CARLYLE

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2023 GLOBAL INVESTOR CONFERENCE

Remembrance of Things Past

EXECUTIVE SUMMARY

→ Debate over the past year about whether the economy was likely to endure a “hard” or “soft landing” has distracted attention from the upward repricing of capital and its implications for asset prices, credit flows, and capital market activity.

→ Though declining inflation has largely eliminated the need for additional rate hikes, it seems unlikely that rates will soon revert to levels that persisted in the post-GFC era due to lags in policy transmission, large fiscal deficits, and ambitious capital spending plans tied to energy transition and reindustrialization.

→ The balance of power in capital markets has swung decisively in favor of liquidity providers, who are likely to encounter extraordinary opportunities in the coming years as companies look to refinance liabilities and dispose of noncore assets to raise funds without adding to debt levels.

REMEMBRANCE OF THINGS PAST

The more complex the situation, the more we resort to idiom or metaphor to understand it. This tendency has been especially evident over the past year. Pervasive uncertainty regarding the likely path for the economy, asset prices, and capital markets activity yielded a facile debate about whether we were in for a "hard" or a "soft landing." This metaphoric reduction seems unfortunate, not just because "hard" or "soft" is in the eye of the beholder, but also because "landing" connotes finality, the end to a journey with a fixed destination.

As time has elapsed, the complexities of the current moment have become harder to ignore. The question facing investors today is not simply whether the economy must endure a recession before inflation and interest rates inevitably return to prior levels, but whether those prior levels are still realistic endpoints, and what that portends for assets priced to the expectation that base rates would remain low indefinitely.

In the decade following the Global Financial Crisis (GFC), a number of investors spotted "bubbles" that weren't there.[1] Asset prices rationally adjusted to low real interest rates, as did investment styles and capital markets activity. We may be living through the mirror image of that experience today, as capital seems to have repriced upward to an extent that could prove disorienting to those with expectations anchored in the recent past.

INFLATION'S RISE AND FALL

After the recessions of the 1960s and 1970s, U.S. payroll employment returned to prior peaks within 20 months. Since then, labor market recoveries had taken progressively longer: 32 months in the early 1990s, 49 months following the dot-com crash, and 76 months following the GFC. Policymakers understandably wished to avoid a continuation of this trend,[2] and injected trillions of dollars of central bank-funded fiscal stimulus to accelerate the economy's convergence back to full employment by two full years relative to baseline forecasts (Figure 1).

