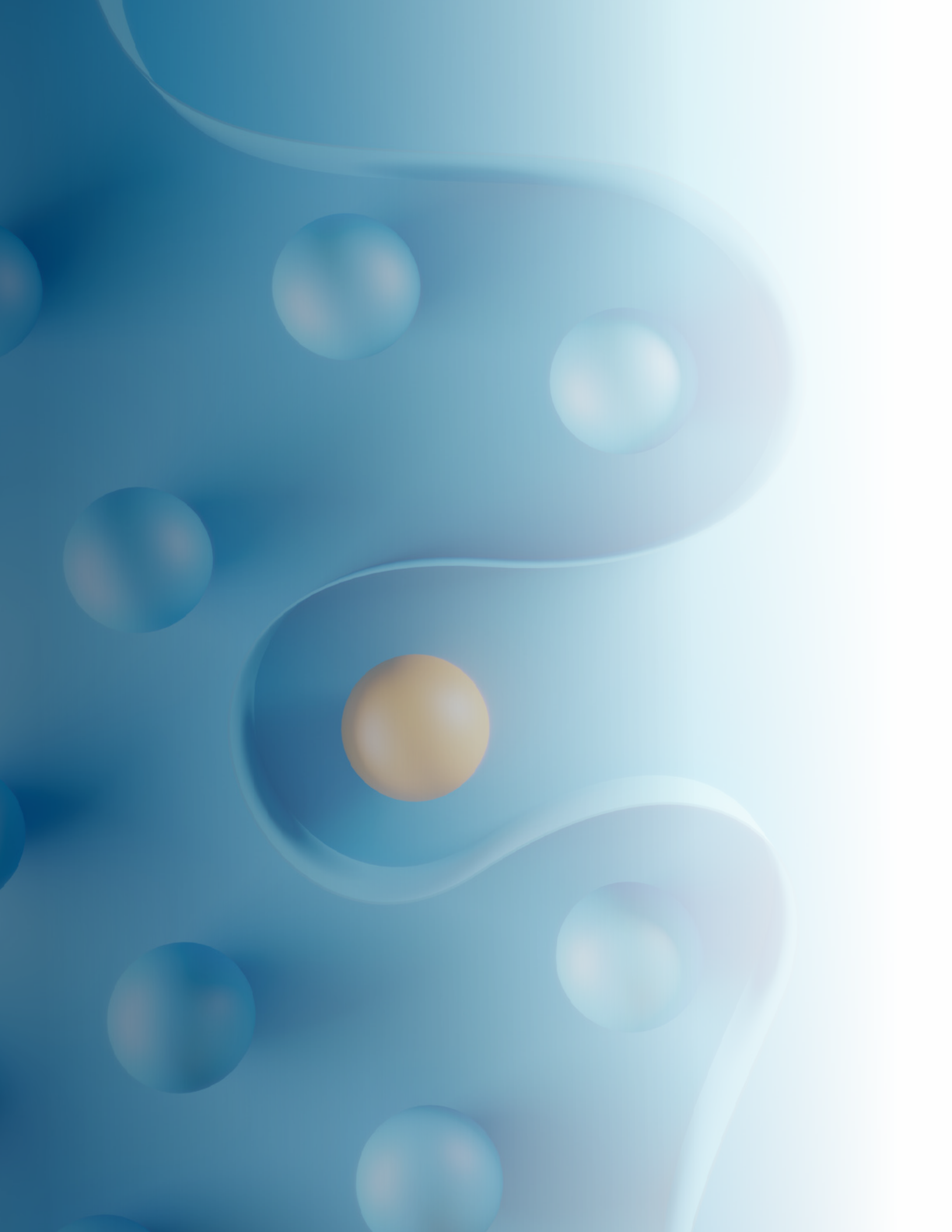
PGIM

MEGATRENDS

THE NEW DYNAMICS OF PRIVATE MARKETS

Investment Risks and Opportunities

FALL/WINTER 2022



INTRODUCTION

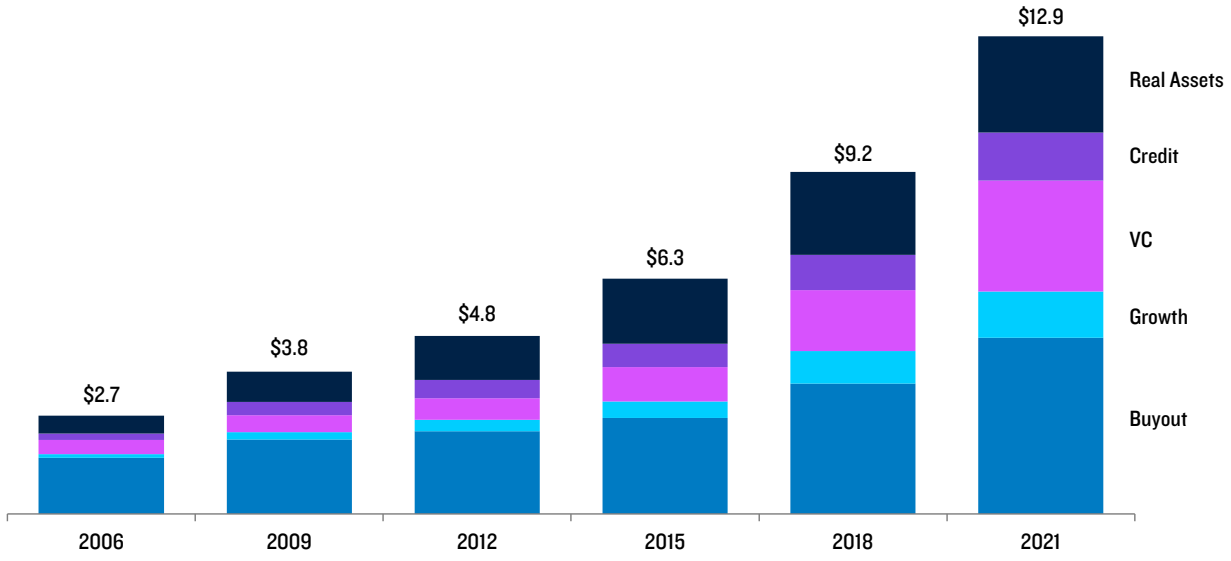
Private markets have provided farmers, entrepreneurs, corporate tycoons and property developers with access to capital for centuries. The first recorded private loan was almost four thousand years ago in Mesopotamia. But the modern era of private equity – focused on corporate funding – did not start until the emergence of non-family funded venture capitalists in the late 1940s.[1] Nevertheless, the current scale, growth and complexity of private capital is unprecedented – and it is radically altering the investment opportunities and challenges facing institutional investors.

The size and influence of private capital on the global economy today is staggering. Worldwide pools of private capital – including equity, credit and real assets – stand at over $12 trillion, double the size from just six years ago (Exhibit 1). In the US, private markets accounted for over 35% of new capital raised through bonds and equity in 2021 – compared to 20% in 2009.[2] Even as employers, private equity firms have grown to be among the world's largest. The portfolio companies of Blackstone alone employ roughly 800,000 people, making it the fourth-largest US-based employer.[3]

Why should investors care about these shifting dynamics? Quite simply, traditional models of companies raising capital through bank officers and stock exchanges have been disrupted. The resulting growth and transformation in private capital markets is opening new investment opportunities – as well as new sources of risk – for institutional investors. On the one hand, many private equity and credit markets are sufficiently scaled to allow investors to increase allocations, diversify portfolios and access potentially higher returns. On the other hand, investors need to

Exhibit 1: Private market funds have doubled in the last six years

Total net asset value and dry powder, US$ Trillion



Source: Pitchbook
Note: Real Assets include both real estate and infrastructure.

> *The current scale, growth and complexity of private capital is unprecedented.*

consider the illiquidity, embedded leverage, higher fees and limited transparency as well as potentially frothy valuations in some corners of private markets. To fully understand the new dynamics of private markets and the resulting investment implications, we have drawn on the insights of more than 40 investment professionals across PGIM's private alternatives, fixed income, and equity managers – as well as over a dozen leading private equity and credit managers, venture capitalists, economists and sell-side researchers.

We share our findings and summarize the key investment implications in the rest of this report. Chapter 1 examines the broad macro forces transforming private markets and considers the implications for systemic risk. Chapters 2 and 3 cover private credit and private equity markets, respectively – focusing on the evolving investment opportunities and changing set of risks. We include real assets – both debt and equity – in our analysis. Finally, Chapter 4 highlights the key portfolio-wide implications that follow from these continuing changes across private capital markets.

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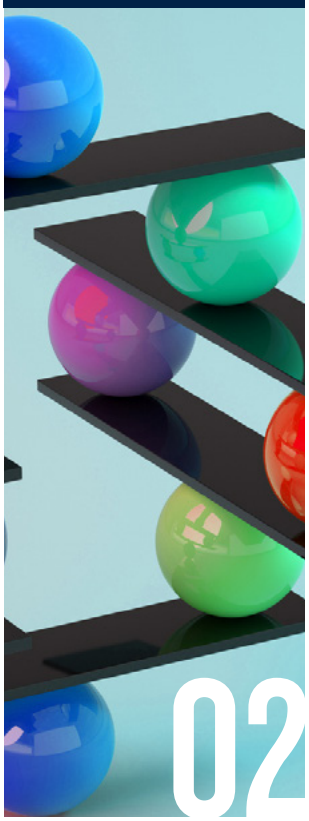

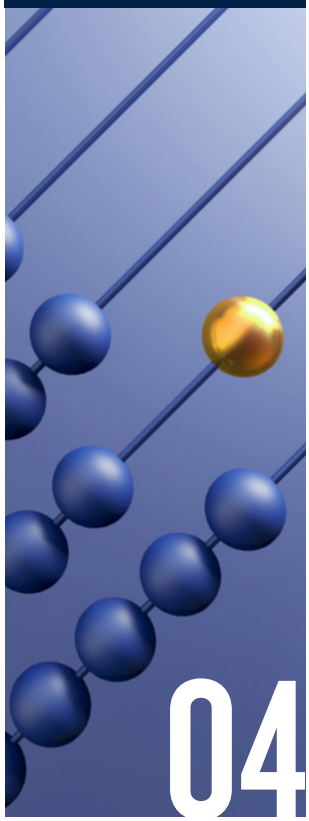

About PGIM

PGIM, the investment management business of Prudential Financial, Inc. (PFI). PFI has a history that dates back over 145 years and through more than 30 market cycles.* Built on a foundation of strength, stability and disciplined risk management, PGIM's more than 1,300 investment professionals are located in key financial centers around the world. Our firm is comprised of autonomous asset management businesses, each specializing in a particular asset class with a focused investment approach. This gives our clients diversified solutions from a leading global institutional asset manager** with global depth and scale across public and private asset classes, including fixed income, equities, real estate, private credit and other alternatives. For more information, visit www.pgim.com.

* 30 market cycles represent PFI's asset management expertise through PGIM and its affiliates and its predecessors. For additional information related to market cycles visit: www.nber.org/cycles

** PGIM is the investment management business of Prudential Financial, Inc. (PFI). PFI is the 11th largest investment manager (out of 431 firms surveyed) in terms of worldwide institutional assets under management based on Pensions & Investments' Top Money Managers list published June 2022. This ranking represents institutional client assets under management by PFI as of December 31, 2021. No compensation was provided for the participation to this ranking.

CHAPTER 1

A SHIFTING PARADIGM FOR PRIVATE MARKETS

"The forces reshaping private markets are also shifting the ground beneath investors' feet."

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EXPLORE CHAPTERS

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CHAPTER 1

A SHIFTING PARADIGM FOR PRIVATE MARKETS

Both the supply of and demand for private capital has increased dramatically since the global financial crisis – and neither the pandemic nor the subsequent inflationary shocks appear to have significantly dampened that momentum. We examined this trend and identified four key factors driving the transformation of private capital markets today.

