.[23] Unlike Evans's depiction of the 15th century Diaz, the speed at which information spreads today advantages the incumbents by enabling them to identify and neutralise competitive threats more quickly than in years past.

The report reveals that Facebook proposed an acquisition of Instagram for $1 billion *within 6 days of Instagram's debut on the Google Play Store in April 2012*. At the time, Mark Zuckerberg wrote to Facebook executives, citing concerns that Instagram posed a risk to Facebook. In February 2012, Zuckerberg said to David Ebersman, Facebook's Chief Financial Officer, that he had "been thinking about how much [Facebook] should be willing to pay to acquire mobile app companies like Instagram that are building networks that are competitive with our own." Most strikingly, when Ebersman asked Zuckerberg whether the goal of the acquisition was to "(1) neutralize a potential competitor; (2) acquire talent; or (3) integrate Instagram's product with Facebook's to improve its service", Zuckerberg admitted that the goal was "a combination of (1) and (3)."[24]

Politicians Are Responding to Tech Leaders' Dominance by Reforming the Antitrust Framework

The Tech Leaders themselves have argued that none of the behaviour detailed in the Cicilline report is illegal, *given existing antitrust laws*. A tech industry advocacy group, the Information Technology & Innovation Foundation, argued that "[it] privileges competition as the main goal—and assumes more is

[22] S&P Capital IQ

[23] Earlier we mentioned that we would address the possibility of leap-frogging today's Tech Leaders by new market entrants. A full read of the report, including an appended history of the Tech Leaders' M&A activity, shows clear intent to prevent new entrants from disrupting their dominant positions.

[24] See US Congress Subcommittee on Antitrust, Commercial and Administrative Law, *Investigation of Competition in Digital Markets* (2020).

always better...and dismisses consumer welfare and elevates producer welfare."[25] Under the existing regulatory framework, ITIF probably has a point. Competition for competition's sake has been subordinated since as far back as the 1980s, in favour of an interpretation of antitrust law concerned only with consumer welfare. As the ITIF argument goes, how could free services be anti-competitive?

For the last four decades, antitrust regulation in the United States has been dominated by a particular framework, pioneered by the legal scholar and judge Robert Bork in the 1970s. Bork interpreted the Sherman Antitrust Act as legislation designed exclusively to protect consumer interests. Influenced by Bork, policymakers and courts in the United States came to regard consumer welfare as the only relevant antitrust consideration. As Lina Khan explains, "today, showing antitrust injury requires showing harm to consumer welfare, generally in the form of price increases and output restrictions."[26] As we've pointed out, if you think of Facebook's consumers as its users, then it's hard to argue that Facebook's dominance reduces consumer welfare: Facebook costs members nothing, and it certainly does not restrict output (just the opposite, in fact).[27]

Yet Bork's framework is now fading, as regulatory authorities increasingly recognise its limitations in a world dominated by Tech Leaders. The Cicilline report portrays these companies as "the kinds of monopolies we last saw in the era of oil barons and railroad tycoons". Moreover, it explains that "antitrust agencies failed, at key occasions, to stop monopolists from rolling up their competitors and failed to protect the American people from abuses of monopoly power"—and it proposes a remedy: "Congress must revive its tradition of robust oversight over the antitrust laws and increased market concentration in our economy." Such a remedy increasingly seems forthcoming.

In March, the Biden administration nominated Lina Khan to head the FTC. (Khan served as Staff Council on Cicilline's antitrust subcommittee and played a major role in producing the report.) Biden also appointed Tim Wu, another leading critic of Big Tech, to the position of special assistant for technology and competition policy on the National Economic Council. The new guard has very different ideas about how to regulate the modern economy, and it's now empowered to implement them. The broad support that Khan received during her nomination hearing in April suggests that this shift has bipartisan support.

With that in mind, we think there are looming changes in American antitrust policy, and we believe these changes could upset Tech Leaders' fade-defying business models that partially rely on soft-touch antitrust policies.

We think that today's Tech Leaders should prepare for more regulation and antitrust enforcement. These shifts will put pressure on their dominant market positions. In particular, the killer acquisitions that have helped cement the Tech Leaders' power against leap-frogging may no longer be possible under this new regulatory regime. Without that ability to quash upstart competitors, there is little to prevent the disruptors from being disrupted themselves.