Figure 1.
Stimulus Successfully Shortened Convergence to Full Employment

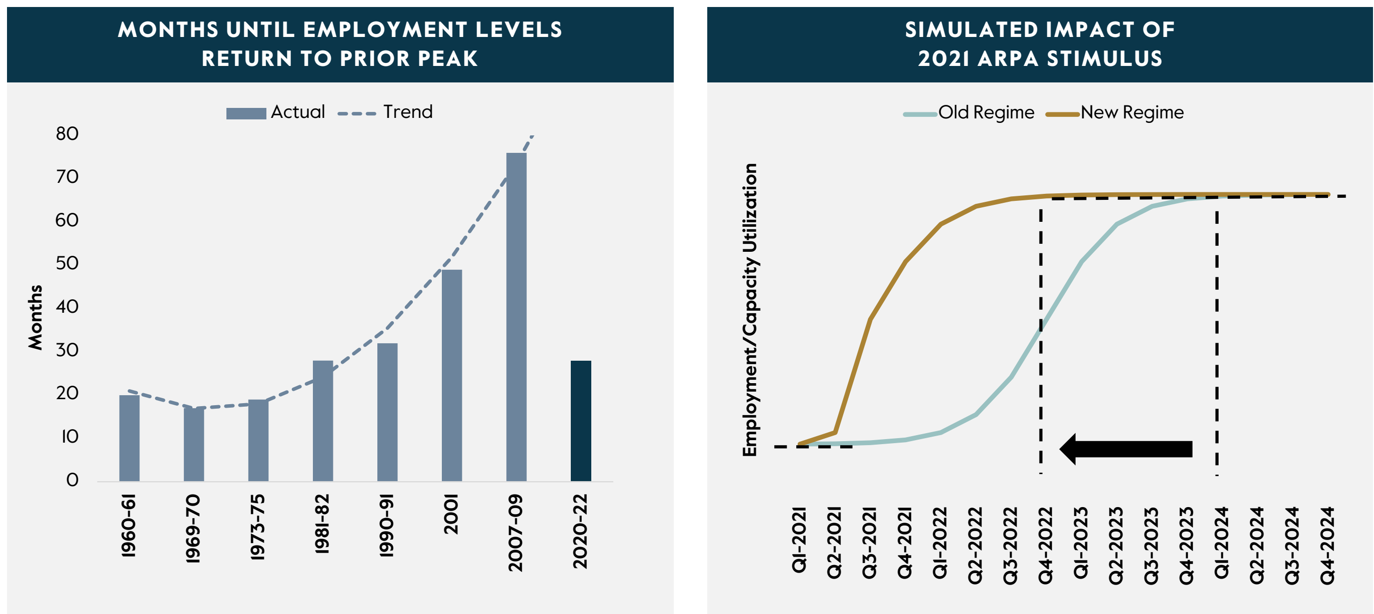


Figure 1. Source: Carlyle Analysis of 2023 IMF WEO Database, FRED, July 2023. There is no guarantee any trends will continue.

1. C.f. "There Are Two Bubbles That Can Bite Us," Julian Robertson at Bloomberg Market's Most Influential Summit, September 2014.
2. In addition to obvious human and social costs, extended periods of joblessness had also given rise to unwelcome political developments and personalities.

"Helicopter money" worked. The economy added back lost jobs at the fastest rate in over forty years. But stimulating demand to this extent proved cavalier. Lockdowns, conservative management, and finite logistics capacity kept production from scaling up to match it, leading to a massive supply-demand gap in durable goods and chronic shortages of necessary components, parts, chemicals, semiconductors, and other inputs (Figure 2). Their prices rose at a startling clip, a development exacerbated by management teams' sudden eagerness to push aggressively on the prices of downstream products.

Now that capacity has been rebuilt, fiscal stimulus has been withdrawn, and households have already purchased all of the hot tubs, furniture, motorcycles, and air fryers they're likely to need for the next few years,[3] subsequent rounds of broad-based price increases have proved untenable (Figure 3, page 5). The economy continued to grow during this disinflationary process because household spending gravitated towards "experiences" – travel, tourism, movies, and concerts. And this combination of falling inflation and persistent growth seems to be what many people had in mind when they spoke of a "soft landing." But where, exactly, have we landed?

NO VICTORY LAP

If one were to ignore this recent history and start their analysis today, they'd see an economy operating at (or above) capacity, with a core inflation rate of 4%, a U.S. fiscal deficit larger than any that's preceded it on a cyclically-adjusted basis, and a fixed investment boom in the U.S. (also underway in Europe) to combat climate change and achieve self-sufficiency in strategic sectors like semiconductors and green industry. This is not a constellation of factors that suggests low short-term interest rates are likely to return any time soon.

Indeed, this was Chair Powell's message at the annual Jackson Hole symposium. There, he reiterated the Fed's commitment to a 2% inflation target and their belief that total spending in the economy remains too high relative to levels consistent with it (Figure 4, page 5).

