QUANTITATIVE PERSPECTIVES

Pumping the Brakes

Q2 2023

Pumping the Brakes

Introduction

The environment facing PE has become increasingly challenging; this is highlighted by a significant rise in short-term interest rates and tight credit conditions. These two factors, among others, have started to induce a slowdown across the industry, including deal and exit activity and performance, despite relatively positive overall economic activity. Further, the economic outlook does not point toward a reprieve in the near term. Core inflation remains well above the Federal Reserve's (Fed's) target, thus creating a risk that short-term interest rates will stay above 5% for longer than many are expecting. It will likely be difficult for inflation to ease and the Fed to cut rates without a material slowdown in real growth, which will create a different set of issues for PE investors and their portfolio companies.

In this report, we explore the challenges and risks that are impacting PE market participants. After a resilient 2022, buyout dealmaking has started to slow as credit has become less available and more costly. Additionally, higher debt costs continue to pressure coverage ratios of buyout-backed companies, which could be magnified if corporate profit margins continue to recede from record highs. Meanwhile, all exit routes are extremely limited—the recent slowdown in exit activity is comparable to those that occurred in 2008 and 2020.

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The economic backdrop

Key takeaways

- According to our quantitative model, the odds of a recession occurring in the next 18 months continue to rise, driven primarily by a sharply inverted yield curve and an increase in short-term interest rates. These two signals are at their most extreme levels since the 1980s.
- Credit conditions have tightened further following a period of stress within regional commercial banks. This will likely constrict loan growth for middle-market companies and, in turn, nonresidential corporate investment.
- Despite elevated recession fears and unfavorable credit conditions, the overall economy continues to grow at a moderate pace fueled by resilient consumer spending.
- The outlook for consumer spending, which is driven primarily by income rather than credit, remains positive.
- Although inflation has come down slowly after peaking in mid-2022, it has remained well above the Fed's 2% target and has been stickier than many expected.
- While, at the June 2023 meeting, the Fed decided not to raise interest rates for the first time in over a year, the possibility that high inflation will persist creates a risk that short-term rates will remain above 5% well into 2024.

Leading economic indicators continue to suggest an elevated chance of a recession starting in the first half of 2024...

Smoothed probability of a US recession occurring in the next 18 months

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

Recession

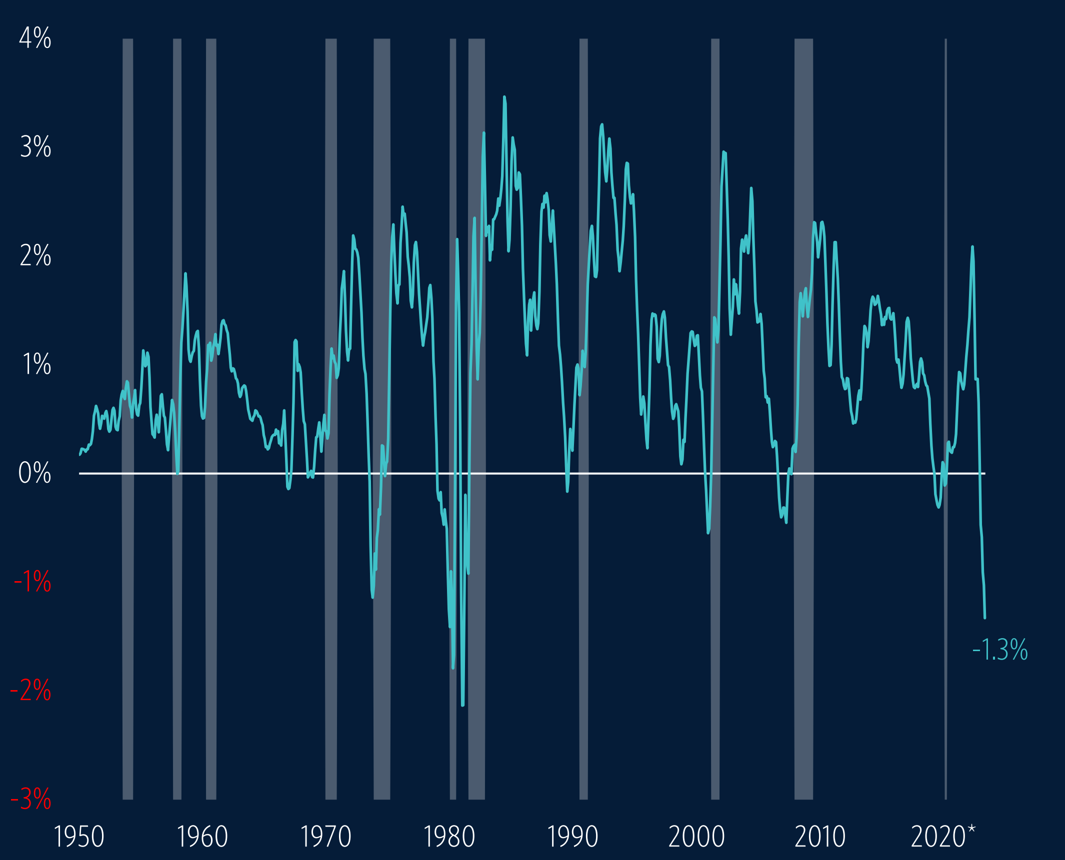
78.1%

1980 1985 1990 1995 2000 2005 2010 2015 2020*

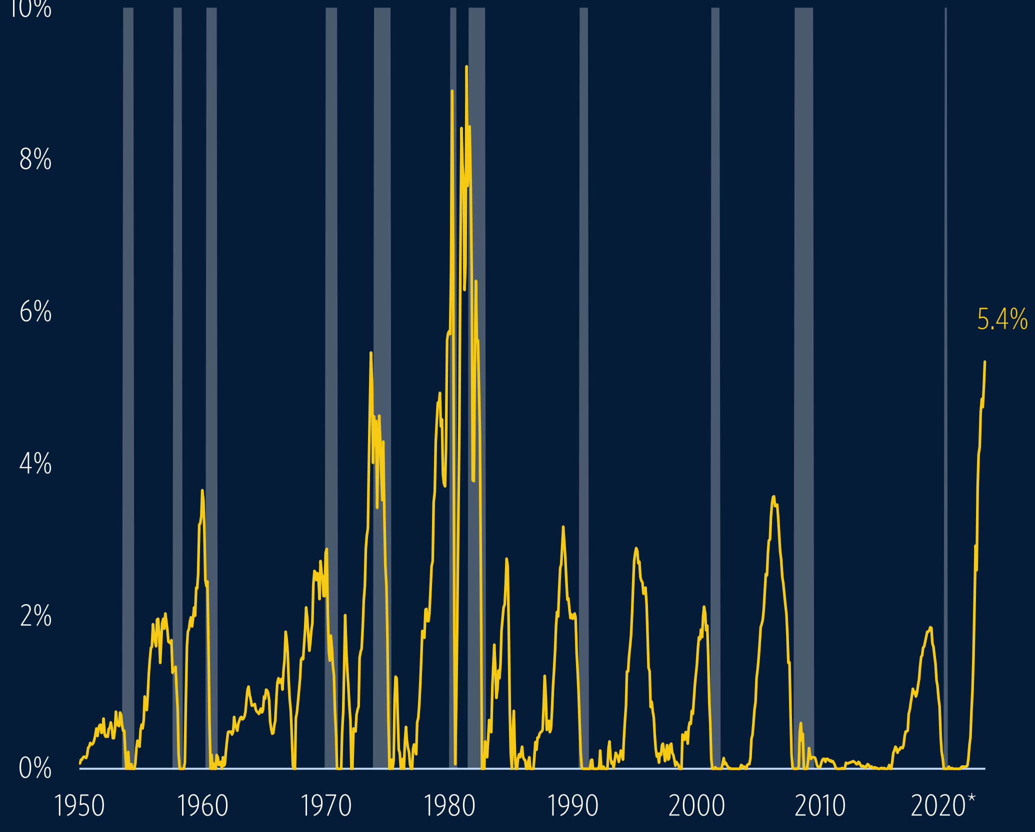
Source: PitchBook | Geography: US
*As of May 31, 2023
Note: Predictions are out-of-sample and not made during a recession.

…due primarily to the inverted yield curve and sharp increase in short-term interest rates.

Intermediate Treasury yield minus three-month Treasury bill yield



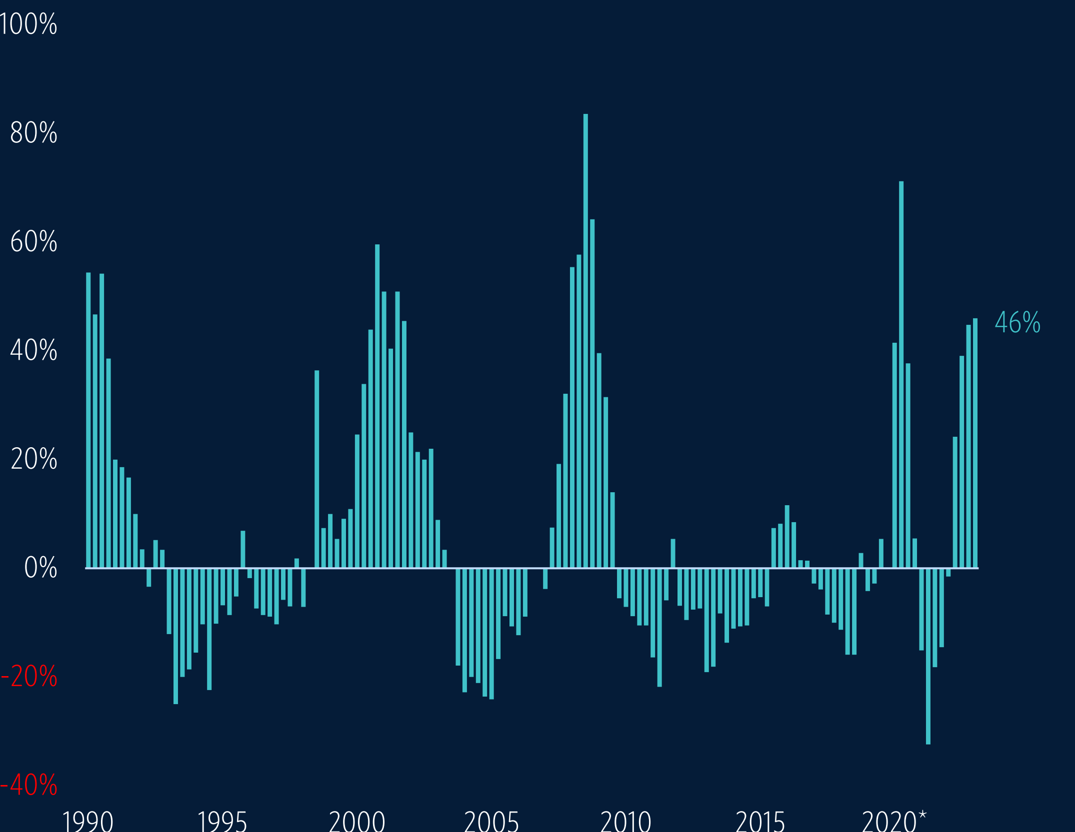
Three-month Treasury bill yield minus the trailing 24-month minimum



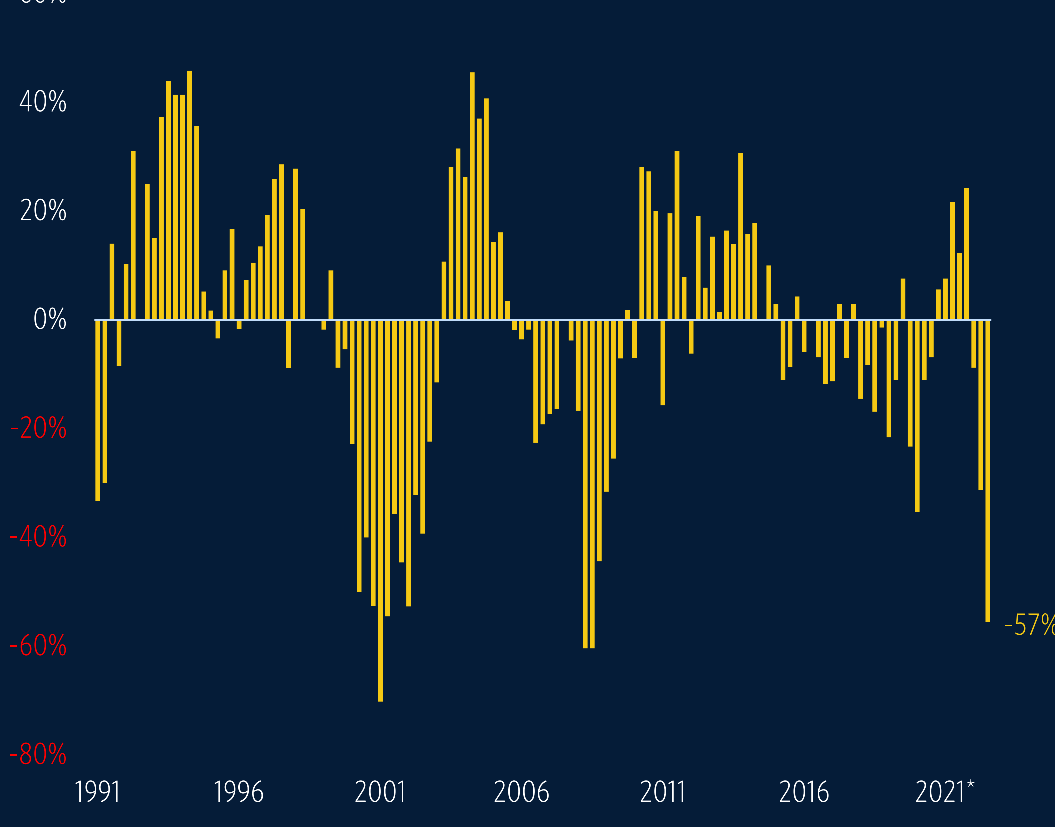
Sources: Ibbotson SBBI, Federal Reserve | Geography: US
*As of May 31, 2023
Note: Shaded areas indicate official recession dates from the NBER.

Commercial banking issues and high loan costs have helped tighten credit conditions further...

Net share of banks tightening credit standards for loans to large and middle-market firms



Net share of banks reporting stronger demand for loans from large and middle-market firms