1. Banks and finance companies receding from riskier segments of lending

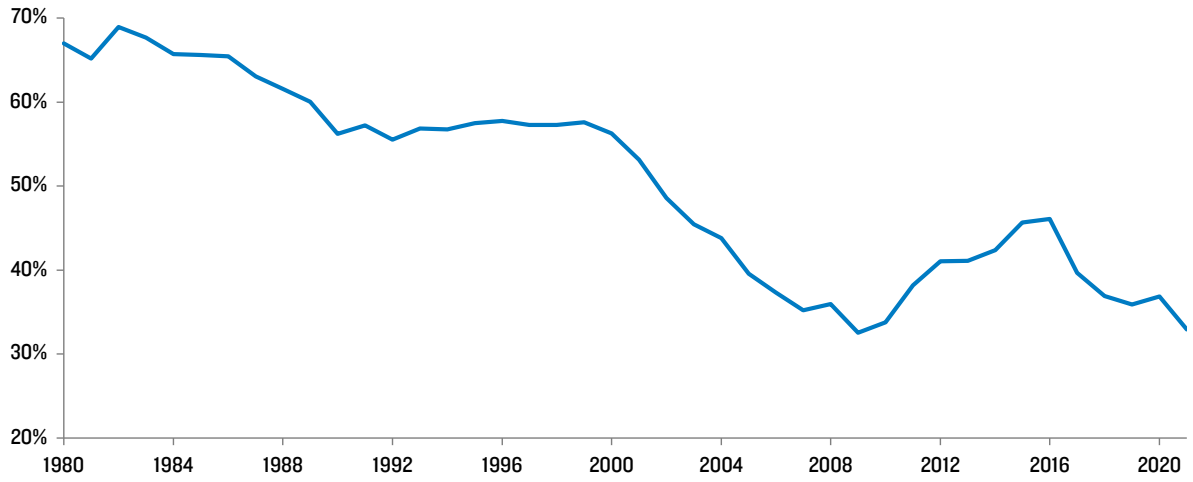
Commercial banks used to be the primary source of debt financing for firms of all sizes. Over the last 20 years, however, regulatory changes and shifts in business models have led banks to withdraw from certain parts of the market.[4] In particular, higher capital charges from Basel III and other regulations have made commercial banks around the world less active in riskier segments of the corporate and real estate lending market.[*, 5]

Importantly, the pace of regulatory implementation impacts the market dynamics in each region. For example, in the US, where business models have been changing for years due to Basel and other regulatory pressures, the withdrawal of banks from certain market segments is already apparent. Banks today provide only about 30% of corporate loans, down from 70% in 1982 (Exhibit 2).

Commercial banks in Europe are only now beginning to implement the latest Basel regulations and standards that will pressure their capital. This will cause banks in the region to narrow their focus to more conservative corporate and real estate lending and ensures a greater

Exhibit 2: Banks are receding from corporate lending

Bank share of corporate loans in the US

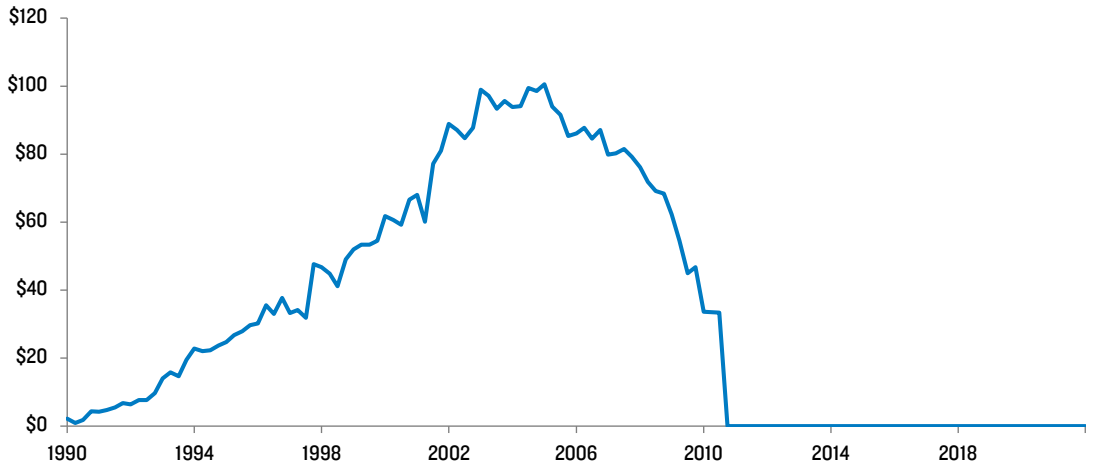


Source: Federal Reserve

* Basel III is an internationally agreed-upon set of measures developed by the Basel Committee on Banking Supervision in response to the financial crisis of 2007-09. The Basel III standards are minimum liquidity and capital requirements for all internationally active banks.

Exhibit 3: Finance companies disappeared from the ABS market post-2008

Loans to nonfinancial businesses securitized by finance companies, US$ Billion



Source: Federal Reserve

role for nonbank lenders going forward. Additionally, new rules around open banking will force banks to share borrower data they currently own with fintech companies, reducing one of the barriers to entry for a whole array of private nonbank lenders.[6]

> *Since 2001, US pensions have doubled their allocation to alternative assets to over 20%.*

In addition to the withdrawal of commercial banks, lending from finance companies (such as CIT and GE Capital) has dropped sharply. Their activity peaked in the years leading up to the Global Financial Crisis (GFC) and has declined since (Exhibit 3). GE Capital, for example, had almost $700 billion in assets in 2008 – equal in size to the fifth-largest bank in the US then.[7] After 2008, this form of commercial lending has been almost entirely wound down or sold off.[8] Many of these firms raised funds in commercial paper markets, issued loans collateralized by leases on commercial equipment or other kinds of receivables and issued asset-backed securities (ABS). The implosion of securitization markets triggered by the contagion from subprime mortgages cratered their commercial lending model.

2. Investors seeking income and yield increase allocations to privates

Global institutional investors have significantly increased their exposure to private markets. US pensions, for example, have doubled their allocation to alternative assets – including private markets – from less than 10% in 2001 to over 20% in 2021.[9] Looking ahead, over 40% of global investors say they expect to further increase allocations to private markets.[10] This demand for private assets has been driven by a combination of factors.

First, with ultra-low global interest rates and tremendous compression in corporate bond spreads post-GFC, many investors sought higher-yielding alternatives to corporate fixed-income portfolios – turning to core real estate and mezzanine infrastructure, for example, for their ability to generate strong income and stable cash flows.

Similarly, while the empirical evidence remains mixed, many investors believe private markets offer embedded illiquidity premia – and have increased allocations accordingly.[11, 12, 13] Additionally, private markets potentially offer other alpha opportunities through direct control over credit covenants or operational practices of portfolio companies.

Second, many investors prefer the lower frequency at which private markets are marked or repriced. Public markets price minute-to-minute and can be volatile – especially when risk appetite changes abruptly. In contrast, private markets do not price as often and are less exposed to the sentiment-based gyrations (and potential overshooting) of public markets. The less-frequent pricing has the effect of smoothing valuations for private assets. During periods of market turbulence, this lagged repricing can reduce the swings in net asset values and funding ratios.

> *New vehicles and structures to accommodate retail investors are emerging.*

Third, the appeal and increasing scale of private markets has also raised interest in broadening retail (individual investor) access to private alternatives. While the typical US pension plan or endowment has allocated over 20% of their portfolio to private markets, the average individual investor has roughly 5% of their investable assets allocated to alternatives.[14] Major private equity and credit managers are introducing new vehicles and structures – from traded business development companies (BDCs) in the US to "open-end" private credit funds in Europe – to accommodate fund investments from retail investors. Some private credit funds open to individual investors are already approaching $40 billion in size.[15] Future growth could be explosive. Individual investors are estimated to hold about $1 trillion in alternatives assets today – which could increase to $4.5 trillion by 2027.[16]

This development has the potential to "democratize" investing by allowing retail investors to access private equity and credit markets that historically have only been available to institutional investors – especially as the investment opportunity set available via public markets alone may be shrinking. However, broadening the spectrum of private alternative investments to individual investors can pose significant challenges. For example, many fund regulations require liquidity levels that may not align with the longer investment horizons of many private investments. In addition, it is critical that retail investors are educated and can access financial advice on the illiquidity and complexity of private assets versus the transparency and daily liquidity of most publicly listed securities and funds.

3. A growing number of business models may be better suited for private markets

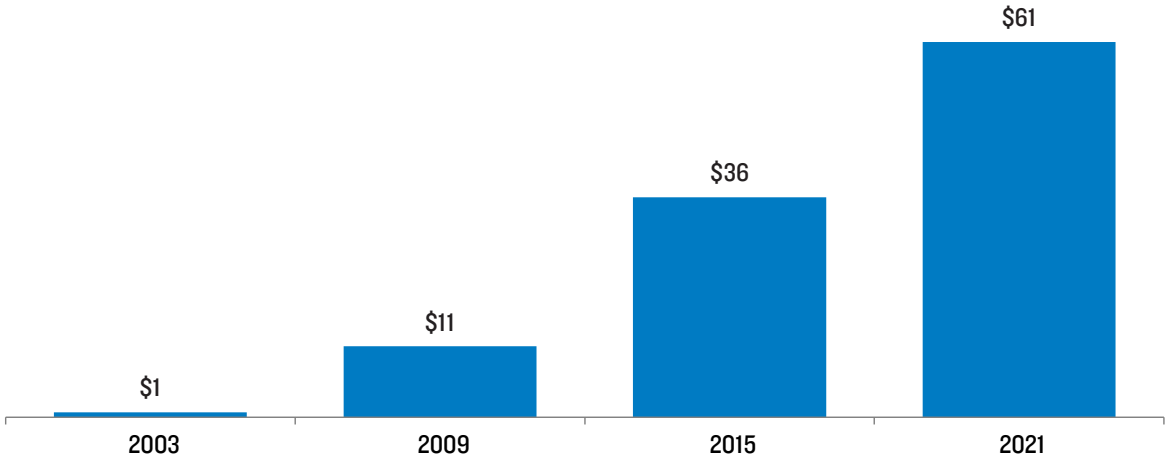
A host of factors has led to the emergence of business models and sectors that may have a comparative advantage in remaining private.

Perhaps the most powerful force is the rise of weightless firms. Fueled by the secular shift from manufacturing towards services, companies are moving away from physical capital (factories and machines) to a capital-light model centered on investments in intangible assets like R&D, software, intellectual property, data and algorithms. Intangible assets as a share of market value have more than doubled in the US since 1985.[17] Over 70% of the market value of the S&P Europe 350 and 85% of the S&P 500 are now comprised of intangible assets.[18]

When scaled, profitable winners in intangible-heavy sectors can ultimately flourish in public markets – like Alibaba, Google and Amazon. However, the journey can often be better appreciated and funded via private markets. This is because intangible-heavy firms typically have a longer path to profitability and are deterred by the drumbeat of quarterly earnings and the whims of impatient public equity markets. This is emphasized by GAAP accounting, which treats R&D investment as an expense, making it especially punitive for tech-driven business models. In addition, weightless firms typically need less capital compared to

Exhibit 4: Private markets push into energy

Private fund investments in conventional energy, US$ Billion



Source: Pitchbook

firms in physical capital-intensive industries and they rely less on public markets to scale their businesses.

> *The median age of companies at IPO more than doubled to 11 years.*

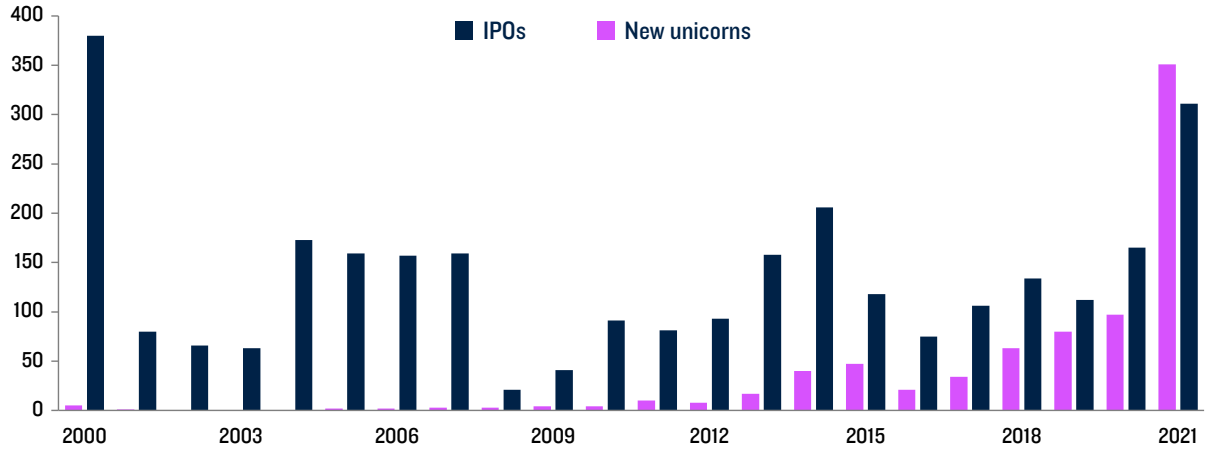
The fossil fuel sector is another area where firms are retreating to or sticking to private markets. Indeed, while some investors think of private markets as bastions of innovation around green technology, one analysis of investment in the energy sector by private equity firms found that since 2010 less than 15% of investment went into renewable power like solar and wind.[19] Public shareholders and climate activists have been effective in pressuring large commercial banks, asset managers as well as publicly listed energy companies to divest substantially from carbon-intensive industries.[20] Consequently, especially given the likelihood of a long sunset for fossil fuels, a growing share of the divested assets as well as the funding needs of small and medium energy companies (including carbon-intensive sectors) are now provided by private markets (Exhibit 4).[21] Private equity firms have also been prominent buyers of coal assets globally.[22, 23]

4. Companies are staying private longer

Companies that are going public today do so at a much later stage – over the past decade the median age of US companies at IPO more than doubled to 11 years. This is driven largely by PE-backed companies, which remain in private markets across more stages of their development. Going public via an initial public offering used to be required for any company of a certain size to access the growth capital they need. And over the past few years market participants and economists have worried endlessly about the dwindling number of public companies. What is underappreciated – besides the fact that the number of public companies has stabilized following the dotcom bubble – is that the available capital at every stage of private funding has sharply reduced the need to go public. Venture capital (VC), for example, has not

Exhibit 5: Unicorns outpaced IPOs in 2021

Annual number of new unicorns and IPOs



Source: World Federation of Exchanges and Pitchbook
Note: Newly listed companies on NYSE and Nasdaq, excluding SPACs. Unicorns are defined as private companies valued at over $1 billion.

only grown sixfold since 2013 but the share of late-stage investments (series C and subsequent rounds) has increased from about half to over two-thirds of all capital invested.[24] Getting a private company to a billion-dollar valuation with VC and other private investment used to be unheard of – as the moniker "unicorn" attests to. Today it has become quite common. In 2021, the number of unicorns exceeded the number of US IPOs for the first time (Exhibit 5).