Figure 2.
Supply Failed to Adjust Upward to Match Surge in Demand

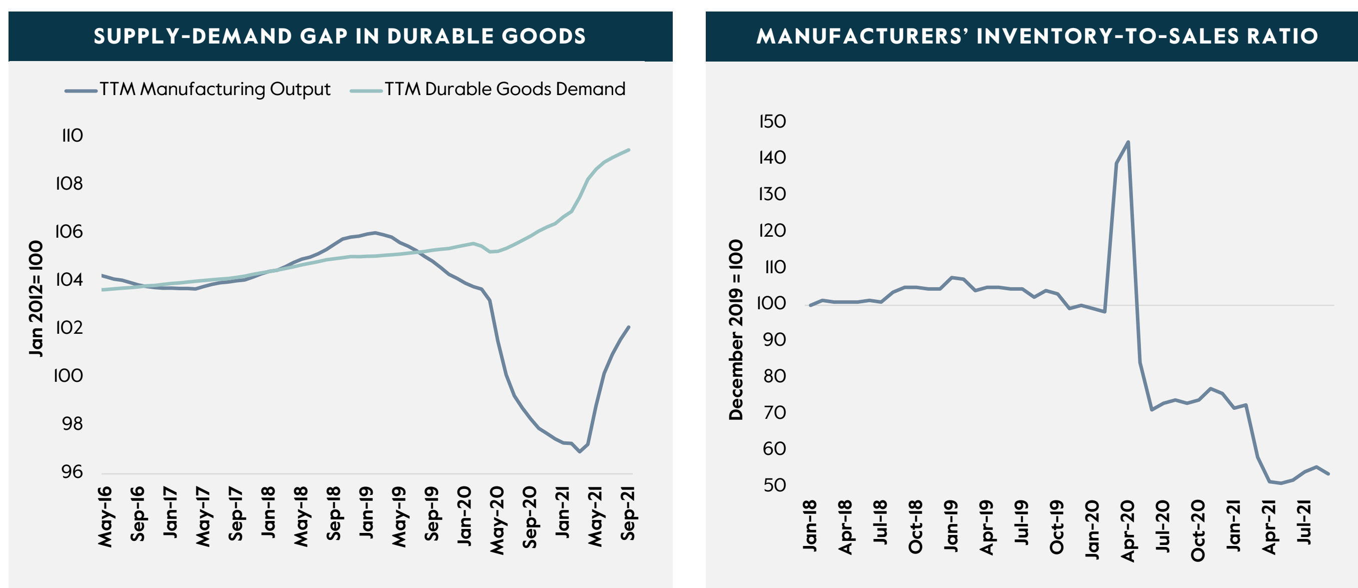


Figure 2. Source: Carlyle Analysis of portfolio company data; Federal Reserve Board of Governors, Bureau of Economic Analysis.
3. Thomas, J. "Reopening is Inflation's Cure, Not it's Cause," Wall Street Journal, May 2021.

Figure 3.
End of Inflationary Spiral

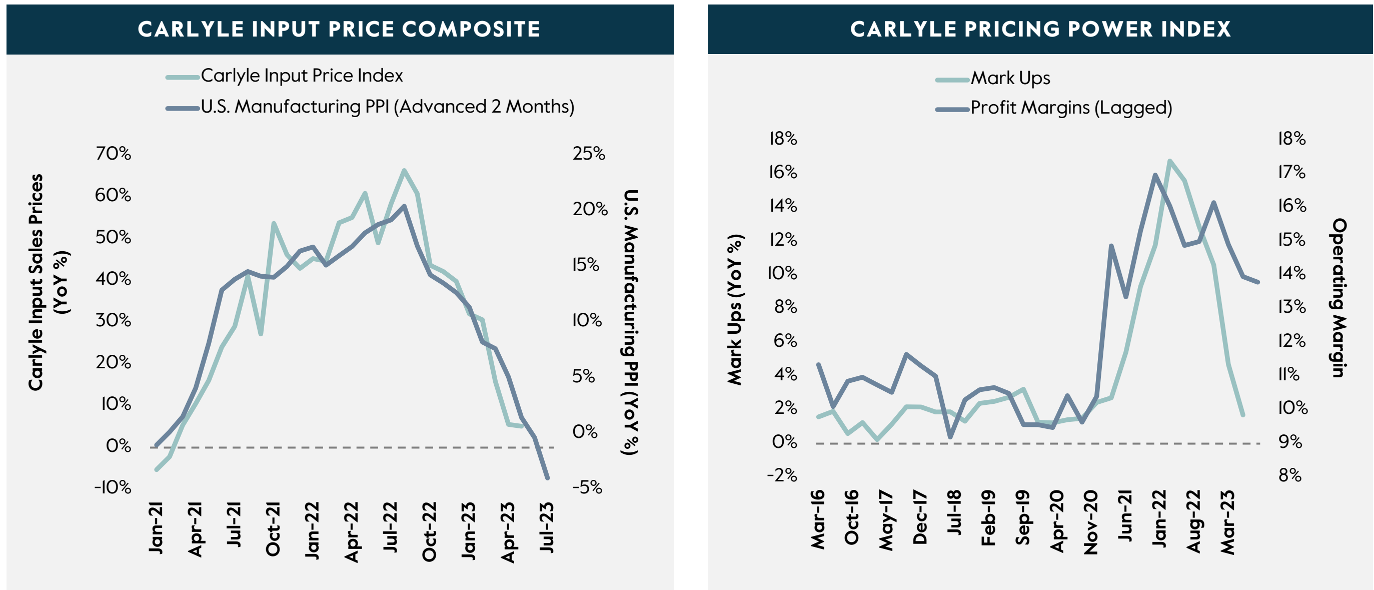


Figure 4.
Spending Continues to Grow with Shift to "Experiences"