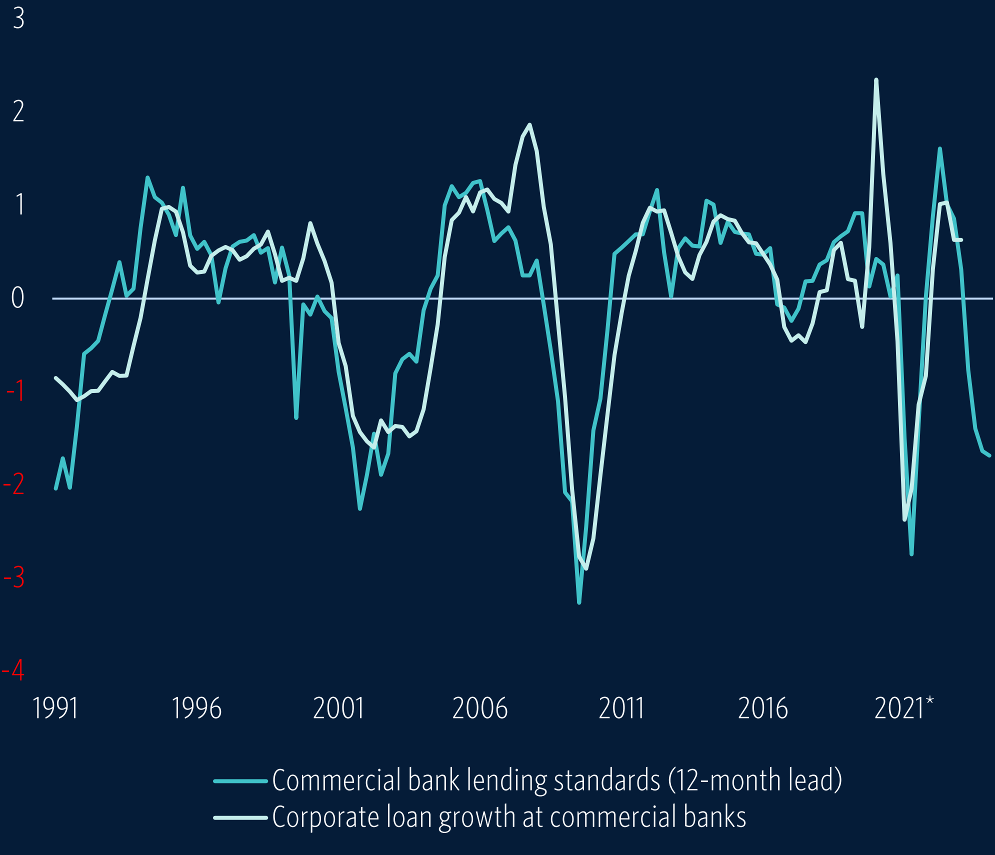


Source: Federal Reserve Senior Loan Officer Survey | Geography: US

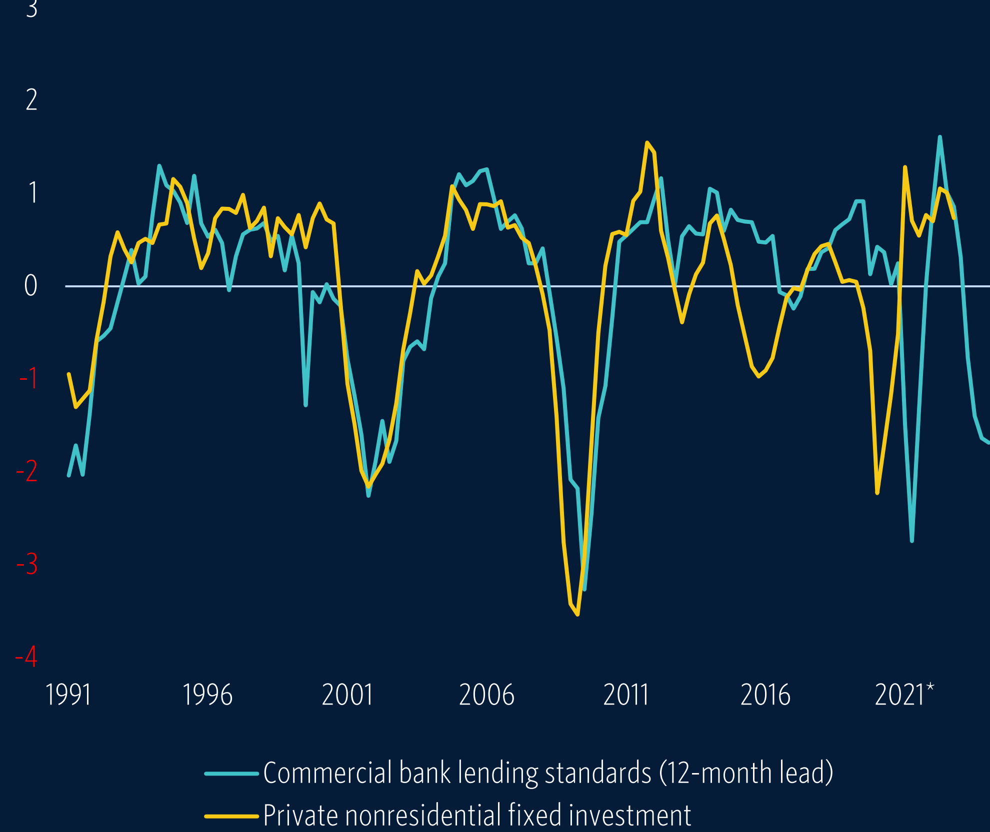
*As of May 8, 2023

...which will likely weigh on corporate lending and, in turn, investment.

Bank lending standards (12-month lead) versus corporate loan growth at commercial banks



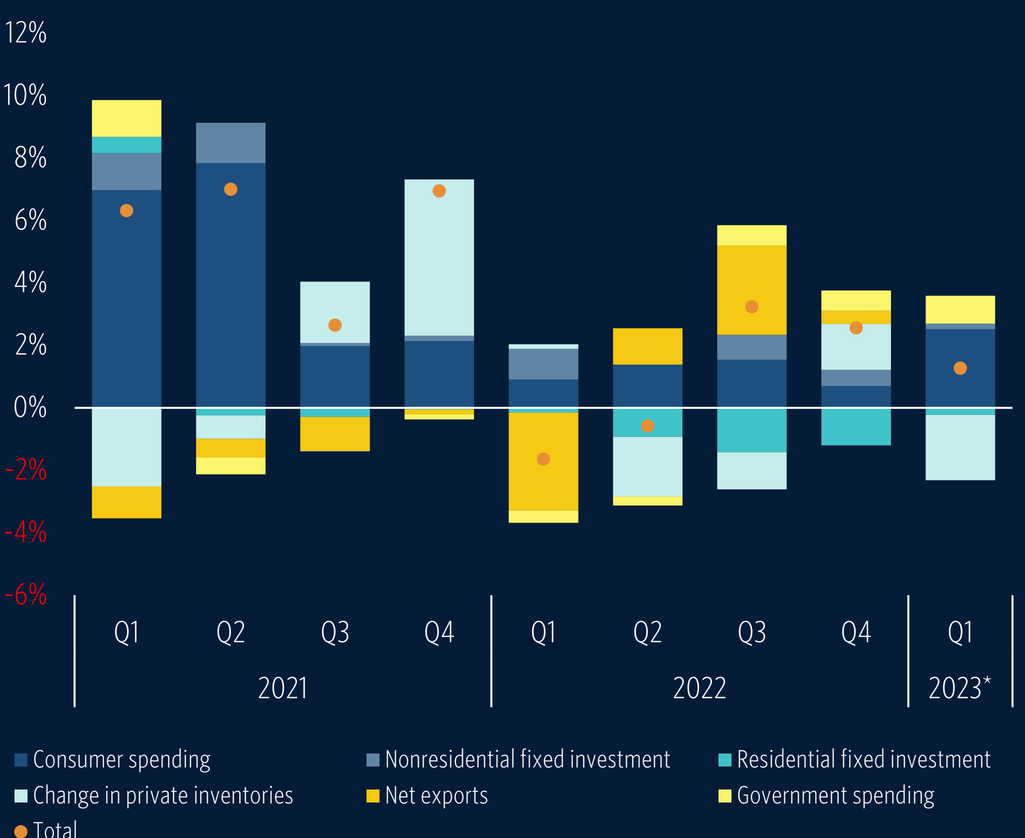
Bank lending standards (12-month lead) versus private nonresidential fixed investment growth



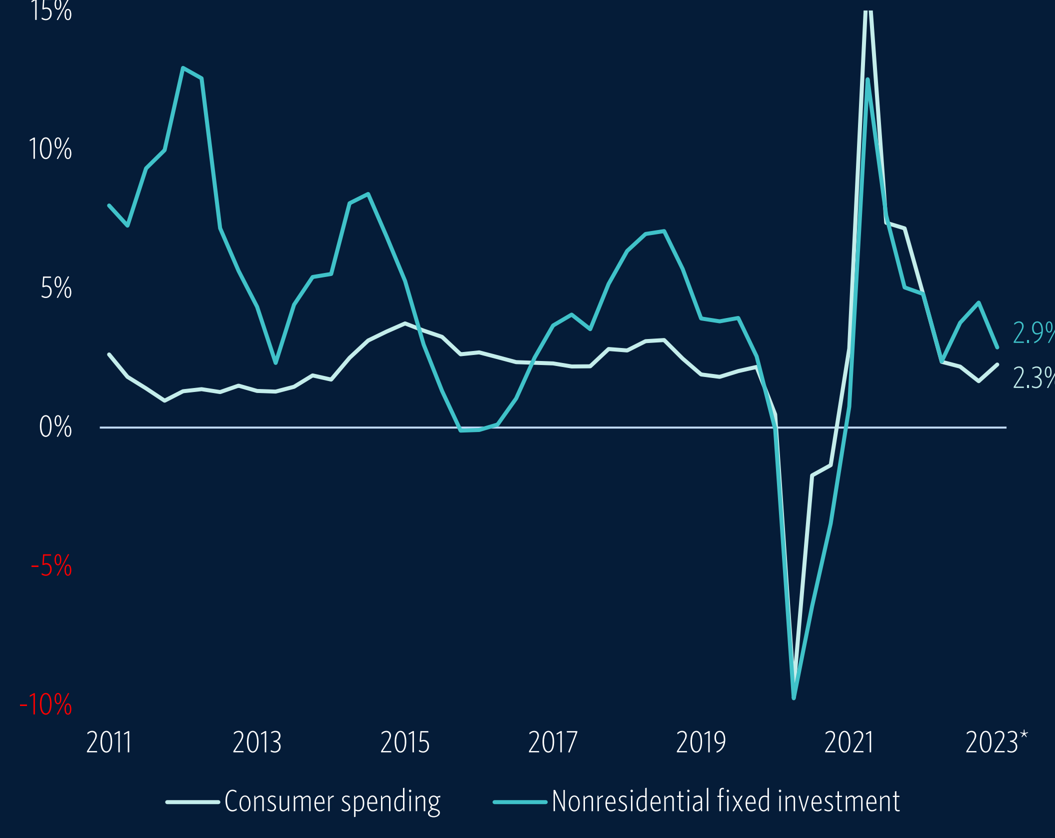
Source: Federal Reserve, Bureau of Economic Analysis | Geography: US
*As of April 30, 2023
Note: Series are mean-standard deviation normalized (Z-score).

Despite unfavorable interest rate and credit conditions, the economy has continued to grow at a reasonable pace thanks to resilient consumer spending...

Contribution to quarterly real GDP growth (annualized)



Real growth in core GDP drivers (YoY)

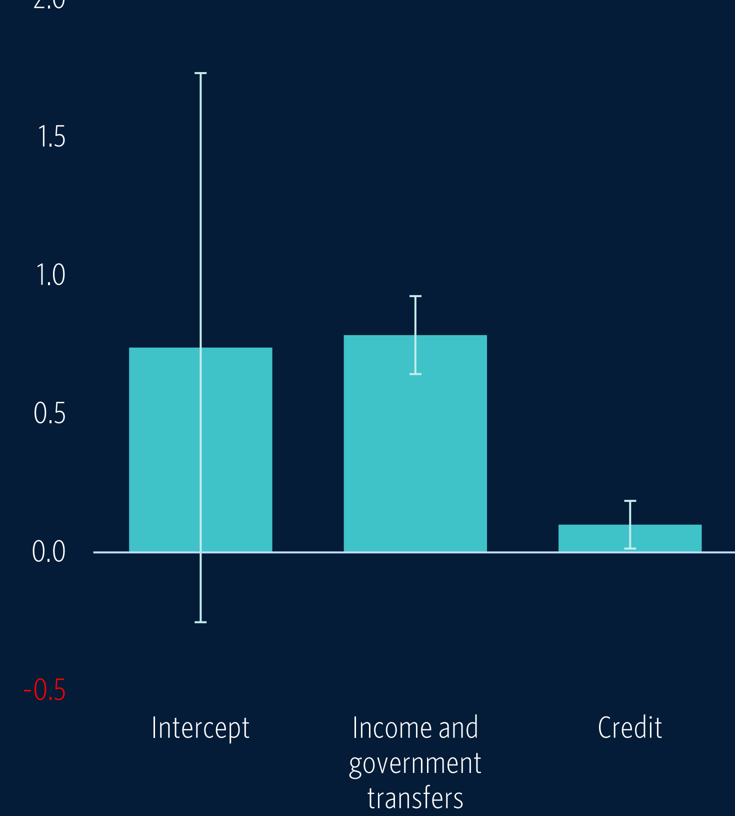


Source: Bureau of Economic Analysis | Geography: US
*As of March 31, 2023
Note: Q1 2023 data is from the second release.

...which tends to be driven more by income growth than credit growth.

Relationships between personal spending, total wages and government transfers, and consumer credit (annual growth)*

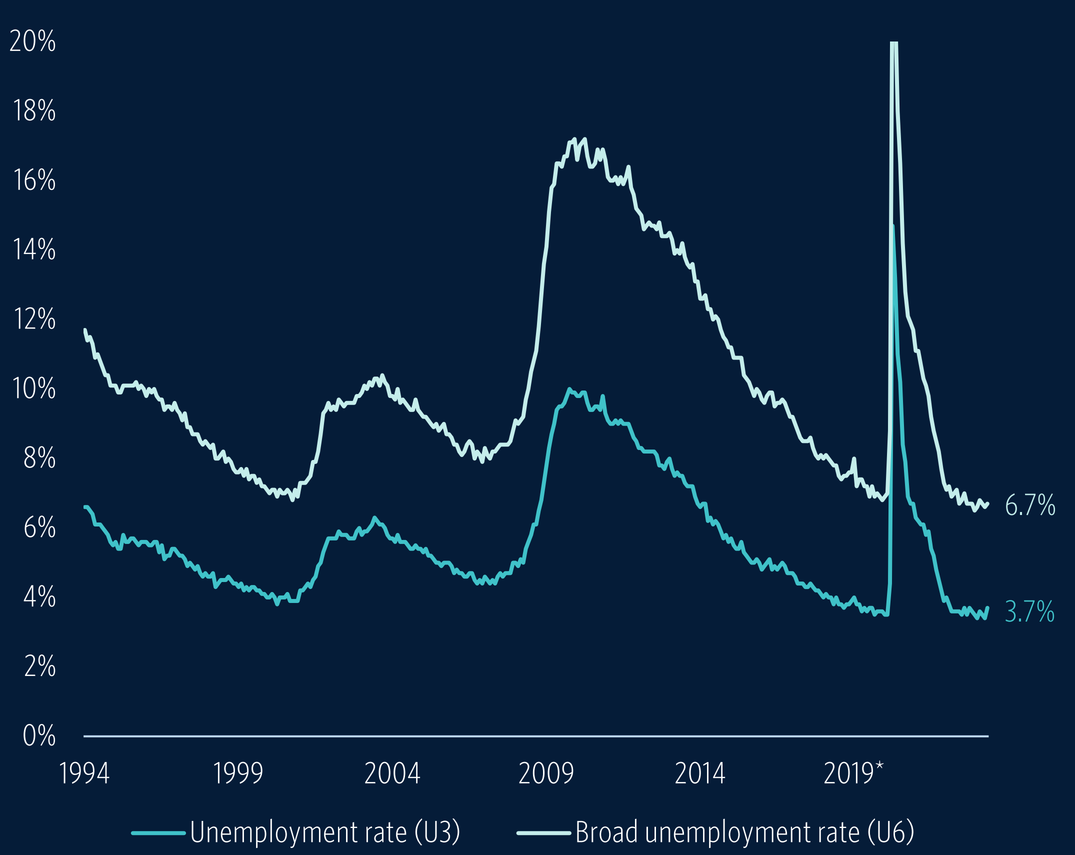
Linear regression coefficients with personal spending growth as the independent variable*



Sources: PitchBook, Bureau of Economic Analysis | Geography: US
*As of December 31, 2022
Note: 2020 was excluded as an outlier. Regression coefficient error bars represent a 95% confidence interval.

Nominal household incomes are being supported by a tight labor market...