> *Many firms in the US and Europe find the heightened requirements for disclosures expansive and onerous.*

For companies, this means less pressure to tap into public markets until liquidity events or their sheer size requires much larger pools of capital. This trend is driven by available capital, and with over $3 trillion in dry powder across private markets, firms will think less about capital and more about strategy when deciding on sources of funding.[25]

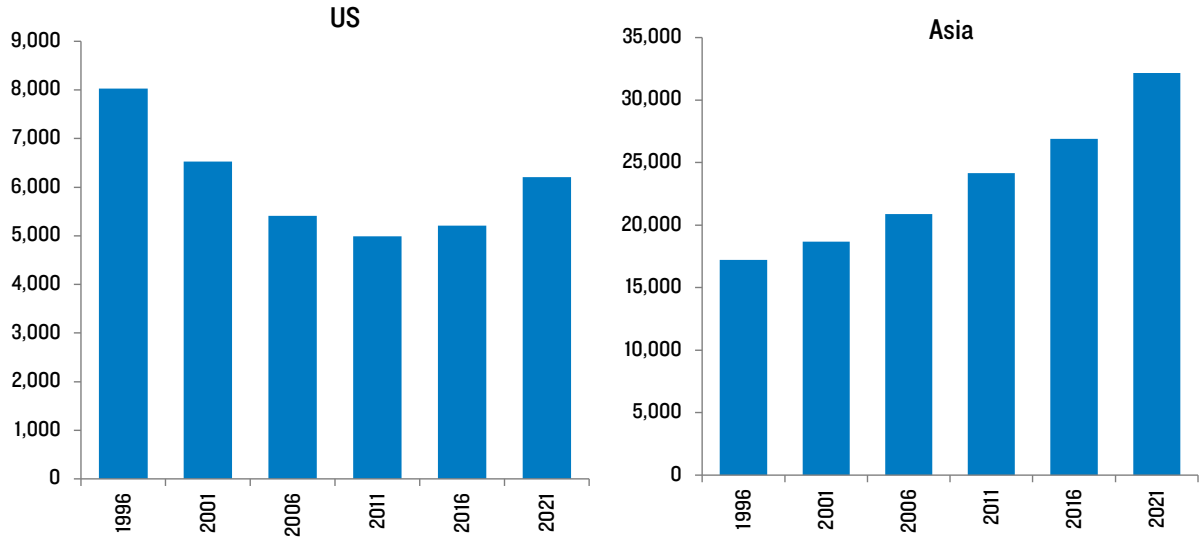
In addition, many firms in the US and Europe find the heightened requirements for disclosures and regular reporting to be expensive and onerous. In response to a series of global accounting scandals in the early 2000s, several countries mandated greater disclosures and required reporting for public companies. For example, the Sarbanes-Oxley law in the US escalated auditing and other requirements for public firms. The expense of complying with these new standards is not trivial. The total net additional cost for US companies to comply is over $20 billion *annually*, making the cost of going public potentially prohibitive for small and medium corporations.[26] Asia stands apart in this regard as the number of public market companies has grown quite steadily over the last 15 years, in part because funding alternatives through private capital markets are limited (Exhibit 6).

How do private capital markets impact systemic risk?

The expanded reach of private capital markets – especially the increasing scale of private credit activity outside the regulated banking system following the GFC – raises important questions on the resulting impact to macroprudential stability and systemic risk across the financial system and economy.[27]

Exhibit 6: Fewer public companies in the US; boom in Asian IPOs

Number of publicly listed companies



Source: World Federation of Exchanges
Note: Numbers include both domestic and foreign listings.

On the one hand, lending activity outside of the regulated banking system has less regular reporting and fewer capital requirements. This limited visibility makes it much more difficult to assess where credit and other risks are accumulating and how sufficient loss-absorbing capital may be.[28] It thereby becomes harder for governments, regulators and credit market analysts to understand if increasing leverage in the financial system (which can be at the level of acquired companies or embedded in the fund vehicles themselves) may be unsustainable or create new vulnerabilities. This is especially true given the pro-cyclical risk-taking behavior across the private credit sector and as global macro conditions deteriorate.[29]

On the other hand, diversifying credit risk beyond a small number of "too big to fail" commercial banks and dispersing it to a broader array of actors potentially *reduces* systemic risk and broadens access to credit for smaller and more innovative startups. Private credit can also be a nimbler and more stable source of funding compared to commercial bank balance sheets. Investors in these funds, at least historically, have been pension plans and insurers with long time horizons. Even in the extreme case of economic or financial distress, private creditors can arguably move more swiftly and decisively than large commercial or state-owned banks.

> *Today's private credit funds differ in meaningful ways from the shadow banks of the mid-2000s.*

For investors it is critical to understand a few things about systemic risk in private markets. First, today's private credit funds differ in meaningful ways from the shadow banks of the mid-2000s. The downfall of shadow banking in the GFC was primarily due to the fragility of their "borrow short, lend long" business model – raising funds in commercial paper markets and investing in illiquid long-term assets.[30] During the financial crisis, the shadow banking system came under severe strain as many investors became skittish

and withdrew funds all at once – a classic run on the fund. Without access to central bank liquidity lines, these liquidity and maturity mismatches strained shadow banks and many parts of the system collapsed.[31] Today's private credit funds are far *less* reliant on short-term financing. They appear to have committed sources of capital in closed-end funds to match their illiquid assets so a "run on the fund" is less likely to happen.

Second, while today's private credit funds may manage some risk better, the underlying credit risk remains and investors need to distinguish between private credit lenders. Some have demonstrated their ability to navigate economic downturns through multiple credit cycles and have significant experience with workouts, impaired assets and recoveries. By comparison, relatively new entrants to private credit only have experience during a bull market and may be more apt to be swept up in market exuberance.

The secular forces reshaping private markets are also shifting the ground beneath investors' feet – not just in debt and equity markets but across the entire institutional investment portfolio. We turn first to credit in Chapter 2, exploring the expanding reach and complexity of private credit markets and the resulting investment themes for institutional investors to focus on.

CHAPTER 2

PRIVATE CREDIT EXPANDS ITS REACH

"Cyclical and structural transformations have led to a significant deepening and broadening of private credit in the post-GFC era."

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CHAPTER 2

PRIVATE CREDIT EXPANDS ITS REACH

The cyclical and structural transformations described in Chapter 1 have led to a significant deepening and broadening of private credit in the post-GFC era. Once limited to a few segments of lending – like private placements or real estate mortgages originated by insurance companies – the private credit market has expanded its scope dramatically.

Today, it encompasses more segments of corporate lending, a wider range of real asset debt and a broader set of asset-backed loans including those backed by intangible assets such as music royalties and litigation finance (Exhibit 7). Furthermore, private credit markets are not only increasing in breadth but in scale as well (Exhibit 8).

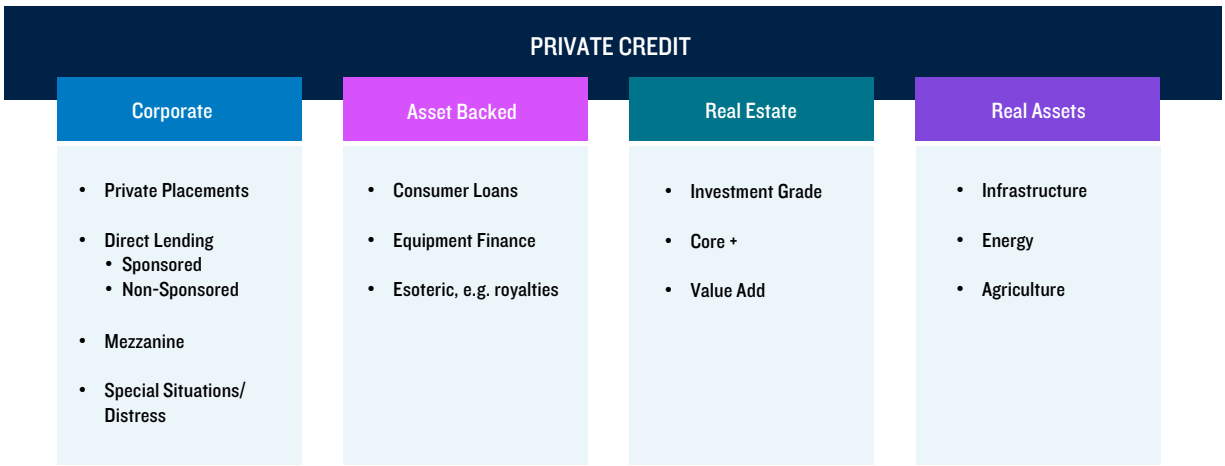
Looking ahead, we believe three trends will continue to shape private credit markets for years to come.

1. Private credit is gaining share and moving to larger deals in corporate lending

Over the last 20 years, banks have lost a significant share of traditional corporate lending. Regulatory changes around the implementation of Basel III standards have made banks less competitive and less willing to lend to middle-market firms or in the riskier portion of the market.[32] For example, banks' share of US leveraged loans – often associated with private equity buyouts – has halved from 30% in 2009 to 16% in 2021 (Exhibit 9).

The retreat of banks from the broadly syndicated leveraged loan market has meant growing opportunity for collateralized loan obligations (CLOs) and private direct lending platforms to supply loans for PE buyouts – referred to as sponsored lending. Founded in the 1980s, sponsored lending was once the domain of the high-yield bond market and used to fund a surge of leveraged buyouts (LBOs).[33] Over time, sponsored lending found a home in commercial banks and the broadly syndicated loan market. With banks

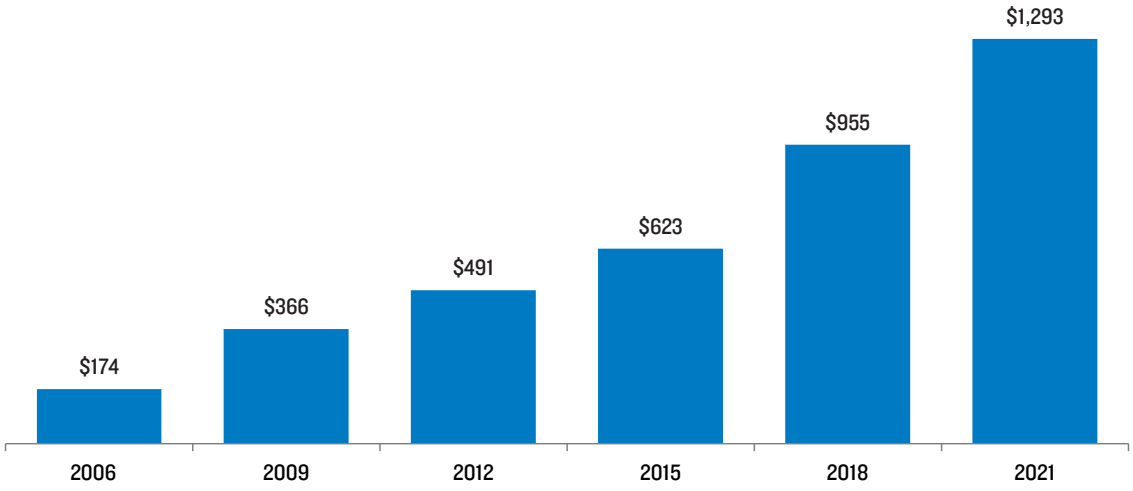
Exhibit 7: An overview of the private credit landscape