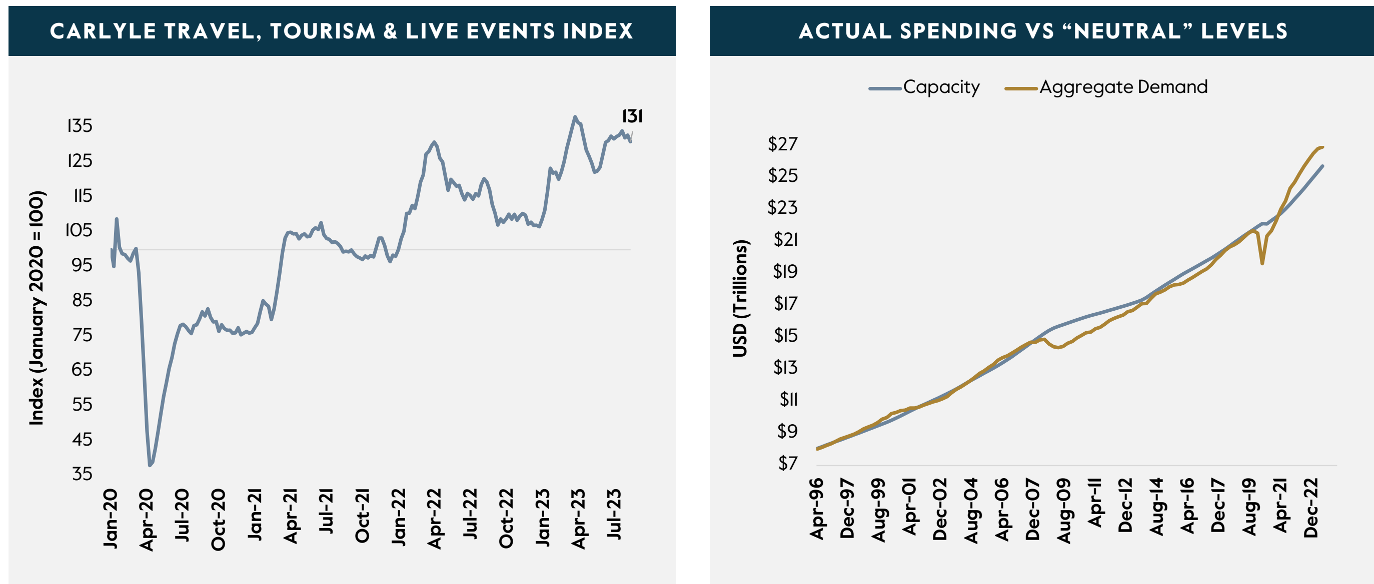


Figure 3. Source: Carlyle Analysis of Portfolio Company Data, BLS, July 2023. There is no guarantee any trends will continue.
Figure 4. Source: Carlyle Analysis of Portfolio Company Data. Federal Reserve Data, Mercatus Center, July 2023.

As Powell explained, policy rates will likely need to remain near current levels for a longer period to account for lags in policy transmission.

If all debt repriced overnight, cash flows would respond instantaneously to changes in Fed policy. But very little of it does. Nowhere are these "lags" more evident than household finance. Only 11% of U.S. households' liabilities are floating rate; the bulk consists of mortgages whose rates are typically fixed for 30 years. Fed policy pushed the cost of *new* mortgages from 2.75% to 7.25%, but the average effective rate paid on the outstanding stock remains just 3.6% (Figure 5). And the sharp decline in mortgage origination volumes and inventories of existing homes for sale suggests households have little appetite to reprice this debt any time soon.[4]