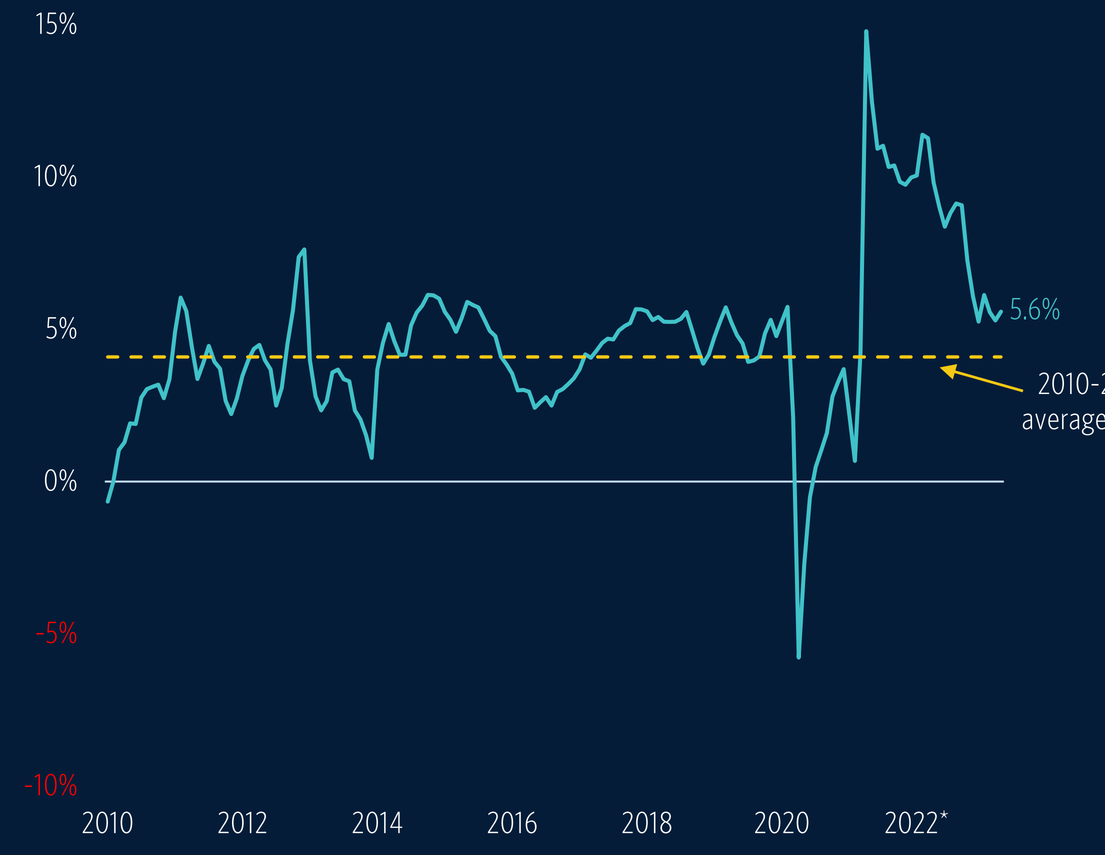
Unemployment rates



Source: Bureau of Labor Services | Geography: US

*As of May 31, 2023

Aggregate nominal wage growth (YoY)

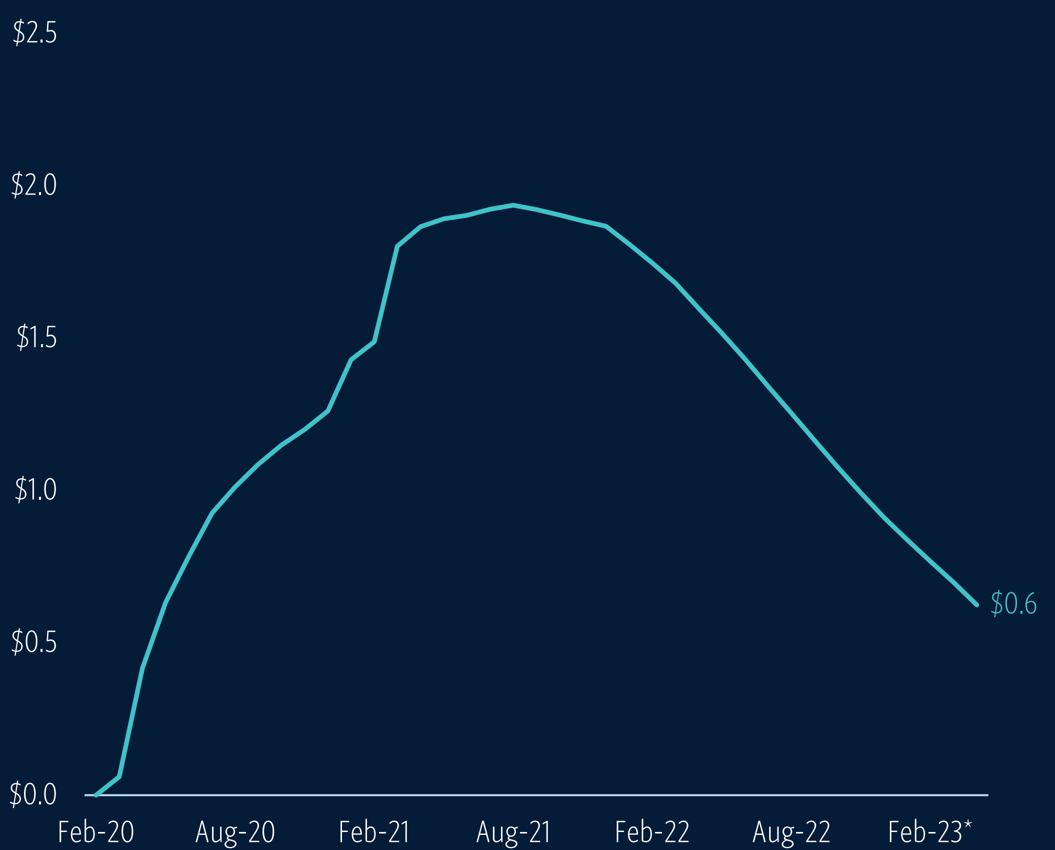


Source: Bureau of Economic Analysis | Geography: US

*As of April 30, 2023

...and consumer fundamentals also remain supportive of sustained nominal spending growth.

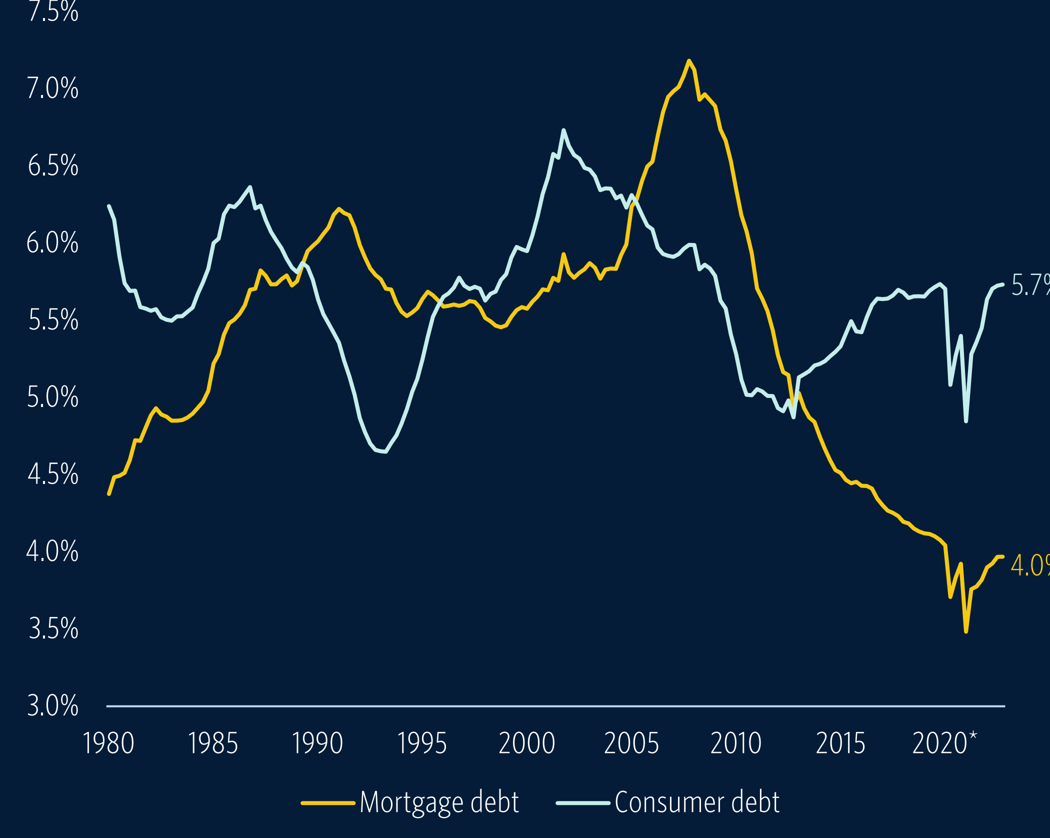
Estimated real excess consumer savings ($T)



Sources: PitchBook, Bureau of Economic Analysis | Geography: US

*As of April 30, 2023

Debt payments as a share of disposable personal income

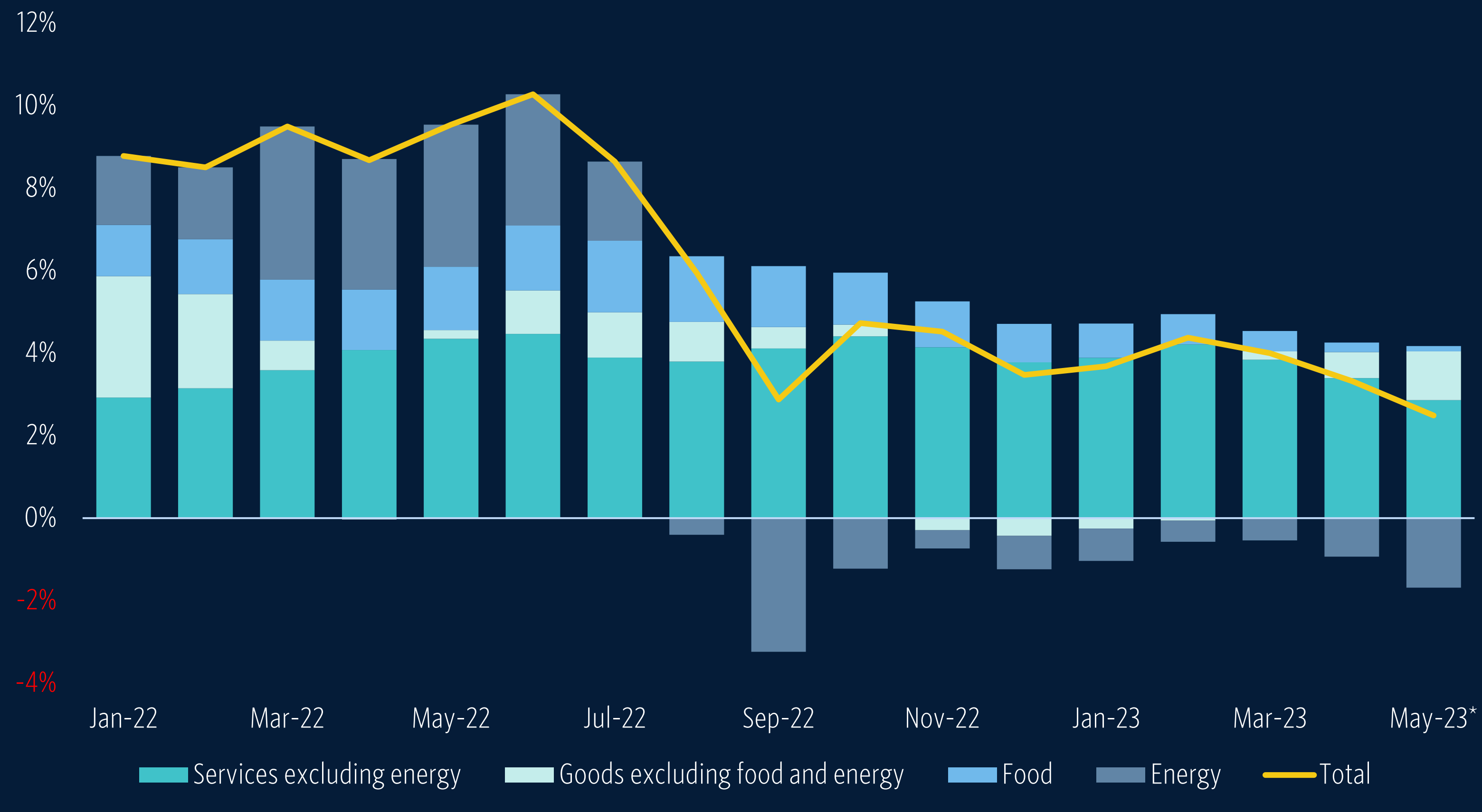


Source: Bureau of Economic Analysis | Geography: US

*As of December 31, 2022

Inflation has been moving sideways for months and, excluding energy, is still too high relative to the Fed's 2% target...

Contribution to CPI inflation by major category (three-month annualized rate)



Sources: Bureau of Labor Services, PitchBook | Geography: US

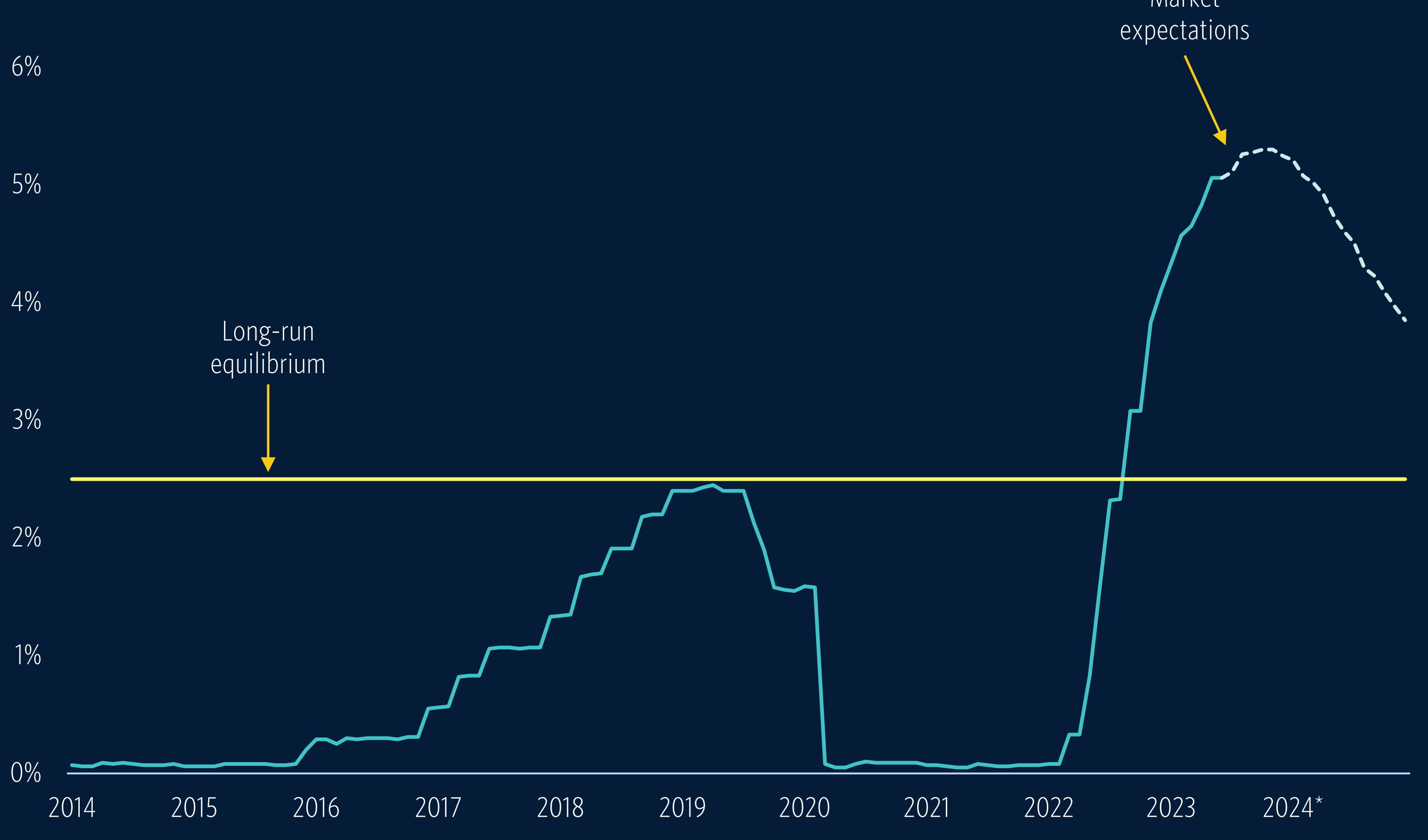
*As of May 31, 2023

While overall inflation has eased from its peak in mid-2022 as supply chains and energy prices have normalized, core inflation remains elevated above desired levels. While the recent disinflationary trend is a positive one, it is still too early to declare that inflation is no longer a concern.

Underlying inflation dynamics reflect a permanent increase in the level of nominal income and spending in an economy that is operating close to its capacity. With nominal income and spending growth currently around 5.5%, it will likely be difficult for inflation to return to 2% without slower wage growth, slower employment growth, or a combination of the two.

...which creates a risk that the Fed may keep short-term rates higher and longer than expected.

Federal funds rate with forward market expectations



Sources: Federal Reserve, CME Group | Geography: US
*As of June 20, 2023
Note: The long-run equilibrium is based on the Fed's latest Summary of Economic Projections.

After much anticipation, at the June 2023 meeting, the Fed did not raise interest rates for the first time since March 2022. It decided to keep the federal funds rate at a target range of 5.00% to 5.25%. However, officials' updated economic projections suggested that this was likely not the end of the hiking cycle, with an expected 50 basis points of additional tightening by year's end.

While the market and the Fed are expecting rates to be lowered in 2024, this will be highly dependent on the path of inflation. The Fed is expecting core inflation to fall from 3.9% to 2.5% by the end of 2024, which will be a precondition for rate cuts. If inflation remains above 3%, we think the Fed will be reluctant to cut rates at all.

Market and PE performance

Key takeaways

- Positive performance in public equities and high-yield credit over the past year is inconsistent with the recession signals coming from the Treasury market.
- Equity performance following the end of Fed tightening cycles has been mixed, but it has been positive more often than not. On average, the S&P 500 was up 7.1% in the 12 months following the final rate hike.
- Buyout fund valuations are slowly being marked down after an extraordinary period of markups in late 2020 and 2021.
- While the performance gap with public equities has closed slightly in recent quarters, buyout funds have still experienced cumulative gains of 81.4% in the three years ended Q4 2022, compared to a gain of just 25.6% for the S&P 500 Index.