Source: PGIM Thematic Research

Exhibit 8: Private corporate credit ramps up

Total net asset value and dry powder, US$ Billion



Source: Pitchbook

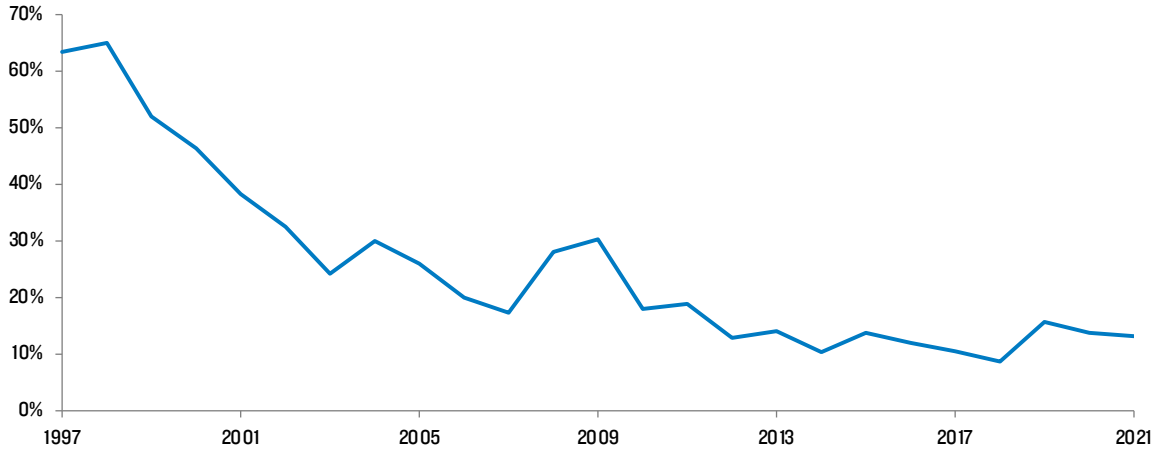
receding from the leveraged loan market, private credit providers will continue to fill the void. Direct lending from private credit funds has grown from less than $10 billion in 2006 to over $400 billion in 2021.[34]

Competition has become quite fierce with the largest credit funds having ample capital to put to work in this highly levered, deal-based segment of the market. As private equity firms go upmarket and buy out larger companies, both purchase multiples and the size of debt facilities to support these deals have increased (Exhibit 10).[35]

As the depth of the market for sponsored loans deepens and more capital enters the space, big-ticket leveraged loans from private equity buyouts have become the sweet spot for large private credit funds. The swelling deal size benefits the large-scale private

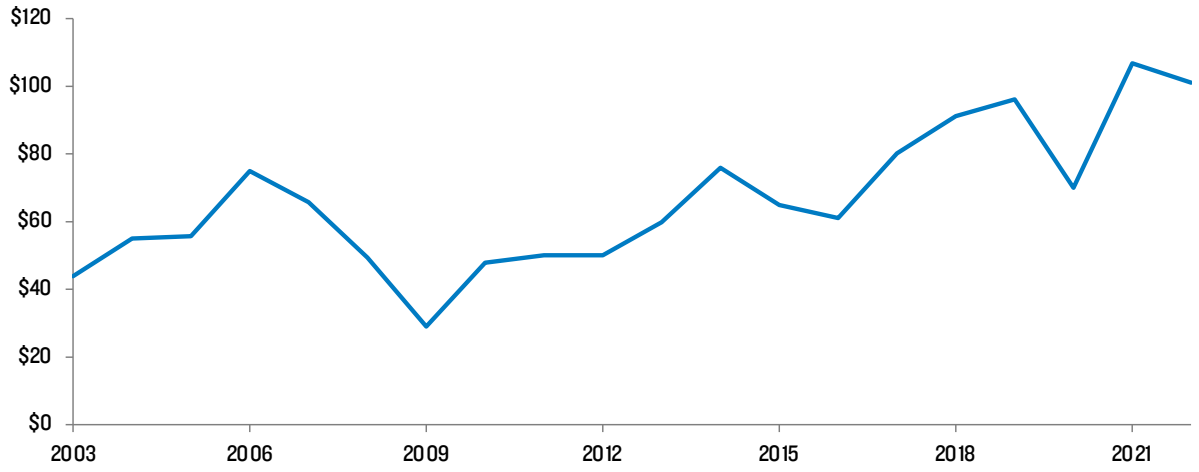
Exhibit 9: Banks withdraw from corporate lending

Bank share of US leveraged loan market



Source: Leveraged Commentary & Data

Exhibit 10: Leveraged buyouts grow larger
Median global LBO deal size, US$ Million



Source: Pitchbook

lenders whose business model is based on economies of scale and standardized processes to gain efficiency. This scaling trend is evident in the number of loans where a single borrower combines senior and subordinated debt into a single tranche.[36] The volume of such "unitranche" deals surged to over $20 billion quarterly in 2021, compared to about $3 billion just five years earlier.[37] Additionally, PE firms often prefer the perceived flexibility, speed and adaptability of lenders in the private credit market to the relatively more bureaucratic and inflexible leveraged loan market.[38]

> *Since the GFC, banks' share of US leveraged loans has fallen from 30% to 16%.*

2. Real asset debt growing as an institutional asset class

Private credit today is commonly associated with directly originated senior and subordinated loans to companies. However, the retreat of commercial banks over the past decade has had an equally substantial impact on other lending – such as real estate and infrastructure.

Real estate

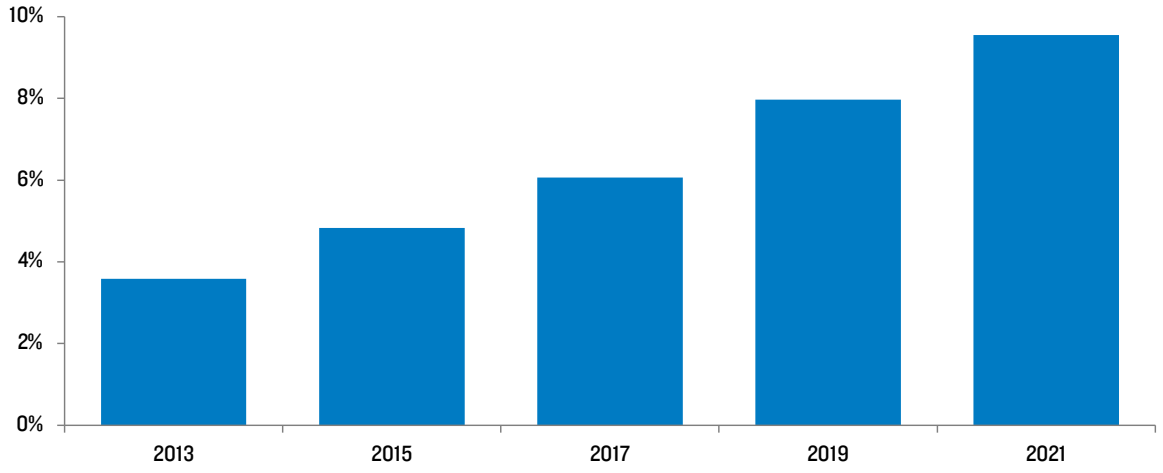
Lending for real estate has long been the domain of banks, life insurance companies and some pensions. Life insurance companies have often provided capital for more conservative "core" real estate – that is, top-tier properties in prime locations with low vacancies and quality tenants in place. These kinds of properties have served as stable sources of income and yield for life insurers for decades.

For their part, banks have historically been active both in core real estate as well as in more speculative segments – like funding land development, building construction or subordinated debt. The Basel framework that emerged following the GFC has shifted the dynamics of capital allocation in this space. Specifically, banks have mostly retained their core real estate lending but, as Basel III standards are rolled out, have pared back from riskier segments of the real-asset credit market.

The regulatory impact on real estate lending is most apparent in markets like the U.K. where implementation of the Basel framework is furthest along and nonbank lenders are gaining market share (Exhibit 11).[39] Commercial banks have also receded from riskier real estate loans in the United States. Europe, however, lags the US and U.K. as implementation has been significantly more gradual with banks still dominating real estate lending.[40]

Exhibit 11: U.K. nonbank lenders increase market share

Market share of U.K. nonbank lenders in commercial real estate



Source: Bayes Business School and PGIM Real Estate

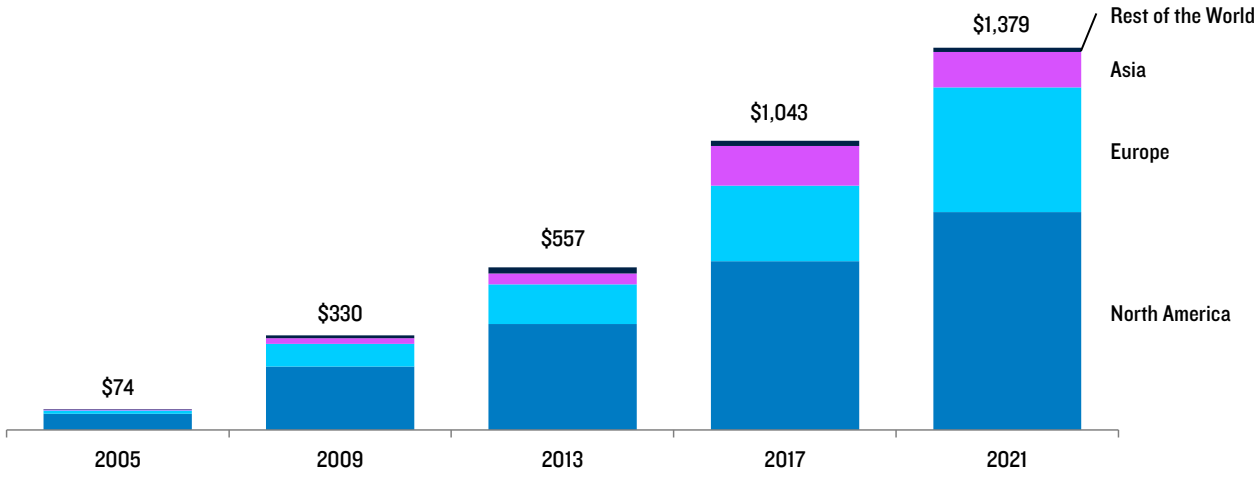
With banks vacating the riskier realms of real estate in some regions, new private credit players have stepped in. The amount of capital deployed by nonbank infrastructure debt funds has surged globally – more than doubling in size in eight years (Exhibit 12).

Infrastructure

The scale of institutional investor capital in private infrastructure funds has taken off over the last decade as investors look for stable and diversified sources of return. The transition to renewable energy will continue to drive significant growth in infrastructure investment opportunities. The International Energy Agency estimates over $100 trillion of infrastructure investment will be required to reach net zero by 2050.[41] These investments will span renewable power generation, transmission and storage, as well as the development and rollout of new technologies that

Exhibit 12: Private markets expanding in real assets

Total net asset value and dry powder, excluding real estate, US$ Billion



Source: Pitchbook

Note: Private equity and credit funds investing in oil & gas, metals & mining, timber, agriculture and infrastructure.

eliminate barriers to widespread renewable adoption, such as intermittency (i.e., solar power is not available on a continuous basis or on demand).

Perhaps surprisingly, there may also be opportunities in the "greener" end of traditional oil and gas for investors with the appetite to play in this space. Capital in this sector may have increased scarcity value as exclusionary ESG approaches have caused investors to step back from funding high-carbon assets despite the inevitability of a protracted multi-decade sunset for fossil fuels.[42]

> *Deals that used to be structured by banks and distributed via public markets are finding their way to private credit players.*

3. Specialized lending is maturing as an institutional asset class

The GFC marked a period of change for specialized asset-backed lending. First, the implosion of securitization markets triggered by the contagion from subprime mortgages enabled private capital and other nonbank players to take a larger role. Second, the regulatory changes to banks prompted by the crisis resulted in tremendous pressure on banks to de-risk their portfolios and has caused them to narrow their focus on conventional lending to high-quality borrowers with high-quality collateral. The collapse of many specialty finance stalwarts combined with the retreat of banks from securitization markets has meant asset-backed lending is increasingly being funded by institutional investors. Indeed, private credit and public fixed income managers with strong structured product expertise have stepped in to fill the void in the asset-backed lending space.

The ABS market is broadly divided into three segments: equipment-based finance, consumer lending and other "esoteric" collateral. Increasingly deals that used to be structured by commercial banks and distributed via public markets are finding their way to nonbank structurers and being distributed through private channels. Furthermore, issuers themselves are bypassing banks and public markets altogether and more directly tapping into select investors through private bespoke deals. For example, many insurance firms face more favorable capital treatment on mezzanine CLO tranches than on similarly rated corporate bonds or loans.[43]

Looking ahead, there are early signs that some strands of esoteric ABS backed by assets as diverse as intellectual property, inventories, account receivables and enterprise computing is emerging into a sizable asset class. These ABS will be accessed by investors not via public markets but increasingly through direct access to primary originators.