Public finances have also yet to adjust to the rate shock. Treasury debt service costs have risen with the increase in T-bill yields, but rate hikes have not yet forced deficit reduction because the outstanding Treasury stock reprices in six years, on average, and carries an effective interest rate of just 3.1%.[5] A full employment economy should yield high tax receipts, low transfer payments, and small deficits. Instead, the U.S. federal government currently collects $1.5 trillion, or 6% of GDP, less in taxes than it spends annually, which means that the private sector's after-tax disposable income is about $1.1 trillion higher than one would expect given the state of the economy even when excluding the effects of higher T-bill yields (Figure 6, page 7).[6]

Figure 5.
Lagged Monetary Transmission to Household Finance

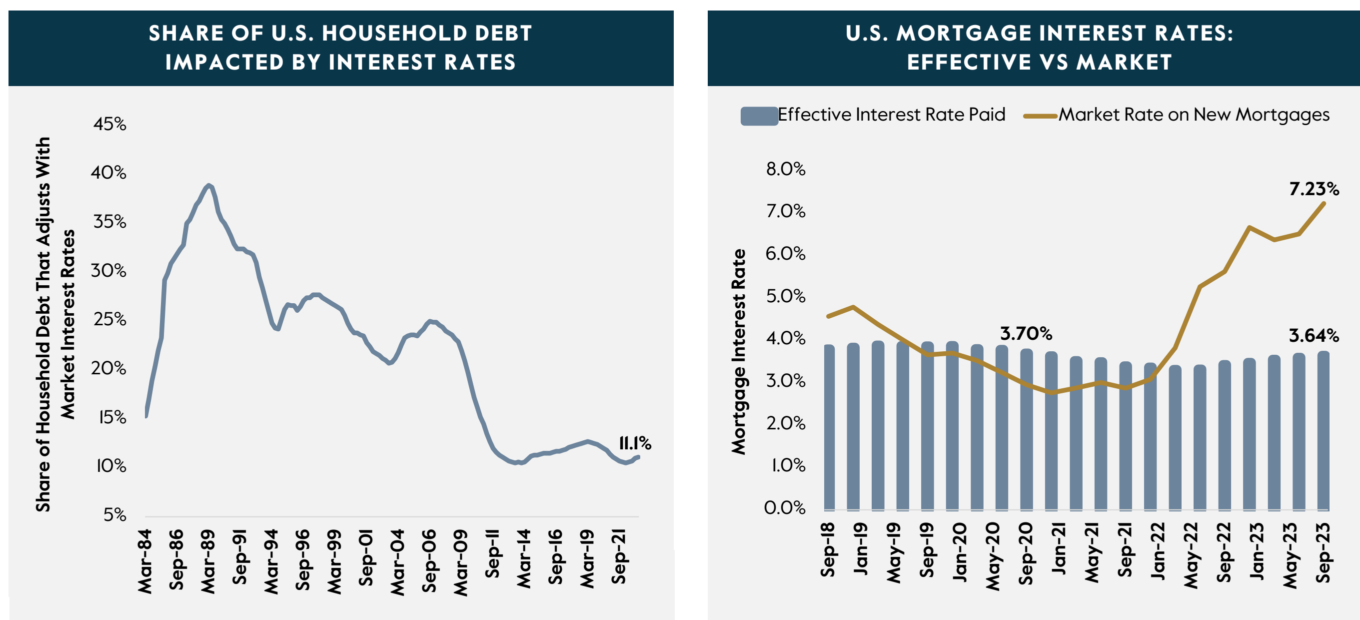


Figure 5. Source: Carlyle Analysis of Federal Reserve Data. Moody's, July 2023.
4. For-sale inventories are down 45% from 2019 levels and by over 50% from averages over the prior decade. Bloomberg, August 2023.
5. Carlyle Analysis of CBO data, August 2023.
6. Carlyle Analysis of CBO data, August 2023. At current unemployment rates, the deficit should be about 0.8% of GDP based on the past 70 years of data.