Despite elevated recession concerns amid tight credit conditions leading to some volatility, public assets have delivered positive returns over the past year outside of commodities...

Select public market indexes (indexed to 100)

140
130
120
110
100
90
80
70
60

Jun-22 Aug-22 Oct-22 Dec-22 Feb-23 Apr-23 Jun-23*

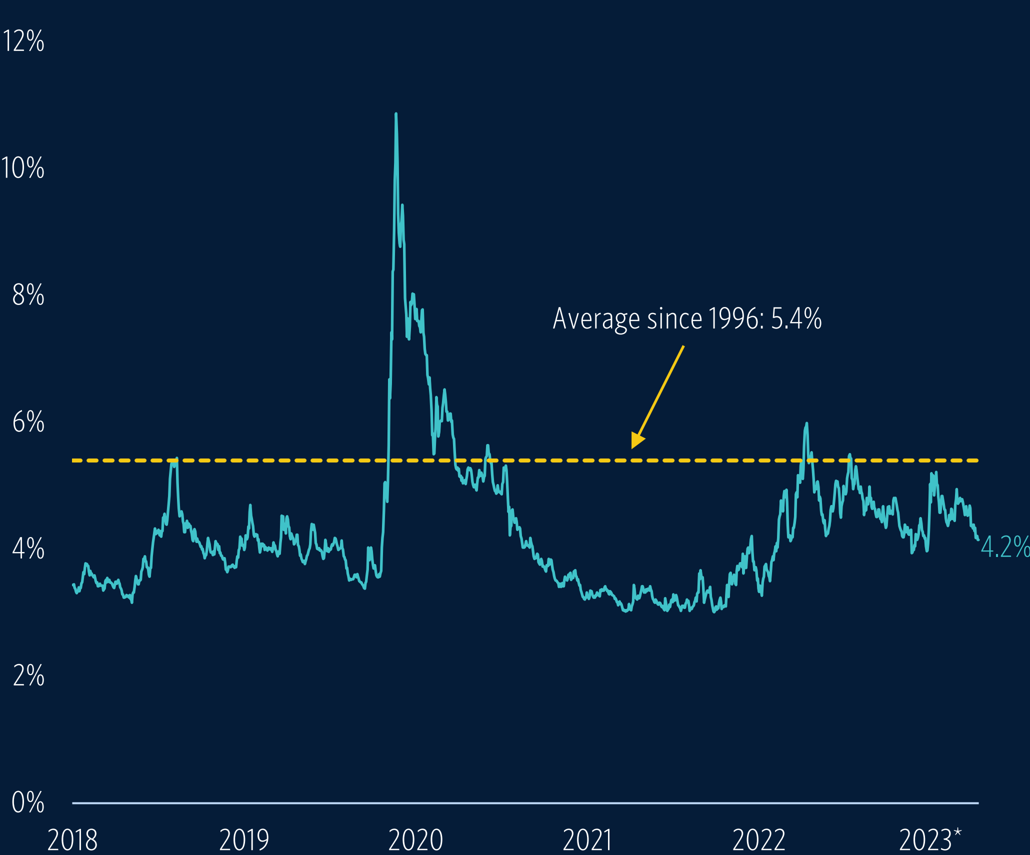
S&P 500
NASDAQ
Bloomberg US Agg Bond
Bloomberg US Corporate High Yield
Bloomberg Commodity

Source: Morningstar | Geography: US

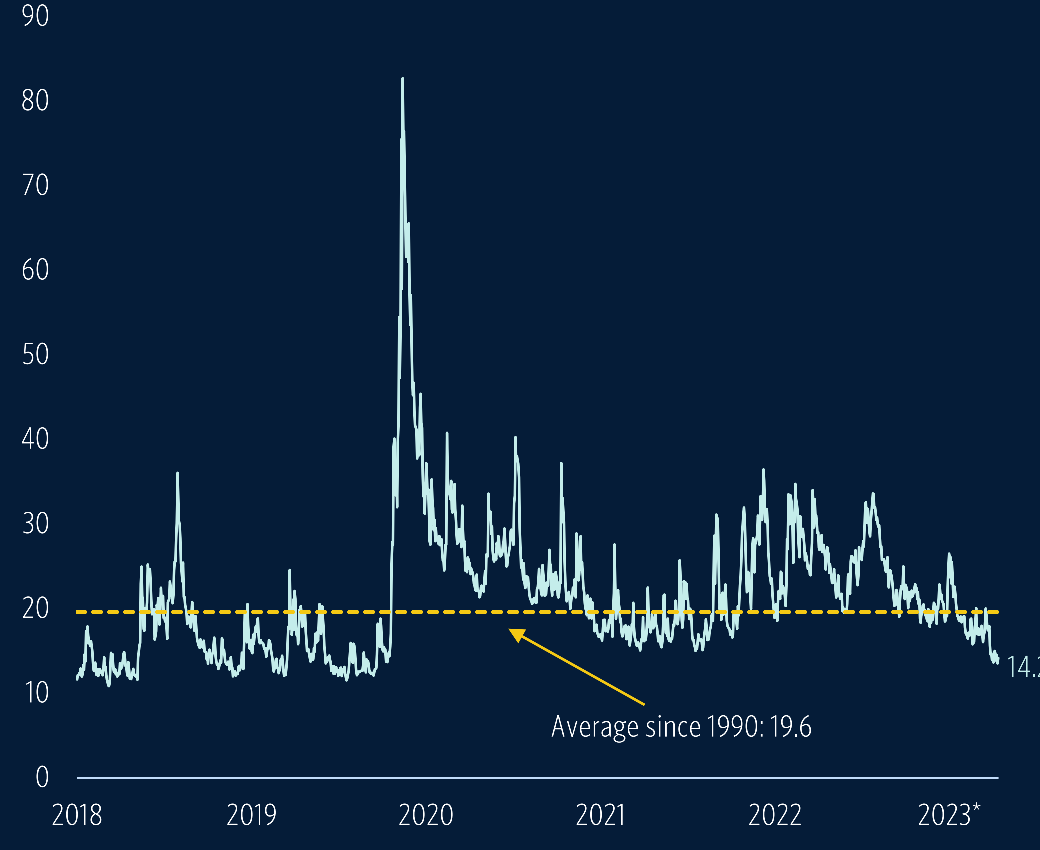
*As of June 16, 2023

...and market risk indicators are below average.

High-yield corporate credit spreads



S&P 500 implied volatility (VIX)



Sources: ICE BofA Indexes, CBOE | Geography: US

*As of June 16, 2023

Equity performance following the end of Fed tightening cycles has been mixed—but positive on average.

S&P 500 indexed to 100 at the end of Fed tightening cycles

240
220
200
180
160
140
120
100
80
60
40

Average: 105.9
Positive: 6/11

Average: 107.1
Positive: 7/11

Average: 108.8
Positive: 8/11

1993 hike cycle:
219.7

Average hike cycle:
137.4

1999 hike cycle:
67.5

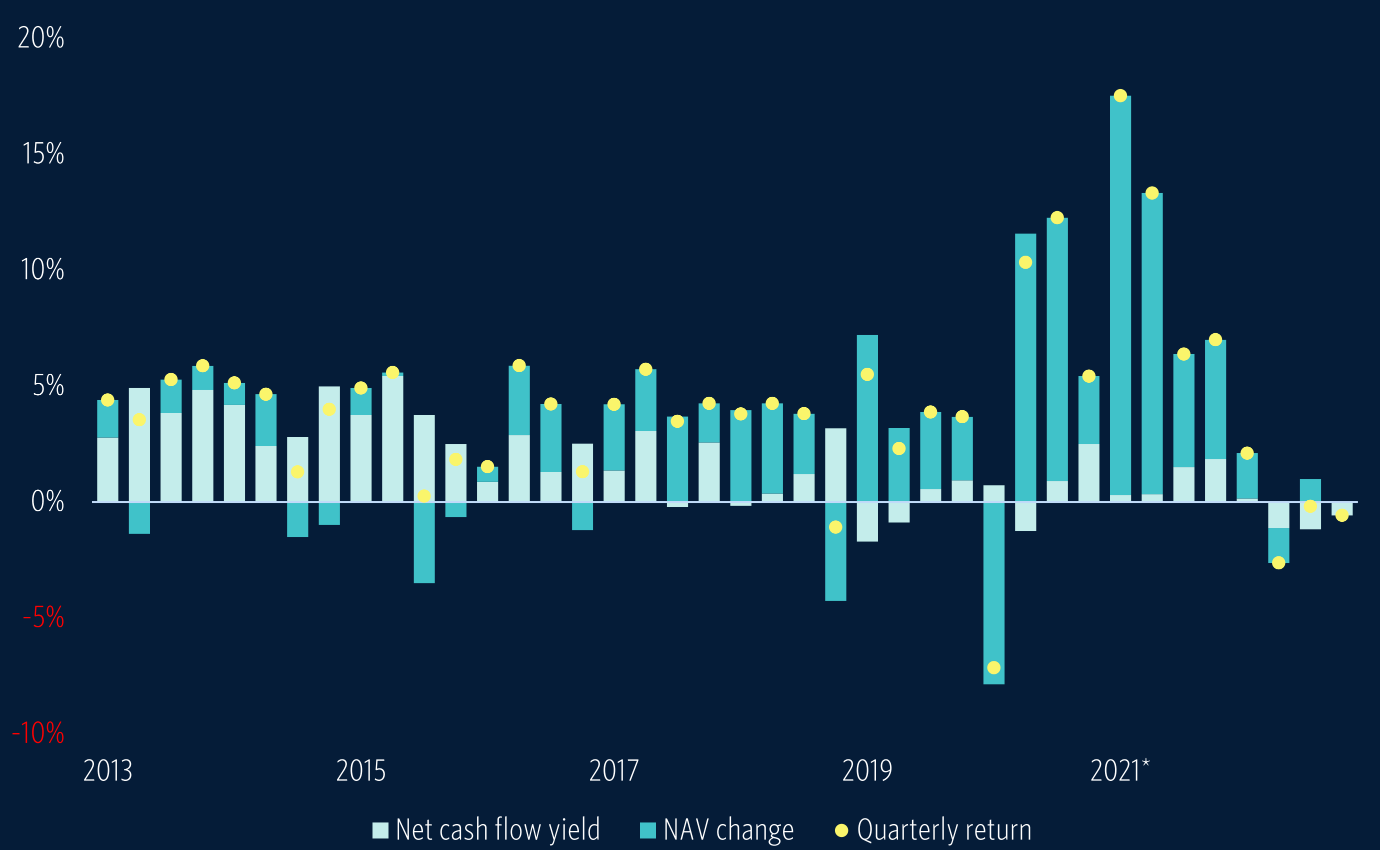
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36

Time (months) from end of the tightening cycle

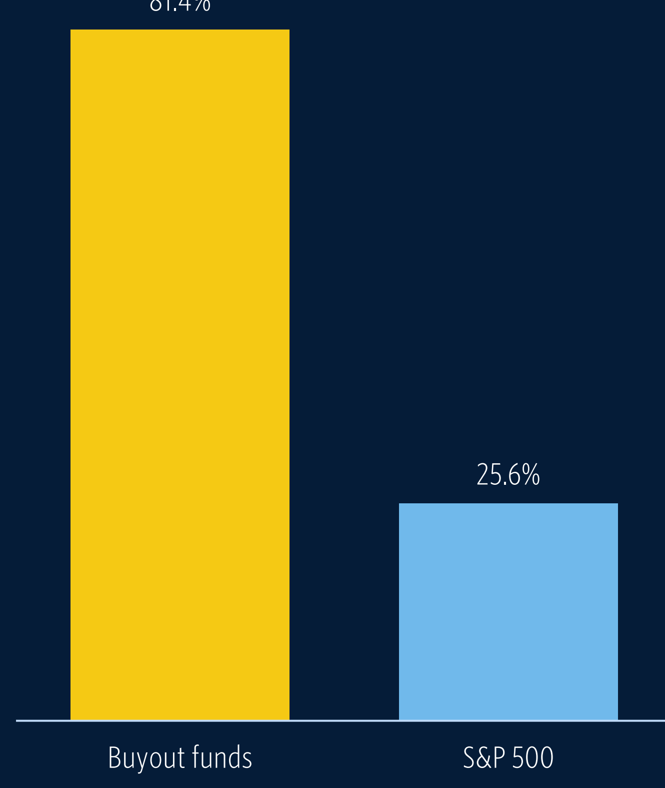
Sources: Federal Reserve, PitchBook | Geography: US

Buyout funds have slowly started to mark down portfolio valuations, but significant unrealized gains remain on the books…

Quarterly PE buyout fund performance attribution



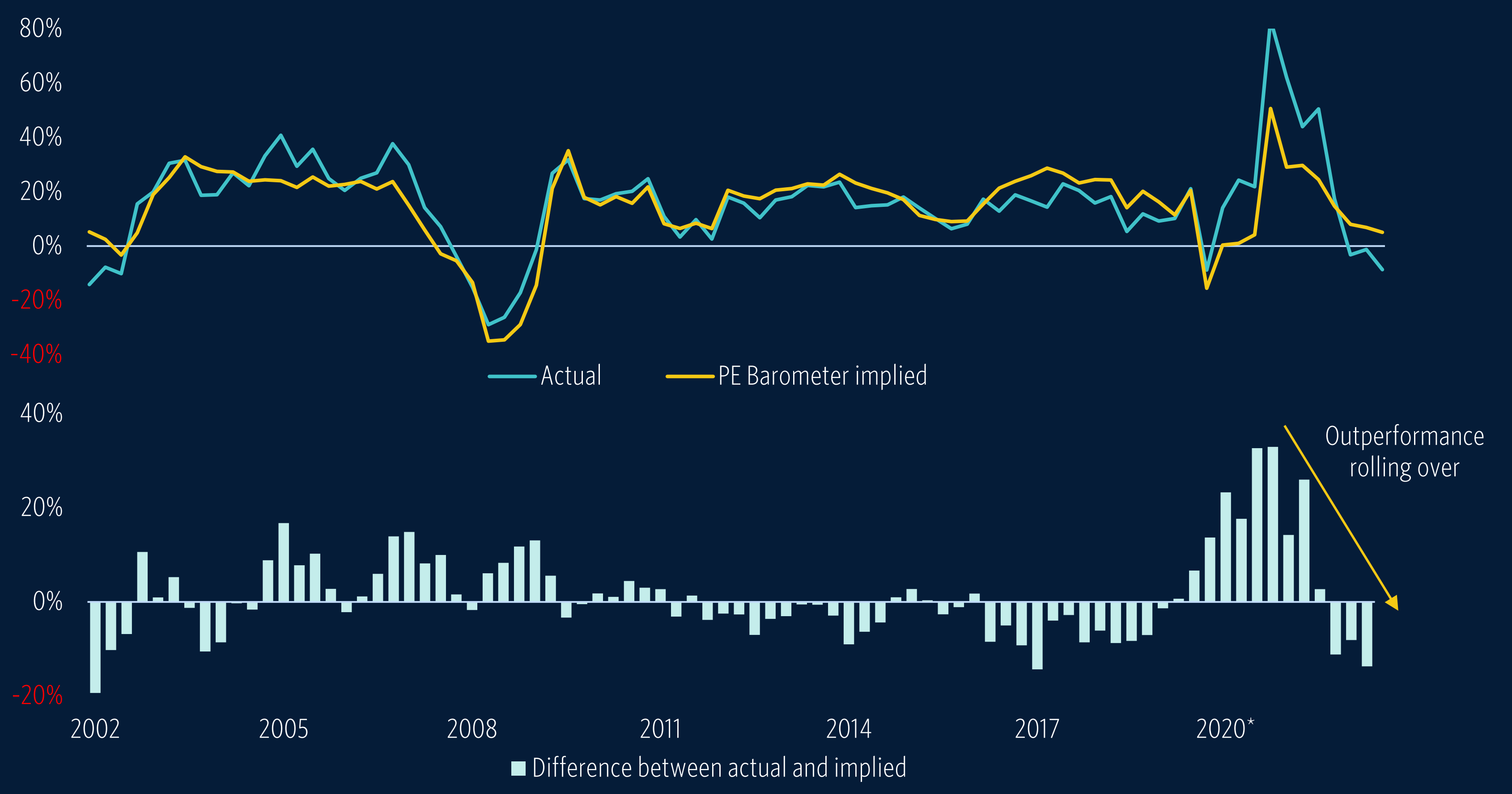
Cumulative returns from 2020 to 2022*



Source: PitchBook | Geography: US
*As of December 31, 2022
Note: The Q4 2022 figure is preliminary.

...as fund performance significantly outpaced fundamentals, but this outperformance is now reversing.