To summarise, in Section III we have noted that:

- We are in the early days of business models pioneered by Tech Leaders, and confusion about those how the business models operate has protected these companies from effective regulation;
- That's now changing, though, as political tides have shifted and new ideas about antitrust regulation gain prominence;
- This emerging regulatory regime could likely endanger the monopoly rents that Tech Leaders have lately enjoyed. And, as Tech Leaders lose their monopoly rents, they may lose their means of commanding the strong market control we see today—namely, costly spending on R&D and acquisitions; and
- Which means that the fade-defying elements of their business models could soon dissipate, spelling serious trouble for the Tech Leaders.

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[25] See Robert Atkinson, "Seventeen Flaws in the Cicilline Antitrust Report on Competition in Digital Markets" (2020).

[26] See Lina Khan, "Amazon's Antitrust Paradox" (2017).

[27] For a closer look at Facebook, Dina Srinivasan makes a convincing argument in "The Antitrust Case Against Facebook" (2019). In the case of Google, the customer is not the search user, but the online advertising buyer. Srinivasan's "Why Google Dominates Advertising Markets" (2020) is excellent here. If you are knowledgeable about the regulation of liquid capital markets, you may be shocked by the lack of any in the online advertising market, creating the exact sorts of conflicts of interest the SEC is charged with controlling.

Section IV. To Sum It All Up (and Some Implications for Real Estate)

We do not believe we have "proven" that the Tech Leaders are over-valued. However, we do believe that we have demonstrated that the market may not fully appreciate the impact of low interest rates and light-touch approaches to antitrust regulation on their business models and to their valuations. The underappreciation of these factors could mean that today's Tech Leaders are overvalued, in a world one or two decades hence that looks little like the one to which we have become accustomed. **We think these represent the biggest risks to their valuations.**

More importantly, the dominance of the Tech Leaders in all walks of investing life today points to knock on effects to other investments and asset classes, including real estate, to the extent that interest rates and the regulatory framework changes. Take for example that hypothetical investor whose portfolio consists of long-dated government bonds, the S&P 500, large warehouses in the UK and multi-family residential real estate on the US West Coast. The impact to long-term interest rates should be clearly understood in the context of the bond portfolio, but what about the other assets?

To start, the biggest six tech companies make up over 20% of the S&P 500, and so the index is tied to their prospects. A taste of what would happen if large technology companies were to falter could be seen over the prior twelve months as apartment rents in San Francisco fell by over 20% in a year as many tech workers fled the city. Moreover, Amazon made up a quarter of all new logistics leases signed in the UK in 2020, meaning everyone invested in UK logistics should be aware of how rates and antitrust impact their portfolios. A change to either—that we believe is more likely to happen than the market thinks—could have reverberations across seemingly very different asset classes and geographies.

Nothing we investors can do will shape the outcome of the aforementioned narratives, and because staying out of the market is an ineffective solution, we must ask ourselves how we can future-proof our portfolio to be able to respond to higher interest rates and a tougher time for the Tech Leaders.

We believe our focus on lower-/middle-market residential apartments provides both shorter duration income that is also closely linked to median wage growth, which should see tailwinds in the face of rising inflation and interest rates. Politicians of all stripes are calling for an increase in wages at the bottom end of the income distribution, and these increases would help power future rental growth. Furthermore, our own flexible office portfolio allows for us to manage a portfolio of both shorter (as short as one month) and longer term, traditional leases that will provide shorter- than-normal duration office income by providing flexibility and simplicity that our tenants increasingly value (especially after having successfully navigated Covid-19's impact on their businesses). Because most of our tenants are small- and medium-sized enterprises, they should arguably benefit from interest rates moving off from near-zero levels that have put them at a material disadvantage to their larger competitors.

And that's what "value-investing" means to us. It isn't a maniacal obsession with replacement cost or the price we pay per square foot. We think that those metrics are important (indeed, it's the first question we ask!), but we also think having a view on what the future might look like is important, even if the view in question is one over an industry's potential for growth. And perhaps more important is understanding how our own view on the future is different from the consensus view, since it affects the price we pay for covering off various risks.

If we can achieve our target returns in a world where our strategies would not benefit (in measures of outperformance) if the world in ten to twenty years looked a lot like it does today, then we'll have paid for insurance that didn't cost us very much, if at all. But if we can position our portfolio to materially outperform in a persistently rising-rate environment, where the prospects of the largest firms and many of today's Tech Leaders looked considerably less rosy, then we will have protected our investors from what we believe to be two large and yet under-appreciated risks over the coming years.