Figure 6.
Largest Cyclically-Adjusted Debt & Deficits in History

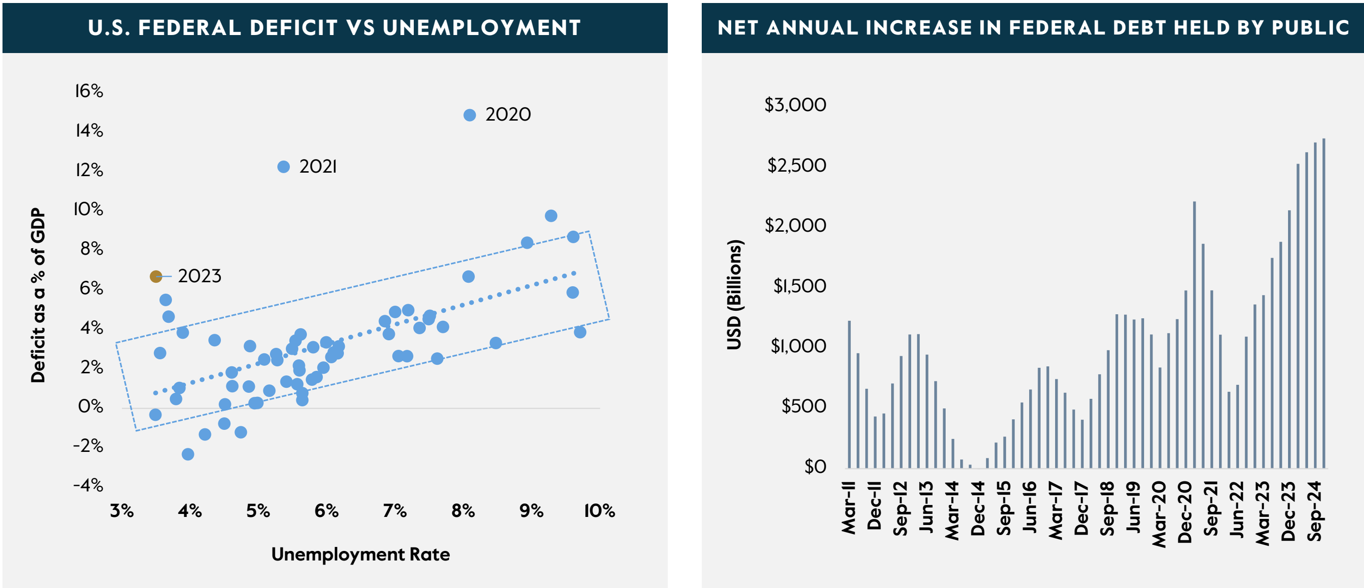


Figure 6. Source: Carlyle Analysis; Federal Reserve Data, Bloomberg, September 2023. There is no guarantee any trends will continue.

CLIMATE, INDUSTRIAL POLICY & HOUSING

Large fiscal deficits not only augment private sector spending, but also place upward pressure on real interest rates by consuming a larger share of economy-wide savings. This is exacerbated today by "quantitative tightening," which increases the stock of debt held by the public by an incremental $1 trillion annually (Figure 6, page 7). When fixed investment (purchases of new property, plant, equipment, and intellectual property) is low, or private sector savings (income not consumed) is high, this doesn't much matter, as Japan has amply demonstrated for the past 25 years. But today's large deficits coexist alongside ambitious capital spending plans.

It is difficult to overstate the potential expense of the energy transition, which requires massive investment in clean energy technologies, grids, storage, charging infrastructure, mining, and the recapitalization and restructuring of entire industries. For too long, energy transition has been synonymous with "divestment" from carbon energy, which imprudently depressed capacity in the sector, increased energy price volatility, and introduced economic vulnerabilities. The International Energy Agency (IEA) believes that $4 trillion will be required annually by 2030 to meet net zero targets – a doubling of the pool of global savings consumed by total energy investment, even after accounting for the resulting increase in global GDP.[7] Tax credits and incentives in the Inflation Reduction Act (IRA) of $600 billion are expected to spur $3 trillion in U.S. green industry investment.[8] And total investment in Europe could prove to be much larger, as the EU and member state governments embark on an even more ambitious plan to decouple from Russian energy and rethink economic models.