Rolling one-year PE fund returns



Source: PitchBook | Geography: US
*As of December 31, 2022
Note: The Q4 2022 return is preliminary.

The PitchBook PE Barometer is a factor-based framework that estimates PE fund returns based on key economic and market variables. Historically, it has tracked actual returns reasonably well. However, from late 2020 through 2021, PE fund returns were considerably higher than the implied returns from the PE Barometer. This performance gap has started to reverse over the past three quarters as fund managers slowly mark their valuations to market.

For more information about the PitchBook PE Barometer, please visit this webpage.

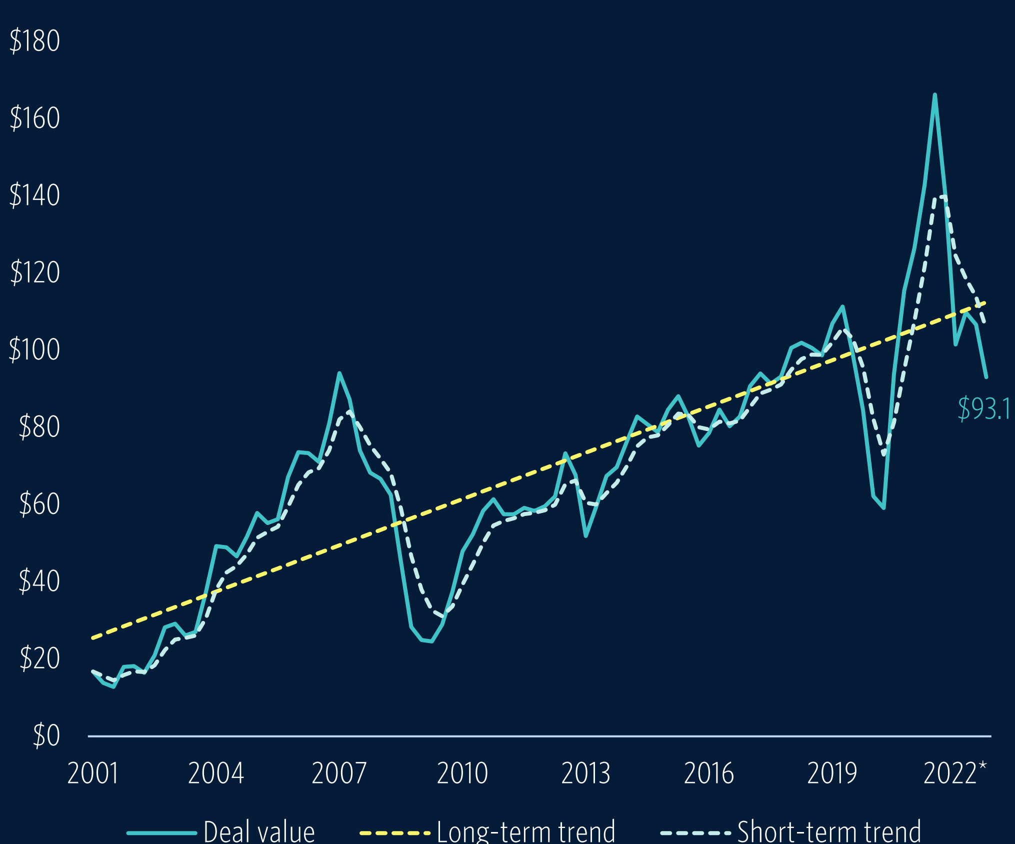
Debt and dealmaking

Key takeaways

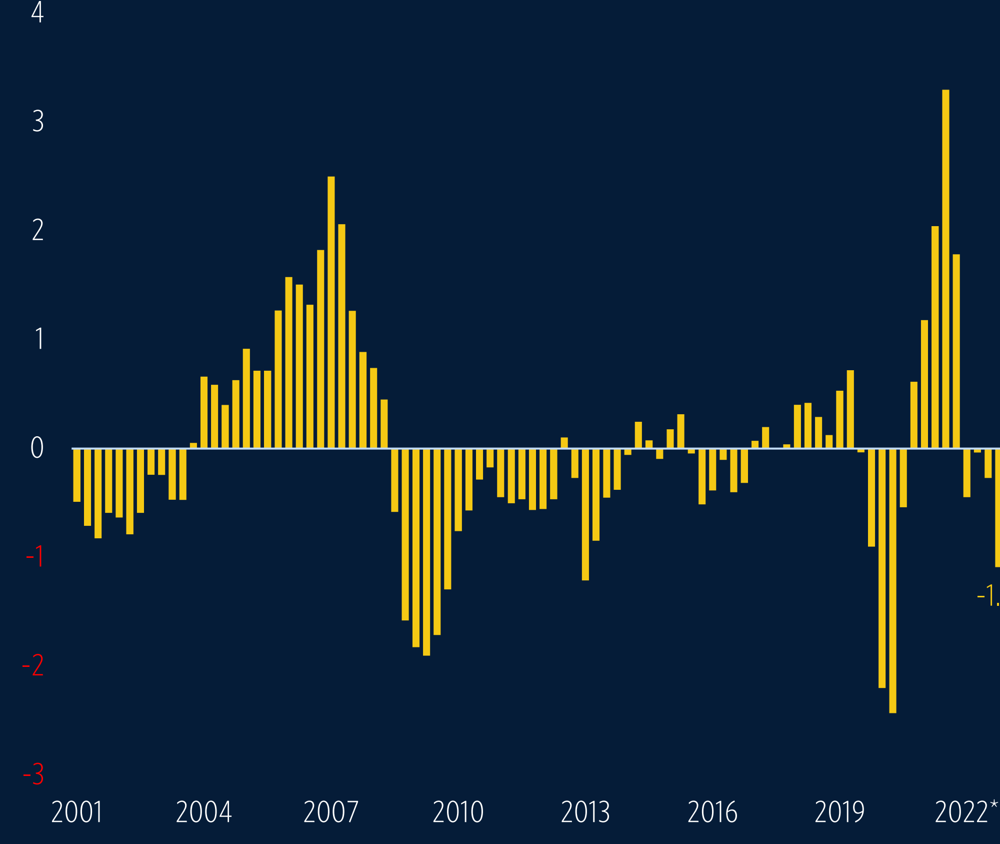
- After showing resilience in the face of rising interest rates throughout most of 2022, buyout deal activity has slowed materially in the last two quarters. High debt costs and a pullback in credit availability have started to put pressure on the buyout model at current valuations.
- PE deals less reliant on financing, including add-ons and growth equity, continue to close at a pace above their long-term trends.
- Buyout valuations for deals closed in the past 12 months through Q1 2023 have ticked down slightly to 11.1x EBITDA and remain below current public market multiples.
- Private credit continues to take market share from buyout debt as issuance in the syndicated loan market has hit its lowest level since 2008.
- The rise in benchmark interest rates has pushed B-rated credit yields to 11.0% in the secondary market. Higher debt costs will continue to weigh on interest coverage ratios, especially as corporate profits have begun to normalize from record highs.
- An uptick in defaults for syndicated loans with financial covenants to the highest rate since 2008 may be an early warning sign for more popular covenant-light loans, which make up the majority of outstanding loans.
- While the ability to cover increasing debt payments is an immediate concern, buyout-backed companies have little need to roll over existing leveraged loans until 2025.

After showing resilience throughout most of 2022, buyout dealmaking has slowed materially in the past two quarters...

Rolling six-month buyout deal value ($B) trends



Rolling six-month buyout deal value relative to long-term trend (Z-score)



Source: PitchBook | Geography: US
*As of March 31, 2023
Note: Data is seasonally adjusted and includes estimates for the most recent four quarters.

...but investments less reliant on leverage, such as add-ons and growth equity, continue to close at a pace well above their long-term trends.

Trailing six-month PE deal trends dashboard*

	Segment	Deal count				Deal value			
		Current	% of total	Long-term score	Short-term score	Current ($B)	% of total	Long-term score	Short-term score
	Total	4,174	100.0%			$331.9	100.0%		
Sector	B2B	1,736	40.4%			$135.9	40.3%		
Sector	B2C	623	14.5%			$44.3	13.1%		
Sector	Energy	130	3.0%			$17.9	5.3%		
Sector	Financial services	360	8.4%			$24.7	7.3%		
Sector	Healthcare	651	15.2%			$44.6	13.2%		
Sector	Information technology	694	16.2%			$61.2	18.1%		
Sector	Materials & resources	98	2.3%			$8.5	2.5%		
Type	Buyout	781	18.7%			$93.1	28.0%		
Type	Add-ons	2,678	64.2%			$206.1	62.1%		
Type	PE growth	837	20.1%			$37.9	11.4%		

Trend (Z-score)

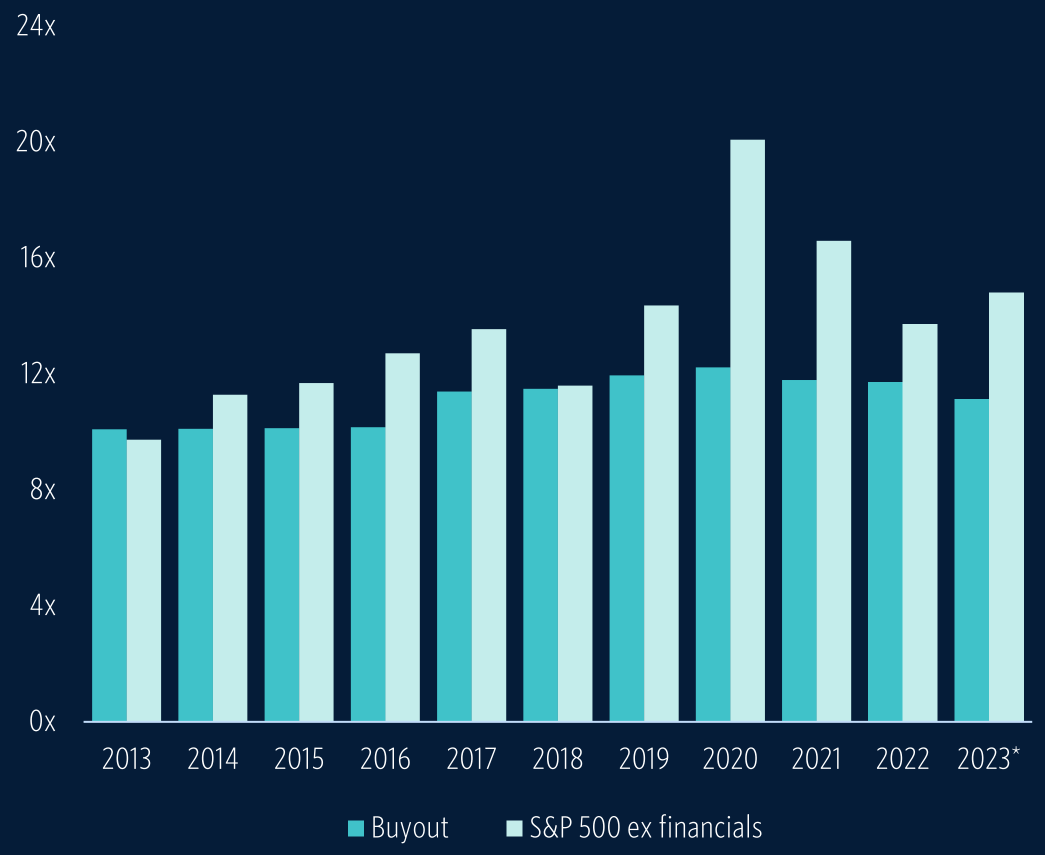
-2.0 +2.0

Source: PitchBook | Geography: US
*As of March 31, 2023
Note: Data is seasonally adjusted and includes estimates for the most recent four quarters.

The PE deal trends dashboard provides a quantitative assessment of overall deal activity in the past six months, as well as within each sector and deal type after adjusting for seasonality and reporting lags. The long- and short-term scores represent Z-score normalized deviations from a full-period linear trendline and a 12-month exponential moving average, respectively.

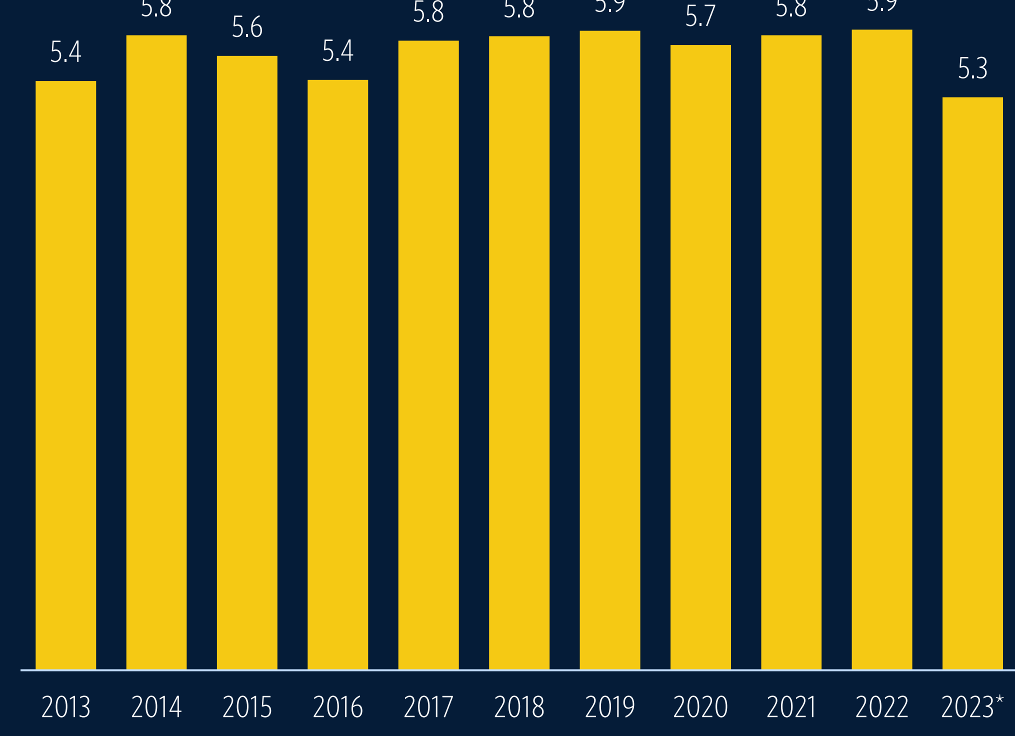
Buyout valuations have ticked down slightly to 11.1x EBITDA, and less leverage was employed on deals completed in the first quarter of 2023 compared with the last several years.

Public equity versus buyout EV/EBITDA multiples



Sources: PitchBook, Morningstar | Geography: North America & Europe
*As of March 31, 2023
Note: 2023 buyout multiple is TTM.

Buyout debt/EBITDA ratios



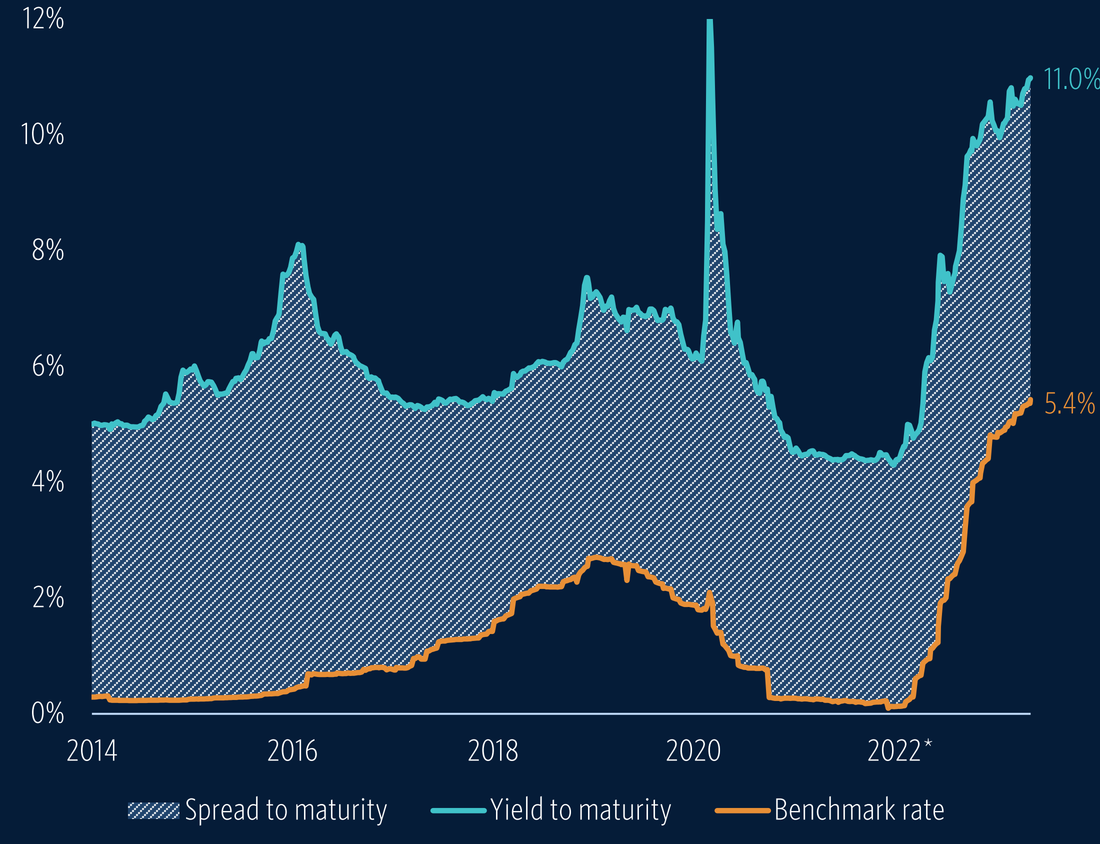
Sources: LCD, Morningstar | Geography: US

*As of March 31, 2023

Tighter credit conditions and higher benchmark rates have shut off the leveraged loan market, which has been the primary source of buyout debt in recent years.