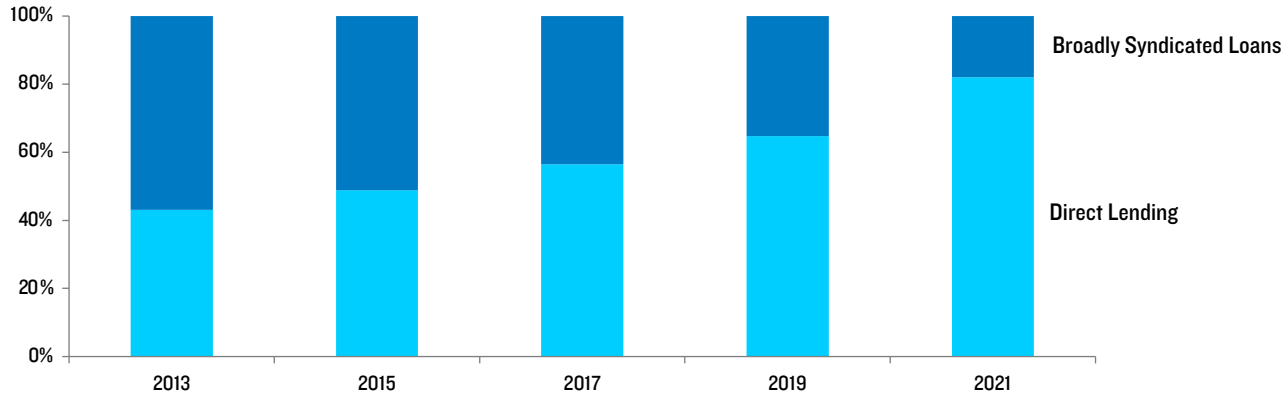
Investors are also tracking the progress of a growing cadre of fintech firms that are crowding out traditional bank and credit card lenders.[44] The rapidly evolving world of peer-to-peer lending, point-of-purchase credit and other kinds of digital-enabled credit to consumers is providing fertile new ground for securitization – despite some uncertainty around credit performance in a downturn. Digital-based lenders like Crowdo and Maneo in Asia, Minto and Klarna in Europe as well as Lending Club in the US all provide loans or credit to individuals and small businesses. These loans are originated and arranged by fintech platforms and are gaining scale through AI-driven algorithms for underwriting and risk management. These credit providers often depend on private pools of capital and this kind of consumer credit is a new realm for securitization.

Investment Risks and Opportunities

1. Investors should evaluate their credit exposure holistically

The lines between public and private markets are increasingly blurring – and private credit is no exception. Attractive private credit opportunities can often be found at the nexus of similarly rated public

Exhibit 13: BDCs are shifting to direct lending
BDC portfolio composition



Source: Leveraged Commentary & Data

bonds in traditional credit funds and illiquid, long lock-up drawdown funds.

For example, as US BDCs grow, they are taking a more active approach to lending, now making loans directly to PE-backed companies (Exhibit 13). The increasing use of these investment vehicles enables capital from "public" investors to fund origination of "private" credit.

The massive scale of fundraising for direct lending platforms is increasingly driving private credit players upmarket into segments that used to be funded by public markets. For example, private credit players are increasingly bidding on and winning larger corporate debt deals that would historically have been funded in the broadly syndicated loan market.[45]

As a result of this growing intersection between private and public credit opportunities, investors need to view their debt exposure in its entirety. A credit risk approach that looks at private credit separately from public may no longer be optimal due to the growing overlap and interplay between the two segments. For example, portions of the same underlying corporate loan can find a home in syndications, CLOs or even private debt funds.

Similarly, a consumer credit card company can have its receivables securitized through a bank platform, rated by a credit agency and distributed broadly in a public market; or that same credit card receivable can be packaged into an ABS by a private credit player and sold to several of their credit funds. No matter the structure, the growing fungibility of the underlying credit means there may be less diversification benefit from allocating separately to public and private debt.

> *Direct lending from private credit funds has grown from less than $10 billion in 2006 to over $400 billion today.*

2. Look beyond sponsored lending

With the growth of private equity, sponsor-backed lending comprises more than 70% of the direct lending universe.[46] However, attractive investment opportunities in corporate lending may lie beyond the crowded sponsor-driven segment – though these deals may be more difficult to source.

There are hundreds of thousands of middle-market companies in the United States and Europe.[47, 48] Private equity firms are involved with fewer than 10% of these companies. The *non*-sponsored lending segment consists of loans made to the vast remainder of middle-market companies – and this segment is not nearly as flush with capital. These are mostly companies owned privately or by founding families that depend on bank financing and have more conservative balance sheets.

While they present a less crowded opportunity set, non-sponsored middle-market companies pose a broad range of company and credit risks. Some, for example, can be monoline businesses with a less diversified stream of products and client base. Importantly, direct lenders in the non-sponsored segment can be selective about their borrowers. This makes it especially critical that direct lenders in this segment excel at identifying and mitigating these risks.

> *Non-sponsored middle-market companies represent a less crowded opportunity set.*

Investors in this segment of the market should look for several key characteristics of firms. First, they should look for firms that are leading players in a niche industry – e.g., a regionally dominant supplier. Firms with this profile may not provide sufficient growth opportunities to attract PE investment, but their reliable and strong cash flows can be very attractive for direct lenders.

Second, the sweet spot for direct lenders are firms that have outgrown their bank relationship either in size or scope (perhaps the firm is seeking growth capital that is beyond the risk spectrum of their bank) and prefer *not* to tap capital markets because of the public disclosures that would entail. This segment of the market has a relative scarcity of capital. Direct lenders with a willingness to build relationships with owners, understand their business strategy and carry out bespoke underwriting – with specialized covenants and custom terms – can create attractive debt solutions. Investors should seek platforms with expansive networks to source bespoke deals in the non-sponsored segment as well as underwriting and credit expertise to execute on these transactions. Additionally, experienced teams with strong track records through multiple credit cycles can deliver more consistent investment performance.

3. Energy infrastructure offers unique opportunities

While fossil fuels will eventually be replaced by greener sources of energy, this transition will take decades to play out. Oil and natural gas will have a long sunset before wind and solar-based energy sources ramp up sufficiently to meet global demand.[49]

In the conventional energy sector, private equity firms are quite focused on the larger middle-market firms. This segment is flush with capital and firms have little problem finding financing in the sponsored lending market. Many smaller energy firms, however, are unable to tap these pools of capital. Coincidentally, regional and commercial banks are less active in lending to this midmarket segment and focus their activities further upmarket.[50] For direct lenders, this segment of conventional energy in North America offers intriguing opportunities as capital can be scarce and lenders have some leverage over pricing and terms.

Early stages of oil and gas exploration and drilling are often financed with equity. However, once this exploratory work has been completed and optimal areas for drilling wells have been verified, energy players often turn to debt markets for the lower-risk, capital-intensive next stage.[51] This kind of mid-stage producing well offers proven cash flows and tangible collateral – making for solid credit fundamentals.

Debt that is conservatively underwritten – low leverage, simple capital structures and lending only on the value of known reserves – can be appealing to investors with ESG philosophies compatible with investing in companies at the greener end of the conventional energy industry. Additionally, mezzanine debt can come with attractive coupons based on the proven cash flows as well as added upside exposure in the form of asset royalties or warrants – which can provide reliable inflation protection for investors as well.

4. Newest segments of specialized lending have yet to be tested

Despite the novelty of the more exotic niches of specialized lending, their credit scoring models have yet to be tested. For example, the last 10 years have seen a surge of fintech lending platforms underwriting loans that offer unsecured credit to individuals and small businesses. Many of these players have a business model of securitizing these loans into ABS and selling them to investors. However, the AI-informed models underpinning these new kinds of credit have yet to be stressed through a complete credit cycle, which raises legitimate concerns about the performance of these ABS.

These new kinds of lending can be everything from "buy now, pay later" models that have become ubiquitous on online shopping sites, or merchant cash advances from their payment service provider. Many of these credit platforms leverage AI-powered algorithms to score credit risk. Because of the supportive macro landscape during their brief lifespans, few of these scoring models or businesses have been challenged – and even fewer have experienced economic downturns or actual default cycles.

With global inflation on the rise and economic growth slowing, it stands to reason some lending businesses and their credit scoring methods will be tested like never before. This has already translated into higher funding costs for some ABS issuers and investor concerns over the viability of the business model.[52] Other segments of the market that have relied on fintech apps powered by data science and algorithms – peer-to-peer lending and merchant advances, for example – will surely be tested during difficult macroeconomic environments as well.

By contrast, senior tranches of more conventional structured products – like CLOs and CMBS, for example – offer more tested credit models and structures. Today these structured products include many of the same borrowers as before but are often funded with private capital and structured outside of banks. Senior tranches of US and European CMBS and CLOs have a strong track record of performance that spans complete credit cycles. These more tested structures may be attractive to investors as the macro environment grows more challenging. Additionally, these private securitizations can offer a better liquidity profile than comparable whole loans as well as favorable capital treatment and risk-adjusted returns.[53]

> *With global inflation on the rise, new lending business will be tested like never before.*

5. Housing is an enduring global trend for real estate

With growing economic and market uncertainty in the near term, some real estate investors will adjust tactics by shortening duration and moving up in credit quality. From a strategic perspective, however, investors should stay focused on long-term structural themes in real estate. These themes are more apt to endure through an entire economic cycle. Investors should consider both debt and equity investments for these key themes, depending on market circumstances and pricing.

One such theme is the ongoing trend towards multifamily rental housing. With the price of individual homes surging in major urban areas globally, homeownership is increasingly beyond the reach of many families. As a result, more households are turning to multifamily housing to meet their shelter needs. Furthermore, since the COVID-19 pandemic, more people are looking to live alone, creating a surge in household formation.[54] These broad trends are likely to persist and continue creating attractive opportunities for real estate investors.

Several characteristics of multifamily rental housing make it especially appealing to debt investors as economic growth decelerates and inflation rises. Even as growth slows, income generated by the residential sector is underpinned both by the basic need for shelter and by the robust demand for more affordable

living spaces in major cities. Additionally, rental housing offers some inflation protection as it typically reprices annually.

Investment opportunities are abundant in the US where the rental market is well established – especially in coastal markets like New York, Boston and Los Angeles – and occupancy and rents are recovering from their pandemic challenges.

The declining affordability of homes for purchase is prevalent in other parts of the world as well. For example, individual homes in major Asian cities are now among the least affordable as home prices have outpaced income growth for more than a decade.[55] Housing rental expenditure has been growing rapidly and is expected to continue. Major cities in Australia such as Melbourne and Sydney are forecast to see their rental markets double in size over the next decade.[56]

In Europe, across the three largest economies – France, Germany and the U.K. – 6% annual growth in house prices since 2015 has far outpaced sluggish inflation rates in the EU. Cities in the U.K., such as London and Manchester, may offer especially attractive debt opportunities as the demand is robust and rents tend to be less tightly regulated.

Credit markets are of course only half of the private capital story. The next chapter looks at the new dynamics of private equity markets – leveraged buyouts, venture capital, direct real estate and infrastructure equity – to help identify hidden risks and new opportunities for long-term investors.

CHAPTER 3

PRIVATE EQUITY ENTERS A NEW PHASE

"Investments in private equity go well beyond LBOs and include direct real estate, infrastructure, and secondaries."

03

EXPLORE CHAPTERS

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CHAPTER 3

PRIVATE EQUITY ENTERS A NEW PHASE

For many, the term private equity is synonymous with spectacular corporate buyout deals. And while LBOs remain the largest segment, private equity markets have grown exponentially over the past two decades and now include much more – such as direct real estate, infrastructure equity and secondaries (Exhibits 14 and 15).

There is no question low and stable interest rates, steady economic growth and rising valuations over the past 15 years have created an almost ideal macro backdrop for private equity markets. Deviations from this optimal environment, as we are observing currently, will certainly put portfolios and managers to the test, in many cases for the first time in more than a decade. But regardless of how the next few years play out, several trends will continue to shape the broad private equity landscape.

> *LBO deal size has doubled in the last 10 years to over $100 million.*

1. Private equity leaders separate from the pack as dry powder and deal size hit new highs

With a record $870 billion available to invest, deal sizes are rising across the PE industry.[57] This trend toward scale is apparent across the private equity landscape. Venture capital is at the point where unicorns are no longer mythical but rather mundane. And in LBOs, deal size has more than doubled from $48 million in 2011 to $101 million in 2021.