Rolling six-month leveraged loan issuance ($B) for buyouts

Yield to maturity attribution for B-rated leveraged loans

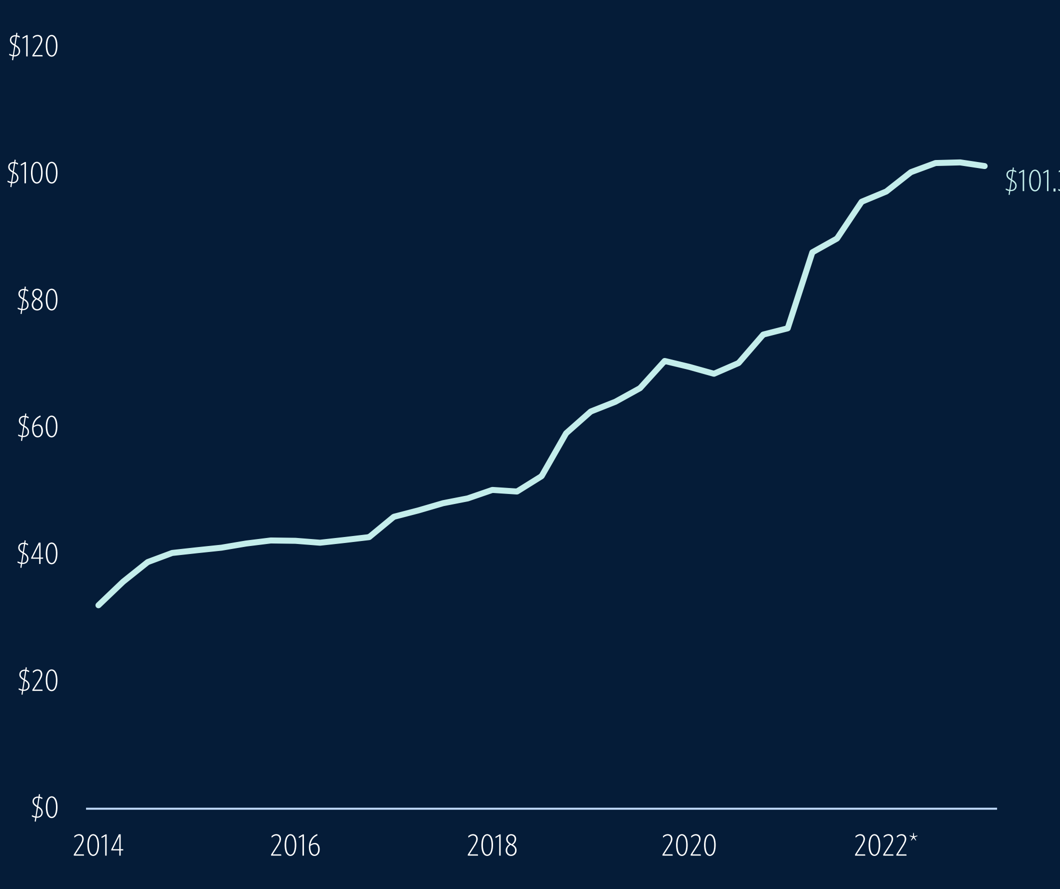


Source: LCD | Geography: US

*As of May 31, 2023

Lending by business development companies (BDCs) has also slowed, but less so than in the syndicated loan market as private credit continues to gain market share of buyout debt.

BDC total loan assets at fair value ($B)

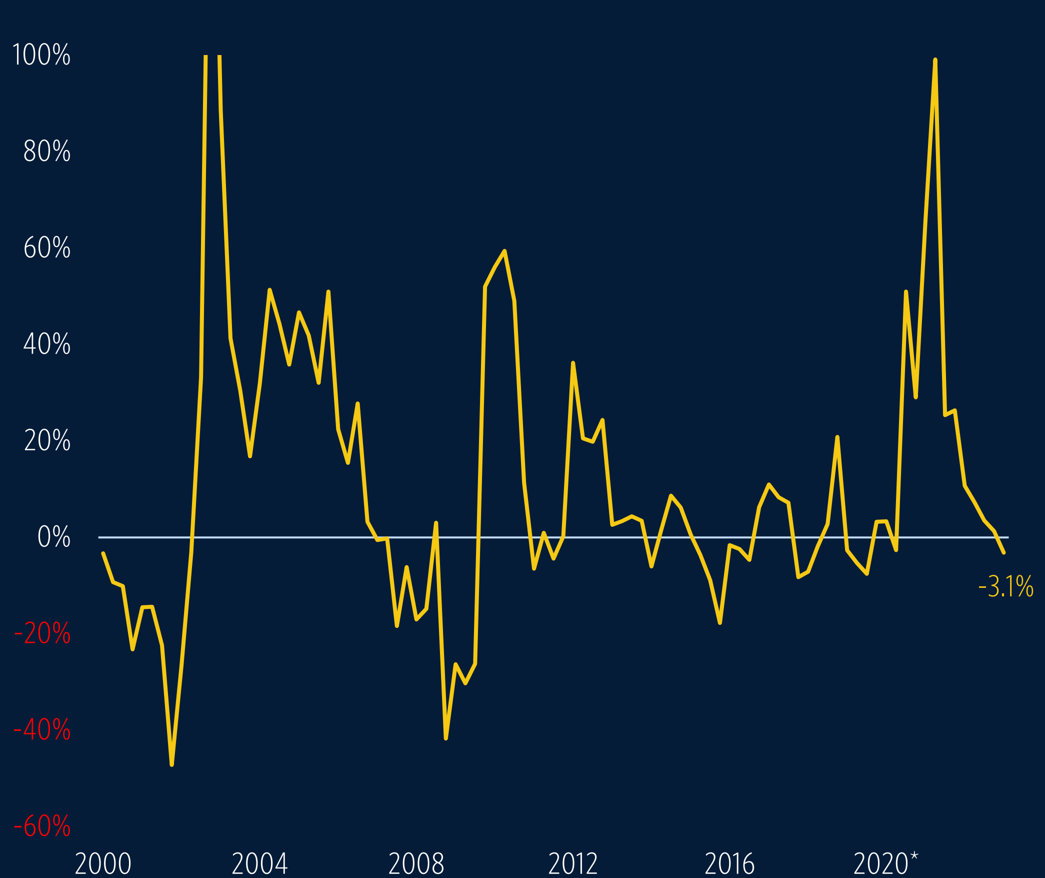


BDC trailing six-month net new loans ($B)

Source: Morningstar | Geography: US
*As of March 31, 2023
Note: The BDCs included in the data are based off the holdings of the Van Eck BDC Income ETF.

The continued rise in debt costs comes at a time when corporate profits are normalizing after a period of strong growth and record-high profit margins…

Nonfinancial corporate profit growth (YoY)



Nonfinancial corporate profit margins

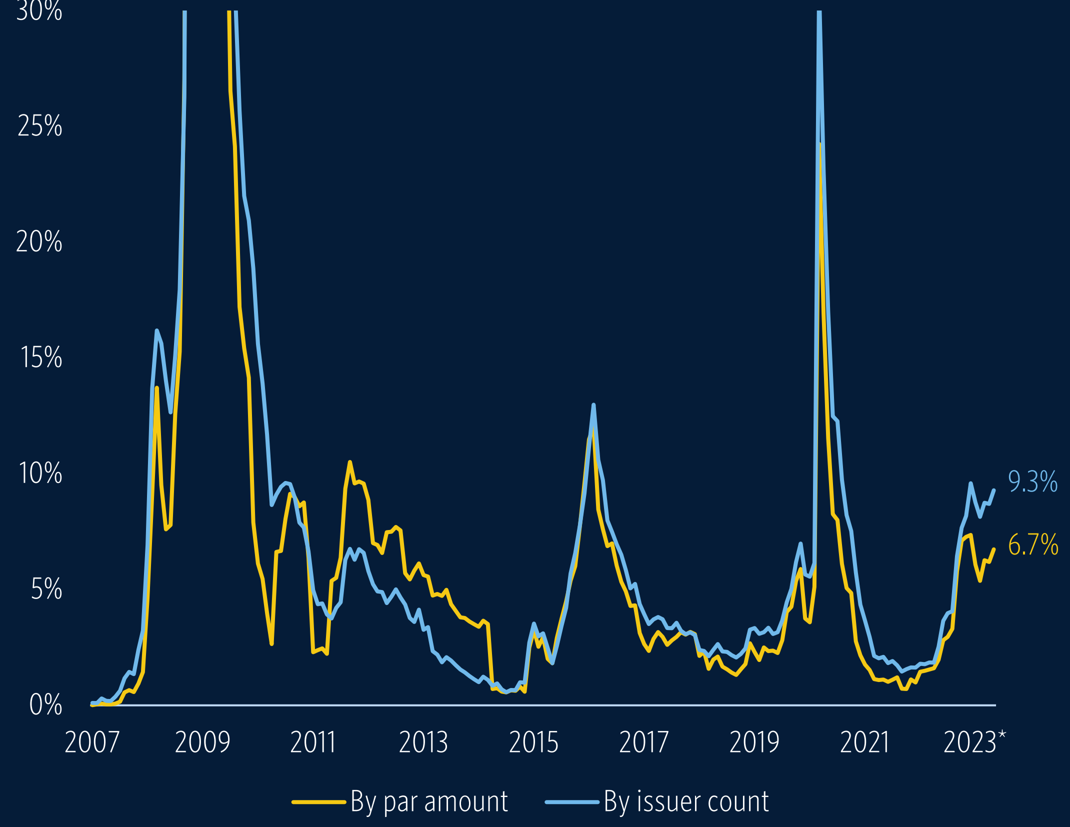
Source: Bureau of Economic Analysis | Geography: US

*As of March 31, 2023

...which has already resulted in an increase in distress and defaults in the leveraged loan market, especially for the smaller portion of loans with financial covenants.

Morningstar LSTA Leveraged Loan Index default rates by issuer count

Morningstar LSTA Leverage Loan Index distressed ratio



Sources: Morningstar, LCD | Geography: US
*As of May 31, 2023
Note: Default rates and distress ratios are trailing 12-month statistics.

While the ability to cover debt payments is an immediate concern, the need for sponsors to refinance existing loans will be low until 2025.

Maturity breakdown ($B) of the Morningstar LSTA Leveraged Loan Index*

	Not sponsored	Sponsored
2023	$1.2	$2.7
2024	$9.1	$40.9
2025	$52.7	$121.6
2026	$81.5	$140.7
2027	$104.2	$142.9
2028	$184.2	$296.7
2029	$74.7	$110.0
2030	$21.2	$3.9

$350 $300 $250 $200 $150 $100 $50 $0

■ Not sponsored ■ Sponsored

Source: LCD | Geography: US

*As of March 31, 2023

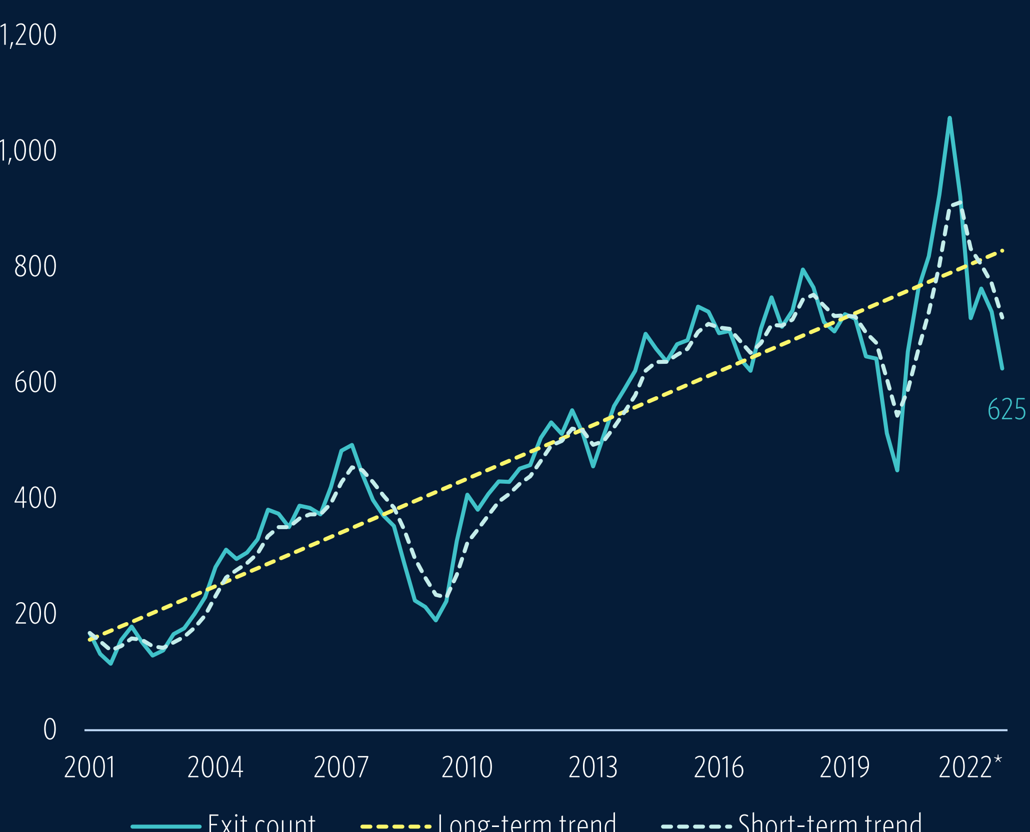
The exit drought

Key takeaways

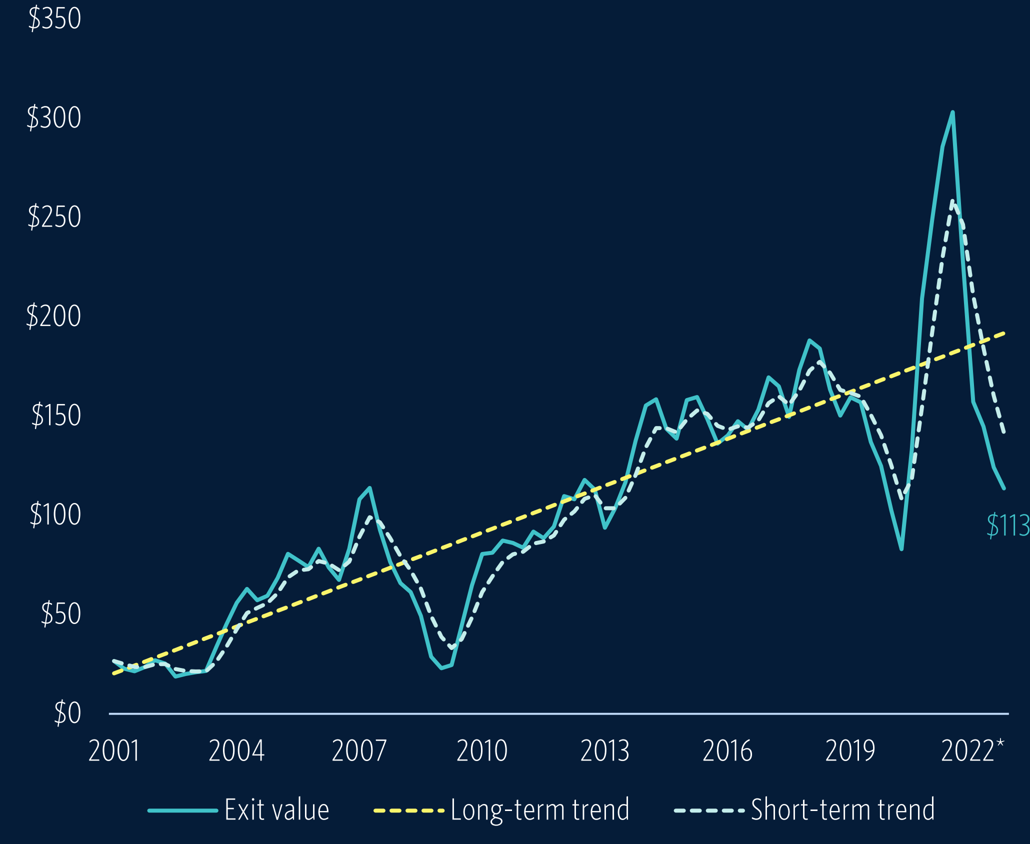
- Exit activity has slowed to a level that is comparable to slowdowns that occurred in 2008 and 2020.
- Based on the deviation of exit activity from its long-term trend, we estimated a cumulative exit shortfall of $60 billion since the beginning of 2019 through Q1 2023.
- Companies that were acquired via a leveraged buyout (LBO) from 2016 to 2020 have exited at a much slower than expected pace, resulting in an estimated exit backlog of 664 companies.
- If the slowdown in exits persist, buyout holding periods will increase, pushing out fund distributions to LPs. Fund vintages that are currently the most sensitive to the exit market have started to see DPI ratios flatten out to more average levels.
- Pushing out the timing of fund distributions will mechanically lower IRRs even if TVPI ratios eventually recover.

Exit activity has fallen sharply below its long-term trend...

Rolling six-month PE exit count trends



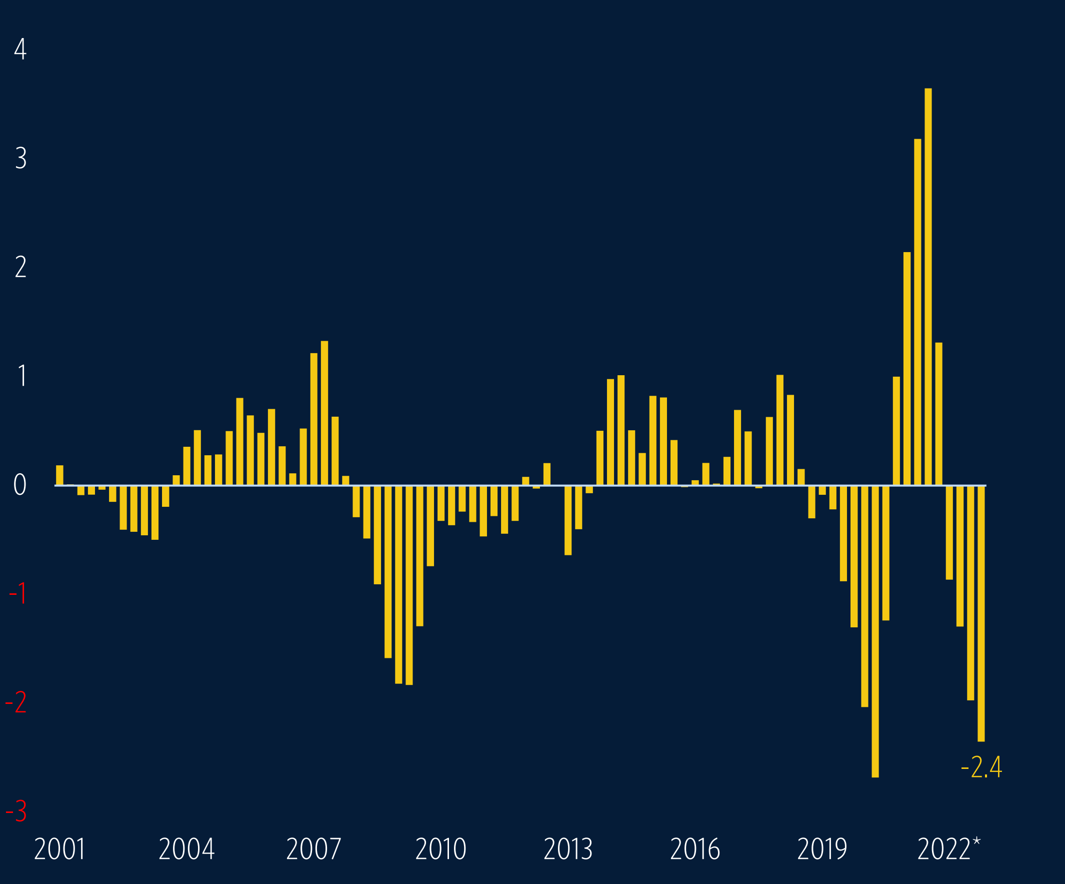
Rolling six-month PE exit value ($B) trends



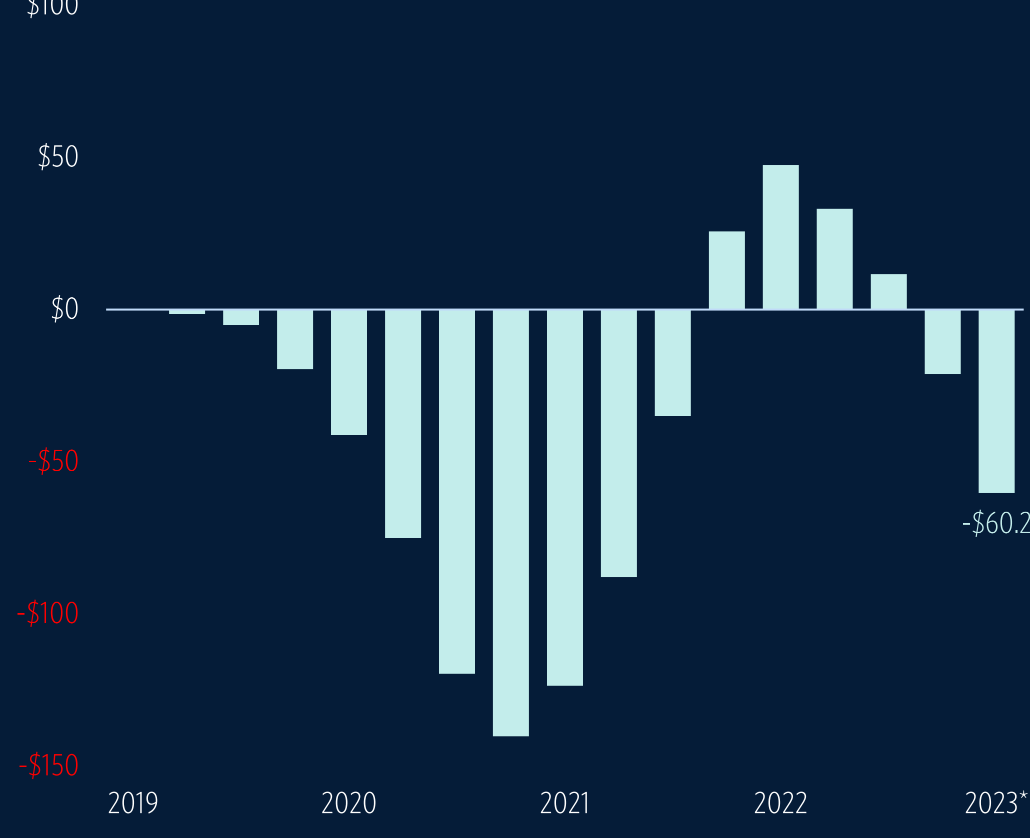
Source: PitchBook | Geography: US
*As of March 31, 2023
Note: Data is seasonally adjusted and includes estimates for the most recent four quarters.

…which is on par with slowdowns that occurred in 2008 and 2020, resulting in an estimated $60 billion less in exit value since 2019 than implied by the long-term trend.

Rolling six-month exit value relative to long-term trend (Z-score)



Cumulative exit value surplus/shortfall since 2019 ($B)



Source: Pitchbook | Geography: US
*As of March 31, 2023
Note: Exit value surplus/shortfall is based on the deviation from its long-term trend.

Exit activity trends are negative across all sectors and exit types.

Trailing six-month PE exit trends dashboard*

	Segment	Exit count: Current	Exit count: % of total	Exit count: Long-term score	Exit count: Short-term score	Exit value: Current ($B)	Exit value: % of total	Exit value: Long-term score	Exit value: Short-term score
	Total	628	100.0%			$114.0	100.0%		
Sector	B2B	266	41.4%			$44.1	38.7%		
Sector	B2C	100	15.6%			$13.5	11.8%		
Sector	Energy	39	6.1%			$12.2	10.7%		
Sector	Financial services	34	5.3%			$6.2	5.5%		
Sector	Healthcare	71	11.0%			$13.0	11.5%		
Sector	Information technology	102	15.9%			$20.8	18.3%		
Sector	Materials & resources	31	4.8%			$4.0	3.5%		
Type	Acquisition	329	51.2%			$61.7	54.2%		
Type	Buyout	304	47.3%			$50.5	44.4%		
Type	Public listing	10	1.6%			$1.6	1.4%		

Trend (Z-score)

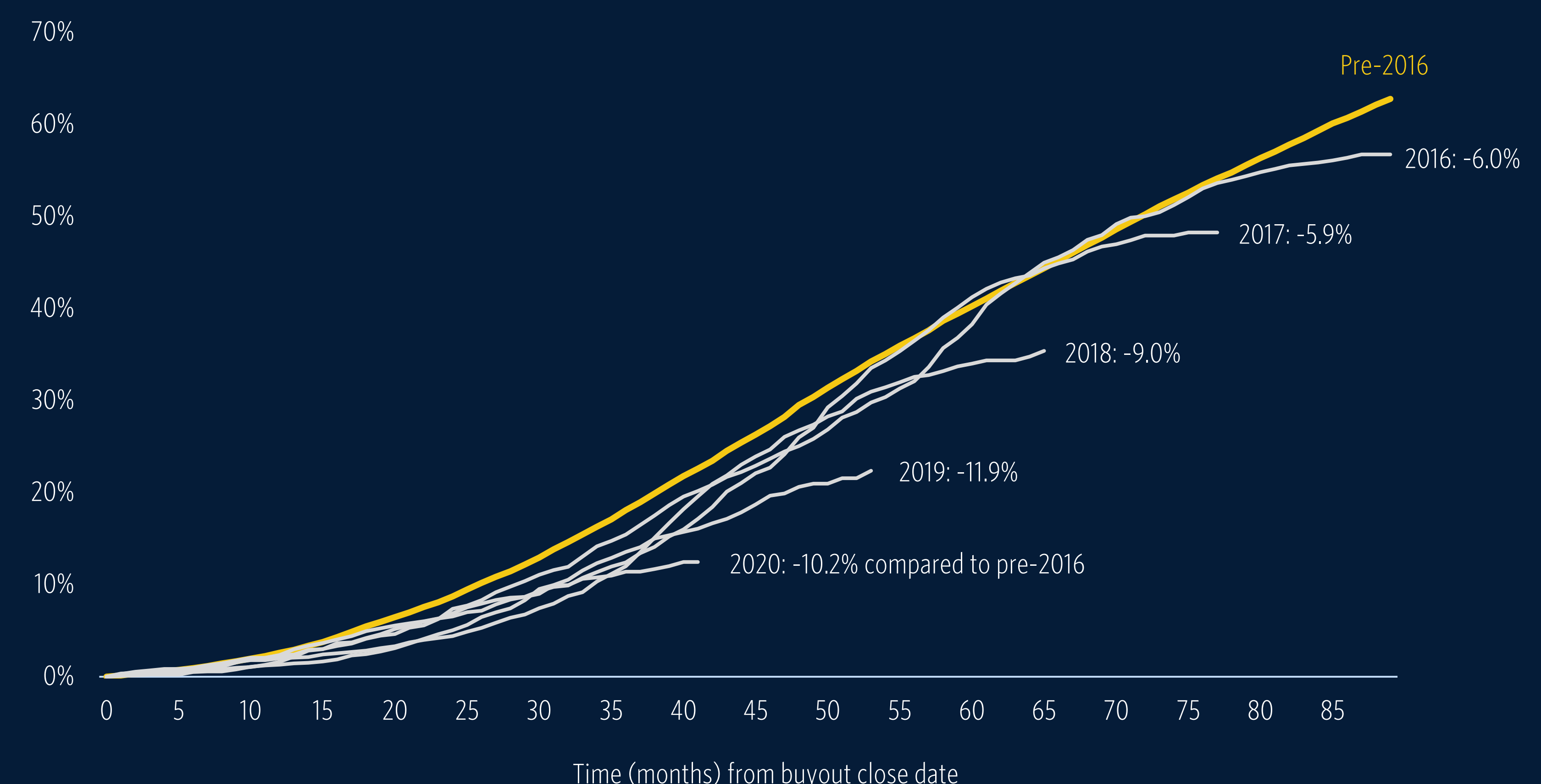
-2.0 +2.0

Source: PitchBook | Geography: US
*As of March 31, 2023
Note: Data is seasonally adjusted and includes estimates for the most recent four quarters.

The PE exit trends dashboard provides a quantitative assessment of overall exit activity in the past six months, as well as within each sector and exit type after adjusting for seasonality and reporting lags. The long- and short-term scores represent Z-score normalized deviations from a full-period linear trendline and a 12-month exponential moving average, respectively.

Companies that were acquired via LBO from 2016 to 2020 have exited at a much slower than expected pace.

Buyout-backed company exit rates by deal year versus pre-2016*



Source: PitchBook | Geography: US

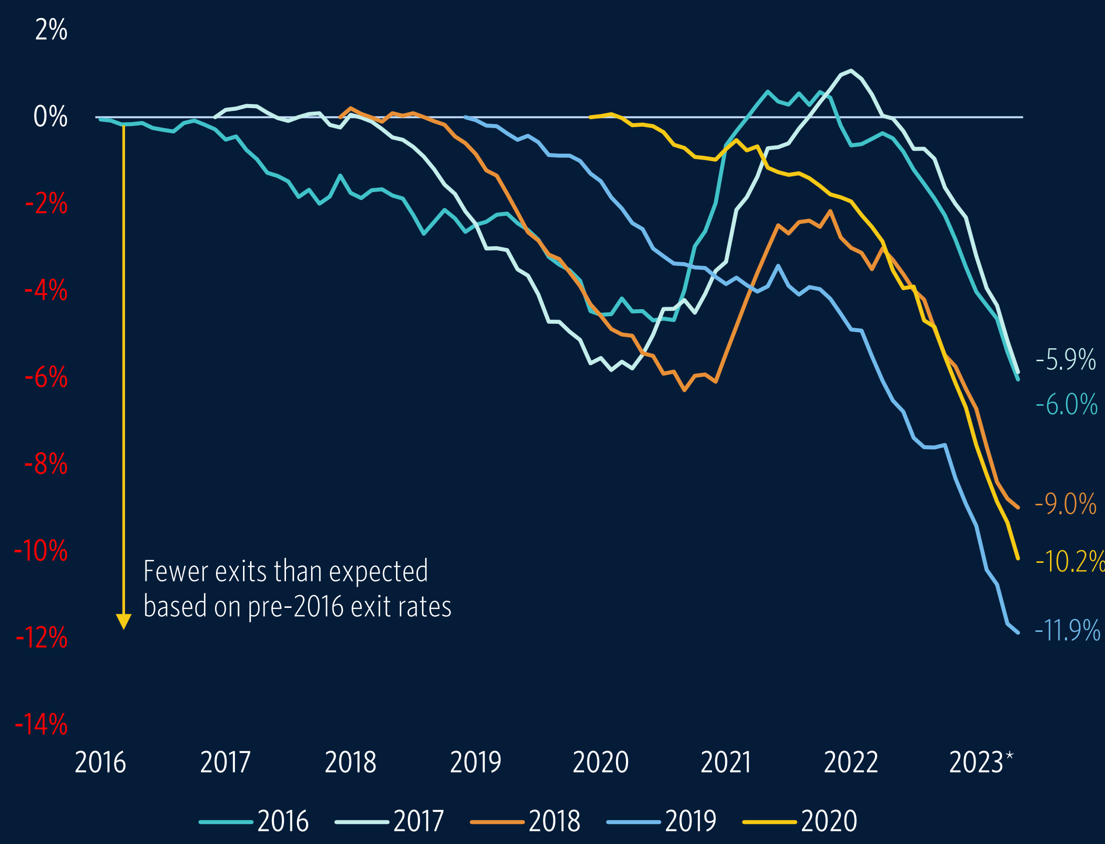
*As of May 31, 2023

We analyzed the empirical cumulative distribution of exit times for all buyout deals completed prior to 2016 in order to compare it to more recent deals that are being impacted by the current exit slowdown. Buyout-backed company cohorts were formed by age based on their deal year.