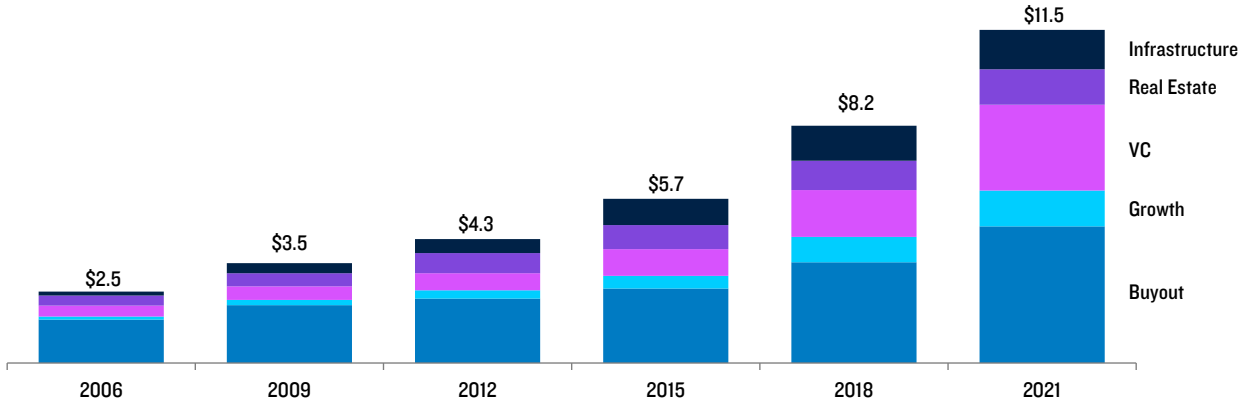
Consequently, PE firms have evolved from the pure leveraged buyout shops of the 1990s into diversified private alternative conglomerates with extensive and sometimes interlinked interests across equity, credit,

Exhibit 14: An overview of the private equity landscape

Source: PGIM Thematic Research

Exhibit 15: Private equity assets more than doubled in the last decade

Total net asset value and dry powder, including real assets, US$ Trillion



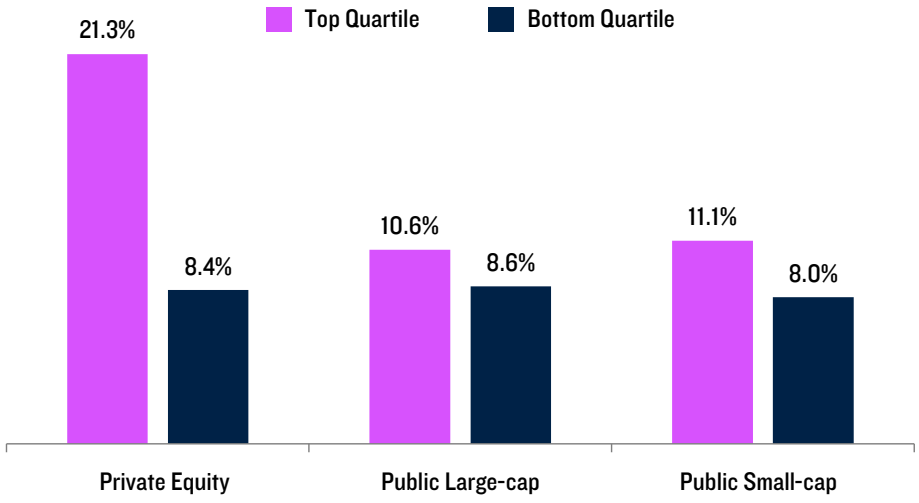
Source: Pitchbook

real estate and infrastructure. The five largest PE firms grew their total AUM by over 200% to $2.1 trillion over the last decade – representing almost a quarter of global PE assets under management.

The advantages of established PE incumbents – long track records, low key-person risk, established global relationships and the ability to invest at a needle-moving scale for large investors – have led to a more challenging environment for new managers. Indeed, in a recent study, emerging PE managers (those raising for a first, second or third fund) had lower median return and higher volatility than more established funds (those raising a fourth or subsequent fund).[58] Consequently, investor appetite for emerging managers has abated, with a meager 11% of investors "more likely" to back new managers.[59]

Exhibit 16: Private equity returns are highly dispersed

Performance of top and bottom quartile funds since 2004

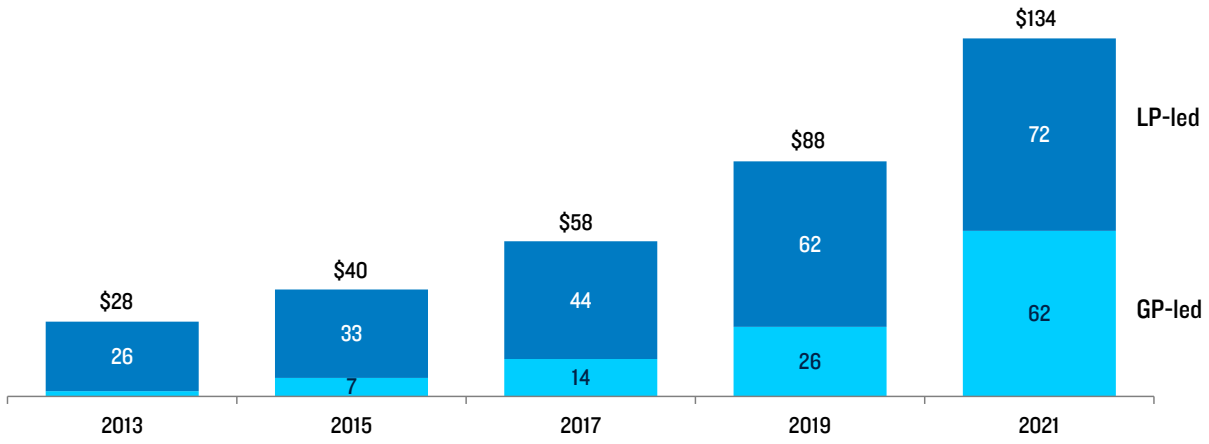


Source: Pitchbook and eVestment

Note: Internal rate of returns for PE funds of the vintage 2004 to 2017 as of December 2021. Public large-cap and small-cap represent US mutual funds of the same category, respectively.

Exhibit 17: Secondary markets are increasingly GP-led

Total GP- and LP-led transaction volume, US$ Billion



Source: Greenhill Cogent, Global Secondary Market Review HI 2022.

Importantly, the performance of PE is in large part due to a small set of funds that persistently outperform their peers. The dispersion of returns within PE highlights the importance of manager selection – the top quartile of funds generates investment returns more than twice as high as the bottom quartile. This degree of dispersion in performance is much greater than in public equity markets where manager performance is more tightly clustered around the median (Exhibit 16). Given these trends, the market will continue to see consolidation of a still highly fragmented industry with more than 18,000 private equity funds in the US alone.[60]

2. Private equity secondary markets are deepening

As the primary PE market has matured and the share of PE in institutional investors' portfolios has increased, it has created a need for liquidity and strategic management of PE positions. Secondary markets provide a solution to LPs' need for flexibility by creating a market for stakes in private equity portfolios, often to a fund that specializes in secondaries. These deals are driven in part by a need for liquidity under stress – which can be seen in the spike of secondary deal volume during the GFC. However, the secondary market is increasingly being utilized for portfolio management – apparent in the growing share of secondaries from almost 2% in the early 2000s to over 5% of total AUM in the last five years.[61]

> *Secondary markets can be an essential tool for portfolio management.*

For LPs, the secondary market has proven to be an effective tool for managing their growing private equity portfolios. This can range from a simple rebalancing of target allocations to a major adjustment across the portfolio from a change in investment strategy. Investors also do not know the composition of firms that VC or PE funds will end up investing in. Therefore, as funds deploy capital, investors may find the need to reallocate for a variety of reasons, such as overexposure to certain sectors or regions.

In times of market uncertainty, secondary transactions provide the option of liquidity but also the potential for rebalancing at discounted prices. Secondary deals

usually happen at a discount to their net asset value, but during market uncertainty the gap between previous valuation and secondary pricing widens.[62] For both LP and secondary funds this means opportunity in growing exposure to existing investments for which discount rates seem excessive or to access sought-after investments at potentially attractive valuations.

Increasingly, sponsors themselves have become a significant part of the secondary market. In so-called GP-led transactions, a sponsor restructures a fund by transferring one or several of its existing portfolio companies into a new fund (either by tender offer, continuation fund or a secondary sale).[63] For the sponsors, rather than exiting their investment outright, these transactions provide additional time, capital – or both – to maximize value. For example, KKR raised over $2 billion in a continuation fund to hold onto Internet Brands after increasing revenue eightfold.[64] These new deals provide an attractive tool for sponsors to manage their portfolio companies and it is therefore not surprising the share of GP-led transactions has more than doubled over the past five years to almost 50% of all secondary volume (Exhibit 17).

> *GP-led secondary transactions have doubled over the past five years to almost 50% of all secondary volume.*

3. The largest institutional investors are transitioning from LPs to GPs

Institutional investors with heavy allocations to private markets are increasingly looking for ways to reduce their fees. A few investors are finding ways to do this, while simultaneously getting more direct exposures to competitive private markets, through direct and co-investments. These deals are a departure from the traditional PE fund structure, where the general partner would raise capital from a handful of limited partners, usually institutional investors, with equal rights and obligations. Today, a handful of the largest investors, including CalPERS in the US, Singapore's Temasek and Canada's CPP, have either co-invested with PE and VC firms or manage direct investments themselves. These deals are structured with institutional investors as equal partners – or sole investor – giving them the potential for higher net returns (through lower fees). However, these attractive terms come at a heavy cost – they require significant investment of capital, a high conviction in their PE partner and considerable in-house talent to directly manage the investment and its accompanying risks.

4. Private equity firms are seeking more permanent sources of capital

Long-term capital is at the heart of private market investing. While institutional investors are the main source of this patient capital, PE firms are increasingly looking for alternate pools of permanent capital. This would reduce their reliance on perpetual fundraising and potentially allow them to invest in assets with longer payback periods. Several ways of accessing permanent capital are emerging today.

One is to directly acquire or partner with an insurance firm. The mergers of Apollo and Athene or KKR and Global Atlantic are good examples of this.[65, 66] For the PE firms, this provides multiple benefits: (1) capital does not need to be recommitted, and (2) excess returns are not distributed to policyholders but can accrue to the sponsor.[67] These benefits have led to an uptick in PE-owned insurers. Almost non-existent a decade ago, PE-owned firms now manage almost 7% of the overall $7.5 trillion of US insurance assets.[68]

A second option is to employ permanent investment vehicles – rather than the classical closed-end funds that typically have a time horizon of eight to 12 years. Increasingly these vehicles are also targeted at HNW and affluent individual investors. VC firm Sequoia Capital, for example, expected to raise up to $20 billion in its permanent capital fund launched late in 2021.[69] These funds offer a continuous stream of investment capital to private equity firms while providing limited

liquidity to investors – withdrawals are typically limited to 5% per quarter – to address the liquidity mismatch between the fund's assets and liabilities.

> *Continuation funds have the potential to misalign interests of GP and LP investors.*

Investment Risks and Opportunities

1. Secondary markets increase flexibility and create new opportunities

As private markets and their complexity grows, so will the need for portfolio rebalancing, fund restructuring and liquidity options. The size of the secondary market is driven by both the exponential growth of private equity AUM and the fact that companies remain in private markets far longer. Potential issues around rebalancing can arise due to the mismatch in valuation frequency. That is, a decline in overall market valuations will be felt first in public market assets and may cause asset allocations to deviate from target allocations. This is also known as the "denominator effect." Secondary markets can be a vital portfolio management tool, especially for investors bound by strict allocation targets.[70] Buyers that can provide liquidity in these times can benefit from the need to sell during market uncertainty.

For secondary funds or other buyers, these secondary transactions can provide low entry points for investment as well as transparency into the identity of portfolio companies and their track record.[71] This may dampen the J-curve effect – the phenomenon of negative returns during the early years of capital deployment by primary funds. Secondary funds can also potentially provide exposure to a broader segment of the private equity market than a single primary fund could – given the fact that they are exposed to multiple primary funds and therefore exponentially more portfolio companies. This access to broad segments of the market may be especially attractive for smaller investors who seek diversification but do not have the ability to invest with multiple primary funds.

2. Closely monitor PE fund practices and structures

One of the strengths of classic private equity investing is that GP and LP interests are very well aligned through much of the process.[72] However, the influx of new investment vehicles and structures provide hidden risks and potential for incentives to diverge.

Continuation funds

Continuation funds have the potential to misalign interests of GP and LP investors.[73] Despite the closed-end fund structures, GPs have found new ways of creating degrees of freedom for themselves around the management and exit of portfolio companies. In some cases, the timing for an exit is especially bad due to broad market and economic conditions. In other cases, a GP may value the future growth prospects of a portfolio company so highly, they want to provide more capital and hold on for longer.[74]

No matter the circumstance, a GP may want to transfer one or more portfolio companies from a current fund they manage to another fund that they will continue to manage but will be capitalized primarily by private equity secondary funds. In these situations, the interests of the GP and LP can diverge. The transfer of a portfolio company from a GP's current fund to their continuation fund is heavily influenced by the GP. Though getting a fair market valuation is common practice, this transfer can happen at a valuation that is not an arm's length, market-based transaction. Both the future carry and management fees are based off this new valuation.