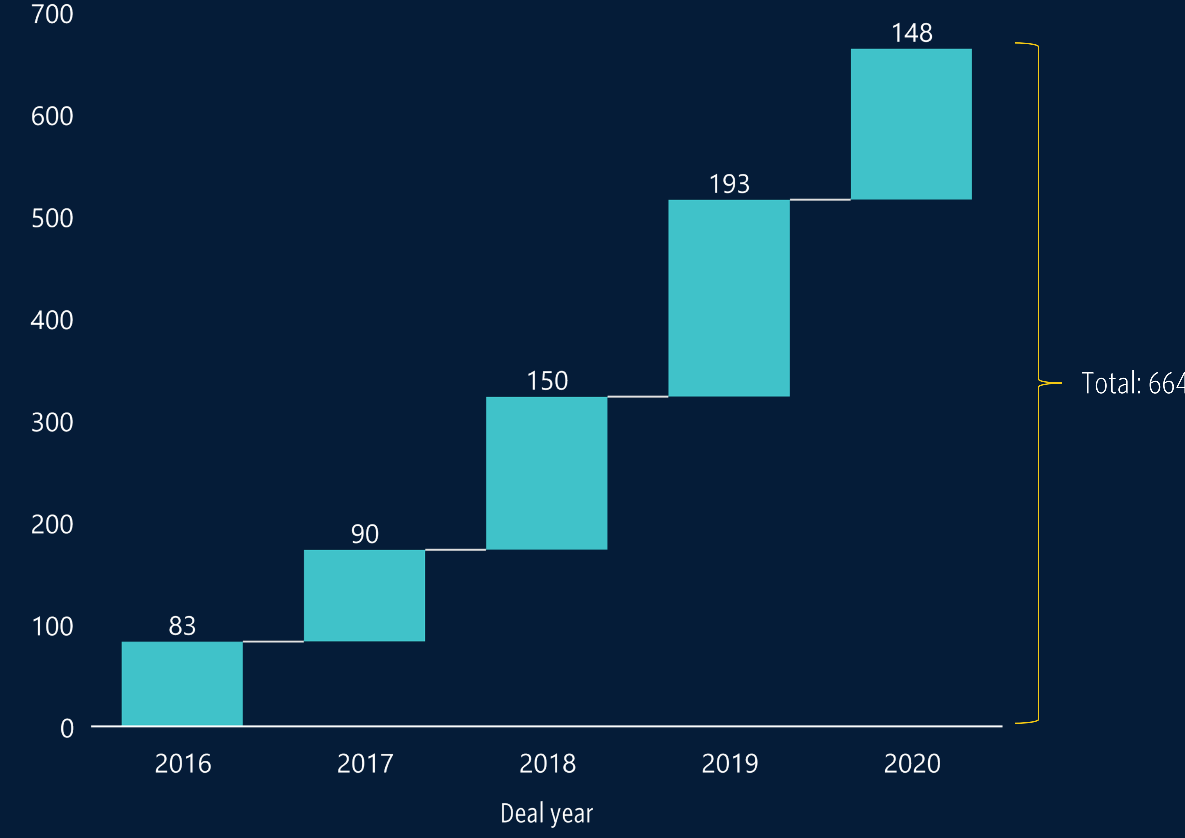
The exit rates of all cohorts have fallen behind the pre-2016 curve, especially for companies that have been buyout-backed for three to five years. For example, only 22% of companies that were acquired via LBO in 2019 have been sold or gone public compared with the pre-2016 expectation of 34%.

After recovering from the exit slowdown brought on by the COVID-19 pandemic, exit rates have plunged, leading to a buildup in the exit backlog.

Buyout-backed company exit rates by deal year relative to pre-2016 benchmark



Estimated buyout-backed company exit backlog by deal year*

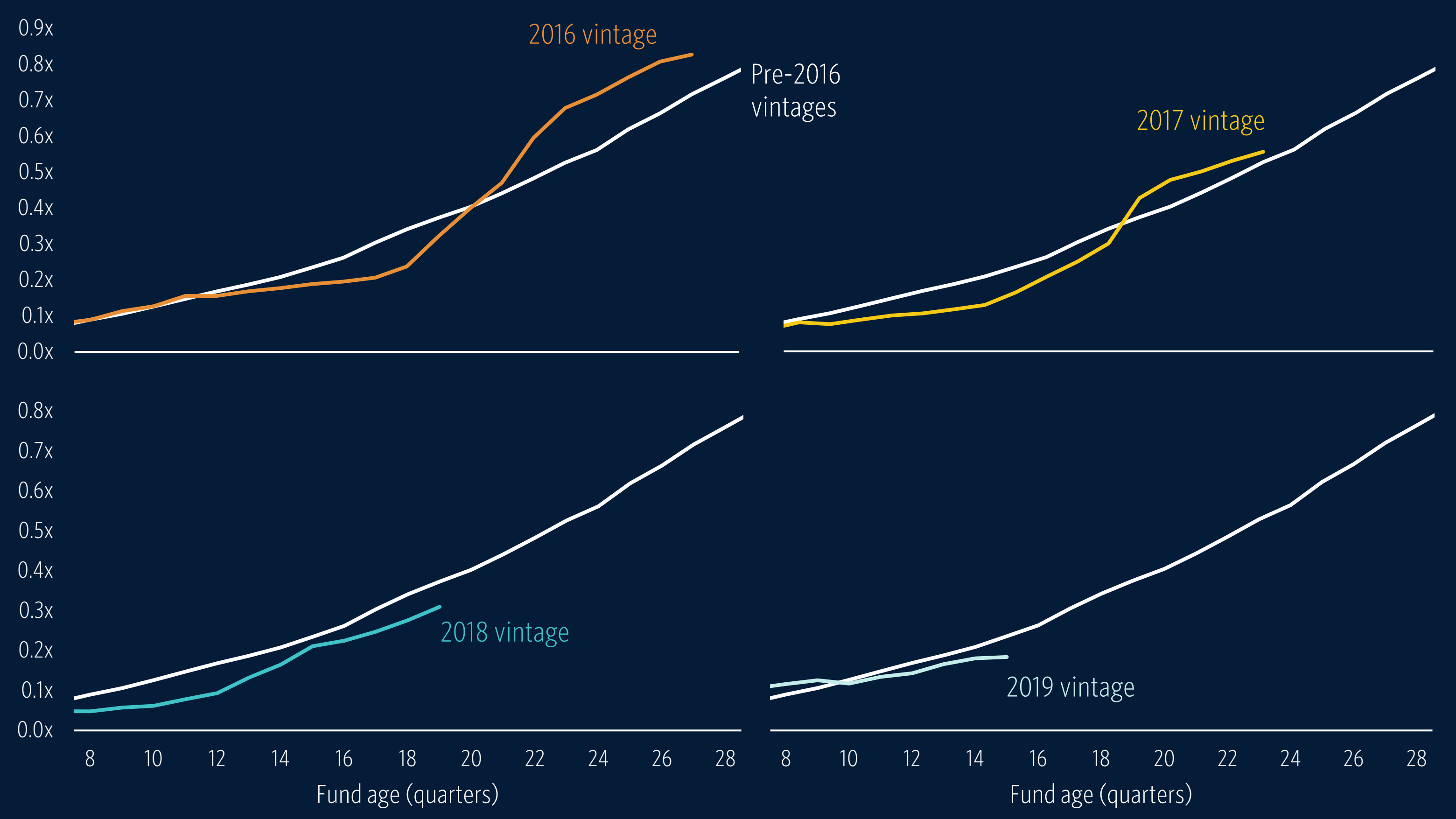


Source: PitchBook | Geography: US

*As of May 31, 2023

Slower exit rates have reduced the pace of fund distributions in recent vintages relative to pre-2016 averages.

Buyout fund DPI for select vintages versus pre-2016 average indexed by fund age*



Source: PitchBook | Geography: US

*As of December 31, 2022

For fund vintages nearing their peak years of distributions, such as 2016 and 2017, DPI has flattened out back to the average after a period of strong recovery following the closure of the exit window during the brief COVID-19 recession. This recovery was fed both by the pent-up demand for exits during the 2020 closure, as well as the rapid economic expansion during that time.

Younger funds have been less impacted thus far, although DPI ratios for the 2018 and 2019 vintages are slightly below average. If the exit window remains closed for an extended period, fund durations will continue to be pushed out, which in turn will weigh on performance in terms of IRR.

Distribution duration is an important consideration for closed-end funds…

Annual distributions as a share of buyout fund size

30%
25%
20%
15%
10%
5%
0%
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Time (years)

Distribution duration
6
8
10
12

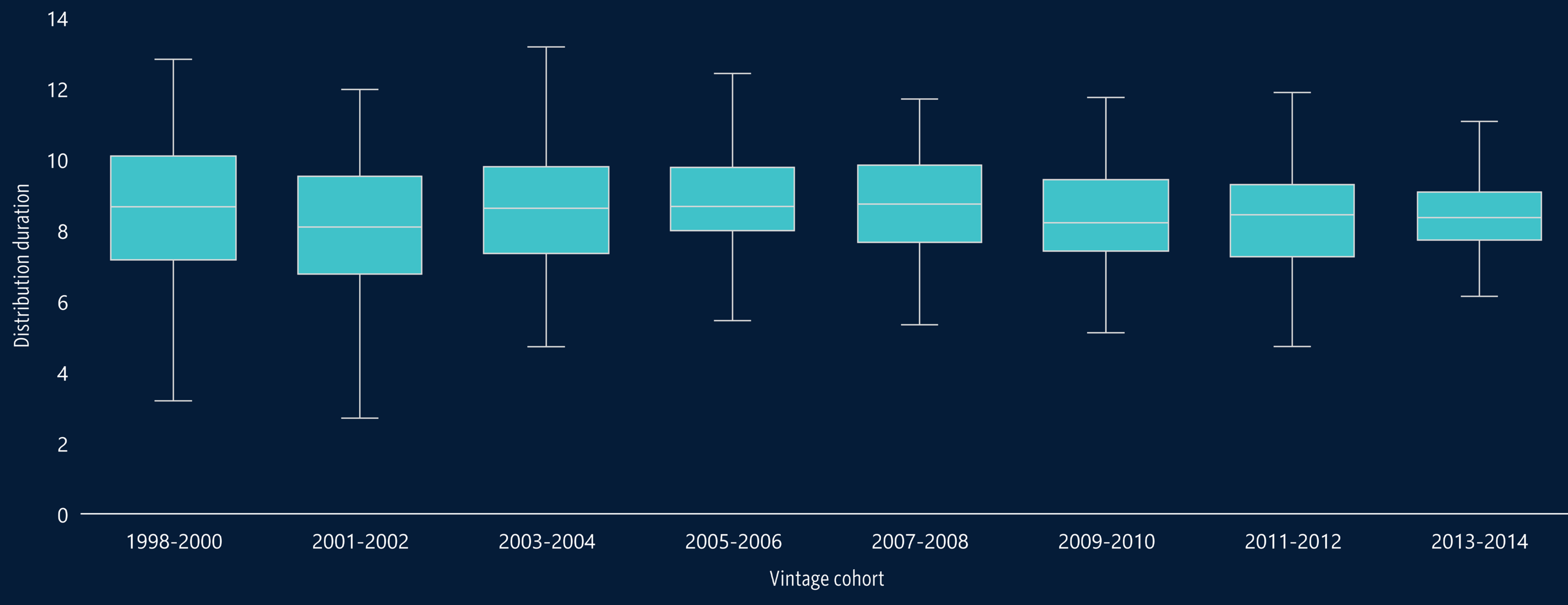
Source: PitchBook

Note: For illustrative purposes only. Assumes a final TVPI of 1.6x.

Distribution duration is a metric that quantifies the timing of fund cash flows by taking the average age of distributions, weighted by their size relative to total distributions. Because the weights are normalized by total distributions, this metric is unrelated to fund performance measures like DPI and TVPI. Buyout funds have typically had distribution durations range from seven to nine years.

…which can vary significantly across time periods and individual funds…

Dispersion of buyout fund distribution duration by vintage cohort*

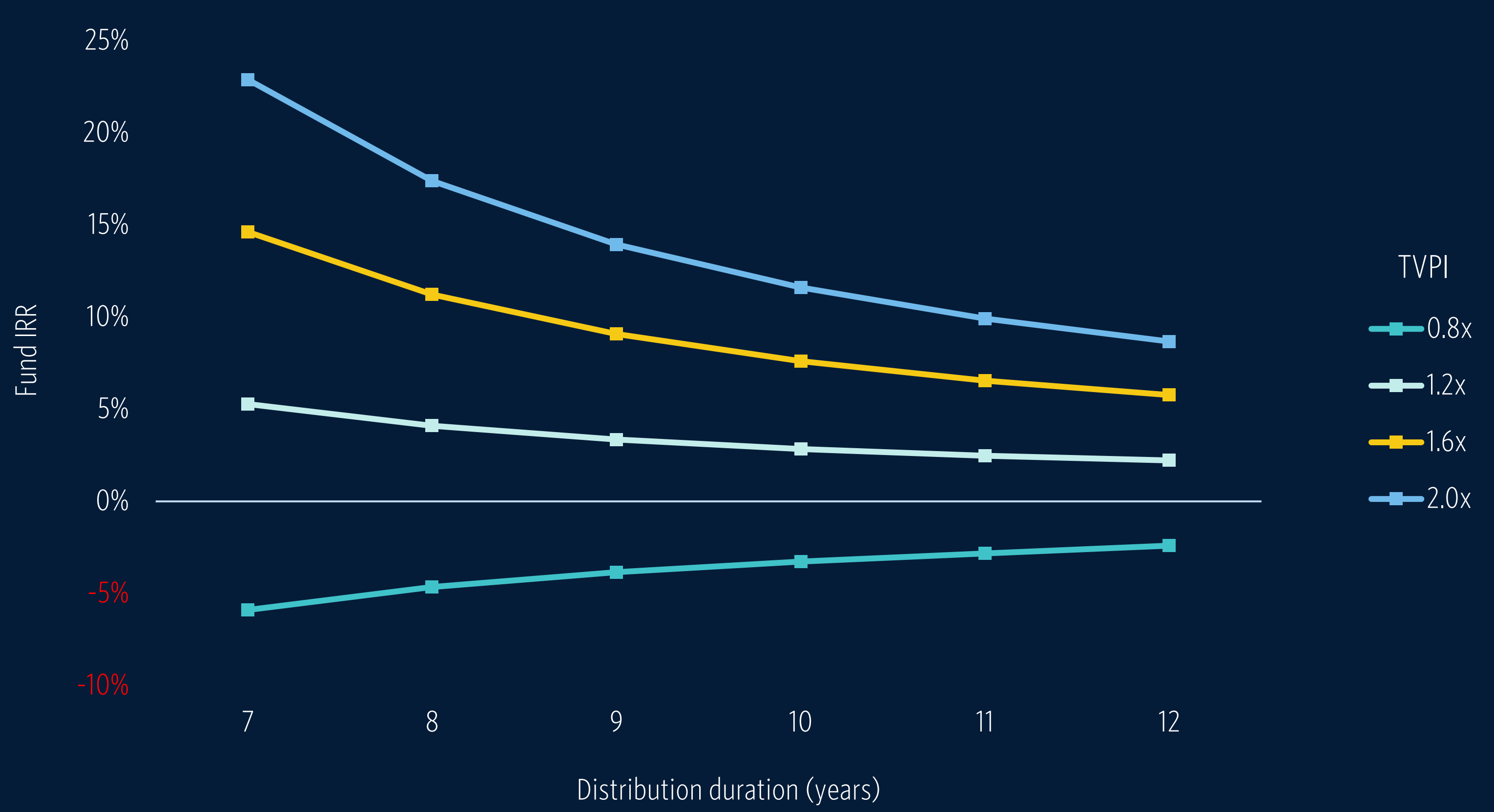


Source: PitchBook | Geography: US

*As of December 31, 2022

...and will mechanically impact IRRs, even when holding the TVPI constant.

Fund IRR by distribution duration and TVPI



Source: PitchBook

Note: For illustrative purposes only

Distribution duration has a significant impact on fund IRRs. For funds with a TVPI greater than 1, the higher the distribution duration, the lower the IRR will be. Additionally, this relationship becomes stronger as the TVPI increases.

In this hypothetical example, we calculated IRRs for a given distribution duration and TVPI using standard distribution paths from the Takahashi-Alexander cash flow model. If the slowdown in exits persists and distribution duration increases for the average fund, we show that performance will suffer even if TVPIs eventually recover.

Additional research

Market updates

Q4 2022 Quantitative Perspectives: When the Tide Goes Out

Download the report here

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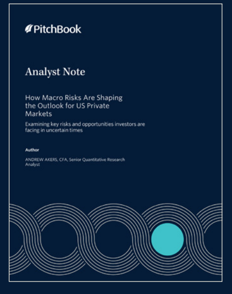
Download the report here



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