While LPs are typically provided the option to maintain investment as is, commit to the new fund or liquidate out of the old fund, they need to assess the risks and benefits in the context of their broader portfolio. These types of deals are also highly idiosyncratic, requiring a lot of time and data analysis to be successful for both GP and LPs.[75] The potential

for misalignments in strategy or incentives between GP and LP investors has led to greater scrutiny from regulators who are examining such practices.[76, 77]

Potential sources of embedded leverage

Leverage is unsurprisingly a key component of LBOs. However, some forms of leverage are more transparent than others. For example, subscription lines – lines of credit collateralized by the capital commitments of LP investors – are used during the funds' investment phase to smooth cash flows or capital calls.[78, 79] They are a common funding tool for GPs and can help funds take advantage of short-term dislocations and limit the need for frequent capital calls. However, disclosure of these lines of credit is neither standardized nor required. If misused or undisclosed, subscription lines have the potential to be a source of hidden leverage and distort performance metrics.[80]

While typically used as a form of bridge financing between capital calls, this form of credit has exploded recently to more than $400 billion. Furthermore, the tenor of subscription lines has increased from 90 days to over 360 days – suggesting they may be used for more than merely smoothing quarterly capital calls.[81] Use of subscription lines can also distort performance metrics.[82] The rates of return for PE funds are based on the cash flows they generate for the investor. That is, capital calls are outflows for the investor and capital distribution are inflows. Therefore, investing borrowed money in lieu of committed capital enhances some performance metrics by artificially reducing time between cash out and inflows.[83]

Furthermore, use of subscription lines may also limit LPs' flexibility and access to secondary markets. Commitments made by the GP to a subscription line may prevent LP investors from executing a sale of their stake, for example.[84]

If used aggressively, and without proper disclosure, subscription lines can create hidden risks for LPs. Undisclosed subscription lines would boost metrics of return but would not impact leverage metrics, for example.[85] Additionally, greater leverage without higher levels of loss-absorbing capital can leave LPs facing higher risks of future capital calls in a down market when they may not be receiving distributions.

LP investors should be aware of the potential for misuse of these subscription lines and seek greater detail around how they are used from their GPs. Indeed, the lack of transparency around these lines and other sources of hidden leverage has drawn increased interest from investor groups as well as US regulators.[86]

> *Among alternative investments, VC funds have lagged in risk-adjusted returns after fees since 2000.*

3. Reconsider the role of venture capital in a portfolio

Venture capital funds have long been a part of institutional investor portfolios. The prospect of investing early in the next tech superstar firm and reaping exponential returns on investment has a strong appeal. However, the reality is a bit more nuanced. Among alternative investments, VC funds have lagged in risk-adjusted returns after fees since 2000.[87, 88]

The acceleration of tech adoption following the COVID-19 pandemic ignited the speed and scale of VC dealmaking. From March 2020 to December 2021, investment grew by a staggering $500 billion.

While venture funds are constructed around outsized returns from a small fraction of their portfolios, the surge of investment in the space has driven valuations to unattractive levels – especially in some areas of technology – and forced VC funds into betting on winner-take-all network effects in speculative markets. This has strained recent vintages. In the US alone, companies lost billions as they were forced to take a haircut to their valuation during funding rounds in 2022, a so-called "down round."[89]

Despite its underwhelming performance, venture capital can play a role in an institutional portfolio. For example, later-stage VC and growth investing may offer more attractive risk-return characteristics for investors. They typically involve proven technologies that are finding pragmatic, real-world applications and even generating revenues from actual paying customers.

Furthermore, access and insight into the frontiers of technology and its applications can be helpful for long-term investors, providing a glimpse into potential areas of future technology disruption. Forward-thinking CIOs can leverage the vision and market intel of VC management and portfolio companies to identify potential targets of disruption in other parts of their portfolio.

The fastest-growing VC markets are in Asia. Since 2012, Asia's VC AUM has increased tenfold to $1.3 trillion, far outpacing their European peers and almost as large as the United States. This is driven in part by the fact that venture capital allows investors to gain direct exposure to small businesses in developing markets. Public markets, by contrast, tend to be dominated by large state-owned or multinational firms and may not represent the underlying dynamic local economy. Furthermore, these investments also provide access to economies that are becoming an ever-larger share of global GDP in combination with a regulatory environment that is often more amiable to startups and entrepreneurs.

4. Renewable and digital infrastructure provide global equity opportunities

Because infrastructure is not easily substituted and often operates with economies of scale, it can offer several attractive investment features including relatively low volatility, stable cash flows, inflation protection and low correlation to other investments. Infrastructure is also well suited for the current macroeconomic environment given the defensive characteristics of essential assets and the embedded inflation hedging. As investors look across the spectrum of infrastructure equity categories – ranging from secure core investments all the way to opportunistic investments in emerging markets or development projects – we believe they should pay particular attention to opportunities in renewables and digital infrastructure.*

> *Infrastructure is well suited for the current macroeconomic environment given its defensive characteristics and embedded inflation hedging.*

Renewables and the push to decarbonization

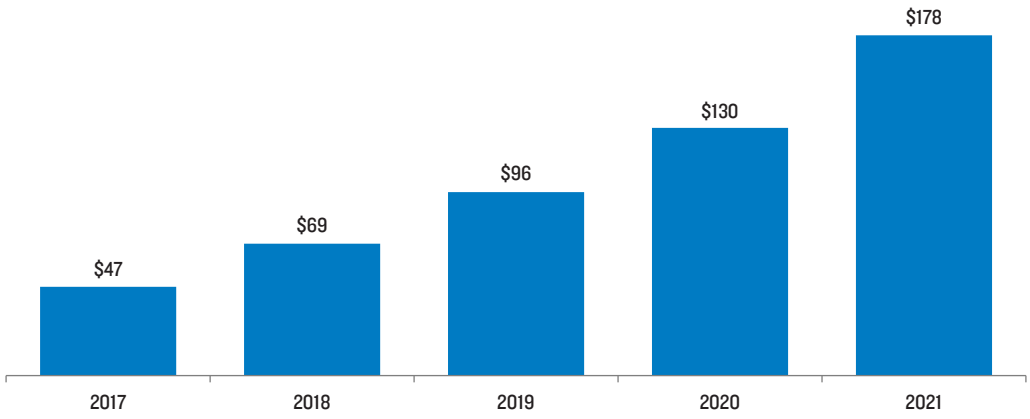
To meet net zero emission targets, the global energy mix will need to shift from two-thirds fossil fuels today to two-thirds renewable power by 2050.[90] This transition will drive sustained growth and lead to attractive opportunities in the renewables sector– including solar, wind and hydro-electric, as well as adjacencies such as storage and transmission. The continued commitments by governments, including the 2022 Inflation Reduction Act in the US and the 2021 European Green Deal, will further amplify this transition.

Europe has led the world in renewable adoption and future investment opportunities are likely to remain robust, despite the near-term instability and supply shocks resulting from the war in Ukraine. Meanwhile, North America is expected to meet or exceed Europe in terms of future capital expenditures as it catches up in renewable energy adoption – which increasingly is cost competitive with traditional fossil fuel options.

In Asia, the opportunity is more nascent. While China's renewable investments are substantial, they are largely not accessible to foreign institutional investors. Globally, while increased demand for renewable funds has led to greater competition for developed market renewable assets, in turn compressing returns,

* Depending on how broadly infrastructure is defined, there are $20-50 trillion of infrastructure assets globally, of which $10 trillion are privately owned.

Exhibit 18: Cloud infrastructure services spending
US$ Billion



Source: Synergy Research

we believe that renewable returns over the cycle will remain attractive to investors globally – across both equity as well as the debt required to support the continued high levels of sponsor activity in the renewables space.

> *As renewables ramp up, there will be opportunities in adjacent areas such as energy storage and low-carbon hydrogen.*

Longer term, as renewable power generation ramps up, there will also be opportunities in adjacent areas such as energy storage, floating platform offshore wind, low-carbon hydrogen, carbon capture and storage and modular nuclear. New energy policies, especially those promoting energy security, together with increasing cost competitiveness, will likely accelerate adoption of renewable energy in the US and the EU. As power generation continues to shift to renewable sources, storage capacity and mechanisms to easily integrate renewable energy into the broader power grid efficiently becomes crucial.

Digital infrastructure

The societal changes resulting from Covid-19 have accelerated the pace of digitization. Digital infrastructure – which includes data centers, fiber networks, cell phone towers and satellites – underpins this trend and can offer attractive opportunities for investors.

For example, more businesses, universities and governments are moving away from enterprise-based data storage and towards the public cloud ecosystem. Globally, annual spending on public cloud services reached $178 billion in 2021 – a nearly 40% increase from the prior year (Exhibit 18).

Data centers to support cloud computing are essential digital infrastructure with growing global demand. Within the sector, demand for hyperscale data centers - large-scale facilities that cater to the global cloud providers and tech companies like Alibaba Cloud, Azure, AWS and Google – has been especially strong.[91] Increasingly, these cloud providers are looking for others to develop, build and operate data centers for them.

From an investment perspective data centers straddle both real estate and infrastructure and offer attractive features of both, including relatively steady income

and low correlation to other investments. Data centers that are mature and operating with a long-term dedicated client in place may be especially attractive for long-term investors.

Hyperscale data centers require sizable tracts of land, specially designed buildings with thicker floors and higher ceilings. They also require a reliable and ample supply of power to run both the servers and the intensive cooling systems.

For investors, attractive opportunities for developing hyperscale data centers lie in the United States and Europe. In the US, areas like Northern Virginia and Silicon Valley have a well-established data center presence. However, markets like Phoenix and Chicago offer attractive opportunities given the availability of land and power. In Europe, the market is less mature and there are promising opportunities for demand growth in major urban areas like Paris, Frankfurt and Amsterdam. However, supply in these areas may be constrained by ESG considerations and some limitations on land and power use.

Chapters 2 and 3 analyzed the changing dynamics and resulting investment opportunities within private equity and private credit markets. However, the altered private markets landscape also has important implications across the entire investment portfolio. Chapter 4 turns to these implications and proposes a portfolio-wide action plan for CIOs.

CHAPTER 4

PORTFOLIO IMPLICATIONS

"The seismic shift in private markets has long-term implications across the entire portfolio."

04

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1 2 3 4

CHAPTER 4

PORTFOLIO IMPLICATIONS

The evolving private market landscape raises important considerations for CIOs thinking about long-term implications across their entire portfolio, beyond the specific asset class opportunities discussed in previous chapters. We believe CIOs should evaluate four areas as they think about the cross-portfolio implications of the new dynamics of private capital markets.

1. Consider more flexible investment approaches given blurring lines across publics and privates

The distinctions between public and private markets have grown hazier. Correspondingly, the demarcations at large institutional investors between the public fixed income, private credit, public equity and private equity groups are getting increasingly blurred as well. This phenomenon increases the need for discussion and collaboration across investment, manager selection and research teams.

For example, investors use cash flows from private core real estate as a substitute for interest coupons from their corporate bond portfolios. The once bright line that separated broadly syndicated loans and private markets has become obscure as private lenders now have sufficient scale to compete for billion-dollar loan deals. Privately structured and unrated securitizations now happen outside of banks routinely and are customized for investors rather than distributed in public markets. And several public equity players have strong relationships, privileged access and existing investments in high-potential pre-IPO private companies.[92]

These blurring lines can present new risks for investors. For example, with LBO-driven sponsored lending dominating direct lending, asset allocators need to be mindful of overlapping exposures and potential correlations between their private credit and private equity allocations.

Likewise, investors need to be aware of the evolving opportunity set as well. At a minimum, CIOs will want to ensure regular communication (both formal and informal) between their public and private in-house analyst teams. Doing so allows each team to develop a fuller "360 degree" view of their respective asset class. This broader and more complete perspective can make it easier to identify opportunities at the intersection of public and private markets as well as correlated risks and exposures across public and private investments.

Institutional investors are increasingly considering multi-asset or "blended" investment mandates with fewer boundaries that allow managers to seek out the most attractive risk-return opportunities across both public and private markets. For example, a broad fixed income mandate can allow managers to assess relative value and invest across public fixed income, real estate debt, structured products and private credit. Similarly, in real estate, allocations that are agnostic to debt or equity can allow asset managers to survey the entire capital stack, take advantage of dislocations in relative pricing and be opportunistic as markets adjust.

2. A more sophisticated understanding of liquidity risk in private assets is essential

A fundamental question for endowments, pensions and other investors is: What is the optimal allocation to private markets? Portfolio liquidity is a relevant

constraint for investors with substantial allocations to private assets. Investments in private equity funds, for example, can be locked up for several years before investors receive any distributions. This may make it difficult for pension plans to meet their obligations and allow for unexpected outflows – like capital calls from PE fund managers.

A comprehensive portfolio framework that spans asset classes and time periods could be insightful for CIOs and enable them to better understand the liquidity challenges around investing in private markets.[93] A framework that can be customized for an individual portfolio would be ideal. It would bring together a portfolio's overall public and private market asset allocation, a private asset commitment history, a forward-looking commitment strategy as well as unique portfolio liquidity demands. Such an analytical framework could be used to stress test portfolios under different market and economic circumstances and would bring embedded liquidity risk to the forefront. Combining these factors in an analytical model would enable CIOs to form a thorough understanding of the tradeoff between overall liquidity risk and performance.

> *Portfolio liquidity is a relevant constraint for investors with substantial allocations to private assets.*

3. ESG is only beginning to shape private markets

It is conventional wisdom that private markets are far less exposed to ESG pressures than public ones. For starters, reporting mandates for climate-related risks rarely extend beyond publicly traded companies. The resulting lack of transparency and relevant data has deterred some ESG-minded investors from private markets. Second, climate activists have typically focused on commercial banks and asset managers that tend to be more sensitive to reputational risk and negative headlines.

However, ESG considerations are now increasingly influencing private markets as well. About 70% of global private equity LP investors say their organization's investment policies include ESG aspects.[94] A growing number of investors are also looking to achieve ESG objectives with the private asset portions of their portfolios. For their part, PE firms and private credit funds are responding to investors' desires and even creating funds with explicit ESG mandates.[95] Over 40% of the largest PE fund managers say they consider ESG issues either seriously or very seriously when making investment decisions.[96]

This ESG momentum is altering the private market landscape in several ways:

- **Better transparency and reporting from private markets**

  ESG-minded investors are joining portfolio companies' employees and customers in stressing the need for more detailed reporting and accountability. As more investors push their GPs and credit fund managers for metrics of risk, impact, sustainability and equity, they have driven greater disclosure and reporting from private fund managers.[97]

  Investors are not the only ones pushing private markets to be more transparent. Regulators are also expanding their mandate for climate-related reporting. The U.K., for example, recently expanded climate-related risk reporting to all firms with over 500 employees, regardless of the firm's corporate structure or ownership.

- **Investors can have more direct and measurable impact**

  Since private equity (and, in some cases, debt investors) have greater influence over portfolio firms' practices and operations, they can potentially achieve greater and more direct impact. Often portfolio companies have fewer resources to manage their environmental and social impacts, such as carbon footprint or equity and inclusion initiatives. A growing number of ESG-minded investors are therefore seeking private funds with the operational capabilities to assist their portfolio companies in achieving improvements

in environmental, social and governance performance. Almost 40% of all private equity investors said they invested in ESG-related products in 2022, up from 33% the prior year.[98]

With a limited number of investors and direct involvement in the operation of a business, private equity in some ways provides the ideal circumstances for an ESG-minded investor to achieve their objectives. PE owners, for example, can utilize their operational control to drive changes that enhance sustainability or implement diversity initiatives. Similarly, venture capital funds can seed investment in disruptive technologies that are addressing the green transition.

4. Explore integrating privates into defined contribution plans over the long term

There has been an increasing focus on creating responsible paths for retail investors to participate in the opportunities available in private markets. This clearly means ensuring retail investors are aware of the longer time horizons and the illiquidity of investments in private markets – and that they understand the complexity of some corners of these markets.

Defined contribution (DC) plans may be one place where the illiquidity of private assets may be less of an issue for retail investors. Most plan participants, especially younger employees, are using their DC plans to save for a retirement that may be decades in the future. This kind of long-term investment horizon aligns well conceptually with the committed capital structure of private markets. CIOs with responsibilities that straddle both defined benefit and defined contribution retirement plans – in countries such as the US, U.K. and Australia – should look for ways to responsibly incorporate private market investments into DC plans, just as they have in their defined benefit plans.

The benefits of making private alternatives accessible to individual investors are apparent – "democratizing" private market access just as the investment opportunity set in public markets may be shrinking, for example. Additionally, incorporating private assets into retirement plans may allow for a more reasonable fee structure for individual investors. One area where plans have started incorporating private assets is core real estate. This is already available in some retirement plans via target date funds and can provide growth opportunities for younger retirement investors as well as inflation-hedging and income generation for those approaching or already in retirement.

However, significant challenges to widespread implementation in DC plans remain. For example, the liability risks and uncertainties in the US around actual implementation are still prohibitive for private equity – despite some clarity from authorities in 2020.[99] Indeed, retirement schemes that are professionally managed – like Australia's superannuation fund or the U.K.'s master trusts – may be most suitable for private investments and provide the best opportunities for implementation.

Conclusion

Capital markets have evolved significantly over the last 20 years – and at an accelerated pace since the GFC. Firms today have a different set of options available to finance growth and expansion at every stage of their development. At PGIM, we believe these developments have important implications for institutional portfolios and are changing the investment calculus in meaningful ways (Exhibit 19).

Though only time will tell how capital markets evolve over the next 20 years as they navigate market cycles and geopolitical upheavals, one thing is clear: Private markets will remain a key source of financing for a whole range of innovation and economic activity globally. It is up to investors and their asset managers to have the short-term flexibility and the long-term vision to capture the new opportunities available in deepening and growing private markets while also navigating the unique risks.

Exhibit 19: Summary of Investment Implications

PRIVATE CREDIT INVESTMENT IMPLICATIONS	
1. Manage credit exposure holistically	• The lines between public and private credit markets are increasingly blurring, (e.g., private direct lenders moving into broadly syndicated market) • Investors need to view their entire credit exposure collectively to capture opportunities and to fully understand overlapping risks and correlations
2. Look beyond sponsored lending	• Attractive investment opportunities in private lending lie beyond the crowded segment of sponsor-backed deals • Seek out direct lending platforms that can source non-sponsored deals and have a strong underwriting and credit track record across multiple market cycles
3. Energy infrastructure offers unique opportunities	• Smaller firms are disproportionately impacted by banks retreating from the conventional energy sector • For investors whose ESG policies permit, structured loans on proven wells can offer attractive coupons and added upside protection in the form of equity or royalties
4. Traditional structured products	• Despite the novelty of more "exotic" niches of specialized lending, their credit scoring models have yet to be tested through a full credit cycle (e.g., "buy-now-pay-later" models) • Traditional structured products – such as CLOs and CMBS – offer tested credit models and structures as well as favorable capital treatment
5. Multifamily rental housing	• Post-COVID trends – including a surge in household formation and elevated global home prices – provide a favorable macro backdrop for multifamily rental housing • Multifamily also offers debt investors some inflation protection and better performance through a credit cycle

PRIVATE EQUITY INVESTMENT IMPLICATIONS	
1. Secondary markets create new flexibility and opportunities	• In addition to creating liquidity, secondary transactions provide a portfolio management tool to rebalance, implement a change in investment strategy or dampen the J-curve of primary funds • Secondary markets can create opportunities for buyers who can provide liquidity in times of market uncertainty and elevated discount to net asset values
2. Closely monitor PE fund practices and structures	• Restructuring and continuation funds involve value transfers that may create potential for misaligned incentives between GP and LP that need to be evaluated • If misused or undisclosed, subscription lines can distort performance metrics and be a source of embedded leverage
3. Reconsider the role of VC in the portfolio	• VC risk-adjusted returns have lagged other private market strategies since the early 2000s. • However, CIOs can benefit from the vision and market intel of VC management and portfolio companies to identify potential vulnerabilities and targets of disruption in other parts of their portfolio
4. Renewable and digital infrastructure provides global opportunities	• As renewable power ramps up, there are opportunities in adjacent areas such as energy storage and low-carbon hydrogen • Hyperscale data centers – large-scale facilities that cater to the biggest cloud providers and tech companies – offer attractive investment opportunities globally

PORTFOLIO-WIDE INVESTMENT IMPLICATIONS	
1. Blurring lines require more flexible investment approaches	• Investors need to reconsider their approach to investment analysis and decisions as the lines between public and private capital markets are increasingly blurring • This requires better collaboration between analyst teams and potentially a re-evaluation of public-private boundaries in investment mandates
2. A more sophisticated understanding of liquidity risk	• As investments in private markets grow, so do questions around portfolio liquidity and optimal allocations • A customized portfolio framework that spans asset classes and time periods can enable a deeper understanding of portfolio liquidity risk
3. ESG is beginning to shape private markets	• ESG-minded investors are driving change around detailed disclosures and more accountability • Direct ownership and control can provide ideal circumstances for an ESG-minded investor to achieve impact objectives and goals
4. Private assets in defined contribution retirement plans	• The benefits of making private alternatives accessible to individual investors are apparent • Liability risks and uncertainty provide high hurdles; CIOs should look for ways to responsibly incorporate private market investments into defined contribution plans

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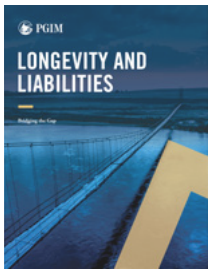

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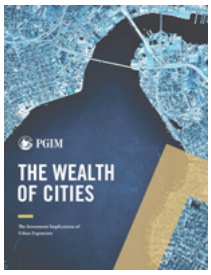

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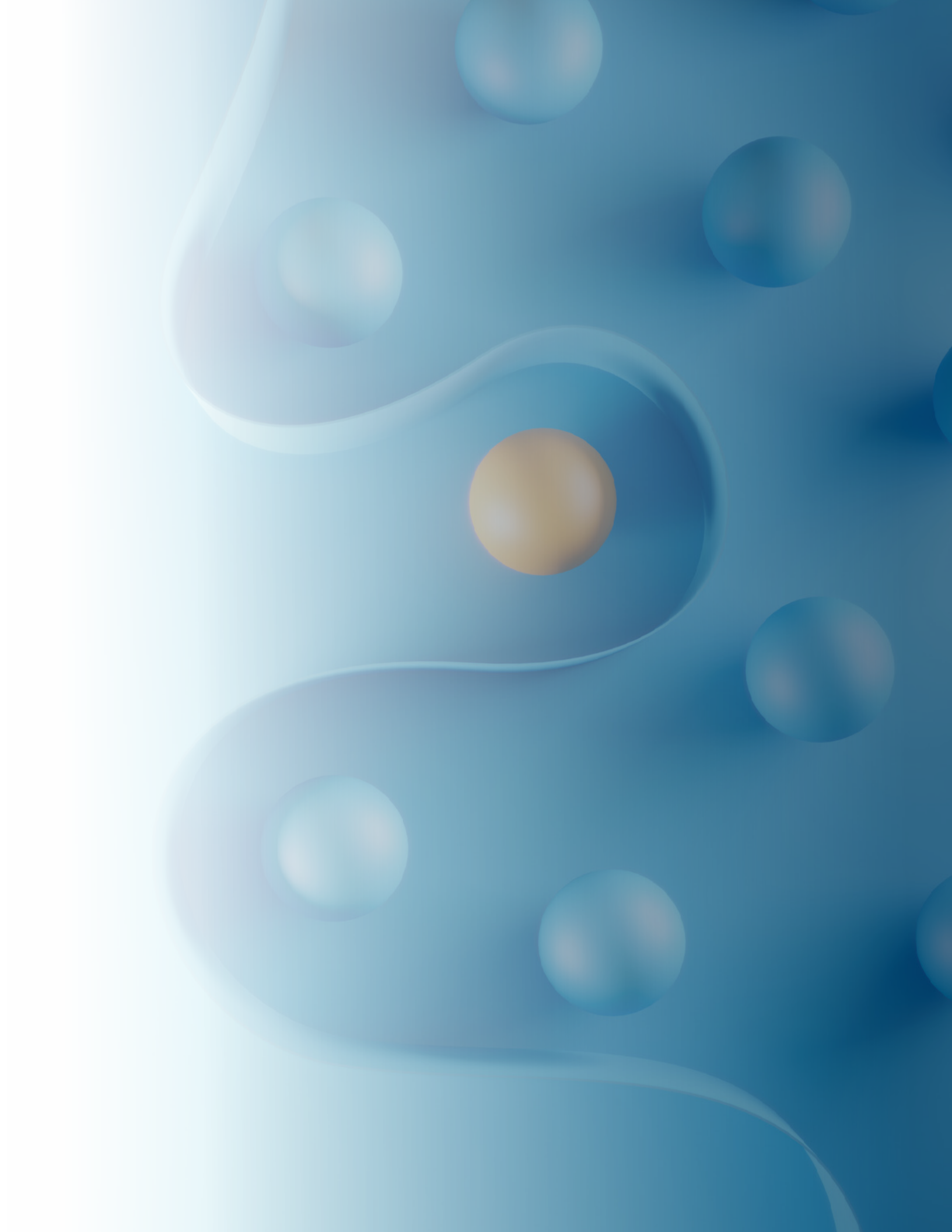

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