The climate spending arrives amidst a boom in private manufacturing investment (Figure 7), spurred by fragilities revealed during the pandemic and the resurgence of

Figure 7.
Industrial Investment Boom

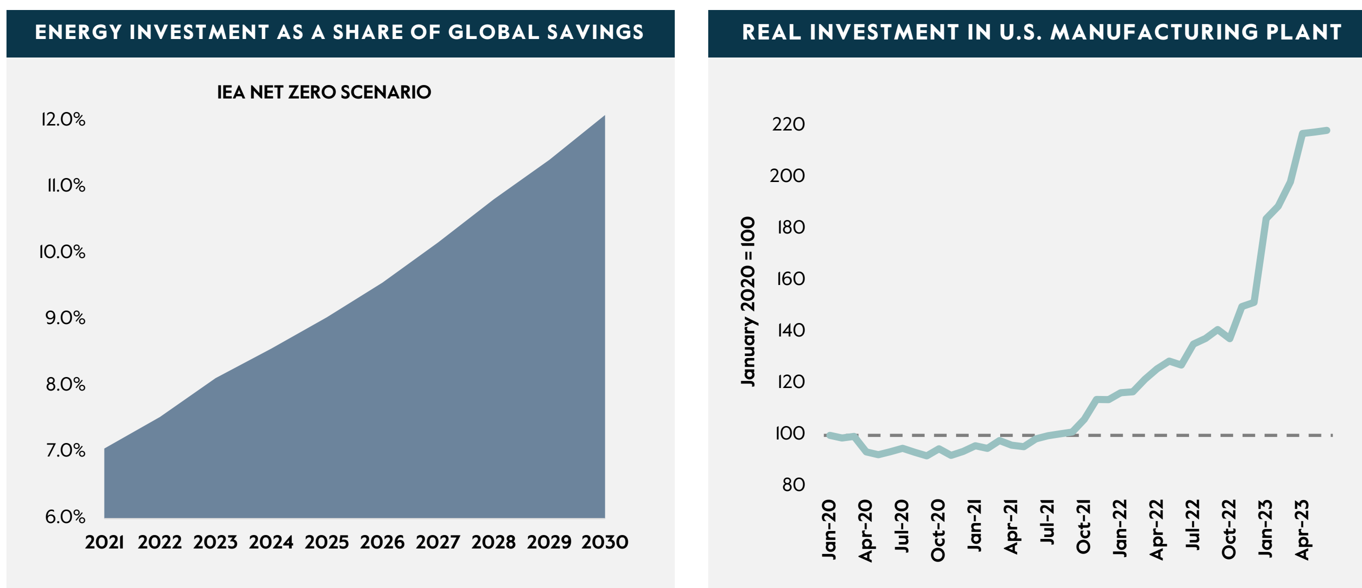


Figure 7. Source: Carlyle Analysis of IEA Net Zero, 2023 IMF WEO Database, FRED, July 2023..

7. Carlyle Analysis, IMF WEO Database, International Energy Agency. The analysis assumes that global GDP growth accelerates by 0.4% per year due to the increased investment.
8. "US Inflation Reduction Act 'to spur $3 trillion investment in renewable energy tech,'" Goldman Sachs, April 2023.

industrial policy. Management teams had spent much of the past two decades outsourcing production processes to focus on higher value-added activities, like product design and development, advanced research, branding, and after-sale services. But when shortages and lost sales manifested themselves in 2021-22, the perils of "asset light" strategies premised on "just-in-time" logistics became apparent. More warehouses, redundancies, and productive capacity are needed. The pandemic also sensitized policymakers to the risks associated with dependence on foreign-sourced critical inputs like semiconductors and batteries, leading to significant subsidies for domestic investment.

The explosive growth in rents since 2020 has revealed the scale of underinvestment in the U.S. housing stock. While the 2007-11 collapse in residential investment was a natural response to the housing bubble that preceded it, housing investment since then has lagged household formation and depreciation rates. Underproduction has resulted in a shortfall of 2 to 4 million housing units, which will cause housing to consume a larger share of incomes in the absence of substantial increase in residential investment.

And to this, one must add defense procurement needs revealed by Russia's invasion of Ukraine, particularly the rebuilding of industrial capacity in Europe and North America necessary to produce stocks of tanks, artillery batteries, munitions, and more advanced weaponry.

Taken together, capital formation seems likely to grow substantially faster than in the years following the GFC, when savings increased 24% more than investment and the U.S. capital stock declined by 12% relative to prior trends (Figure 8). When fundamentals shift decisively, why would anyone expect interest rates to revert to the low levels that prevailed during that bygone era? The real interest rate is simply the price that clears savings-investment markets; if investment demand (i.e., borrowing) rises relative to desired savings (i.e., lending), so

Figure 8.
Factors Driving Post-GFC Decline in Real Interest Rates

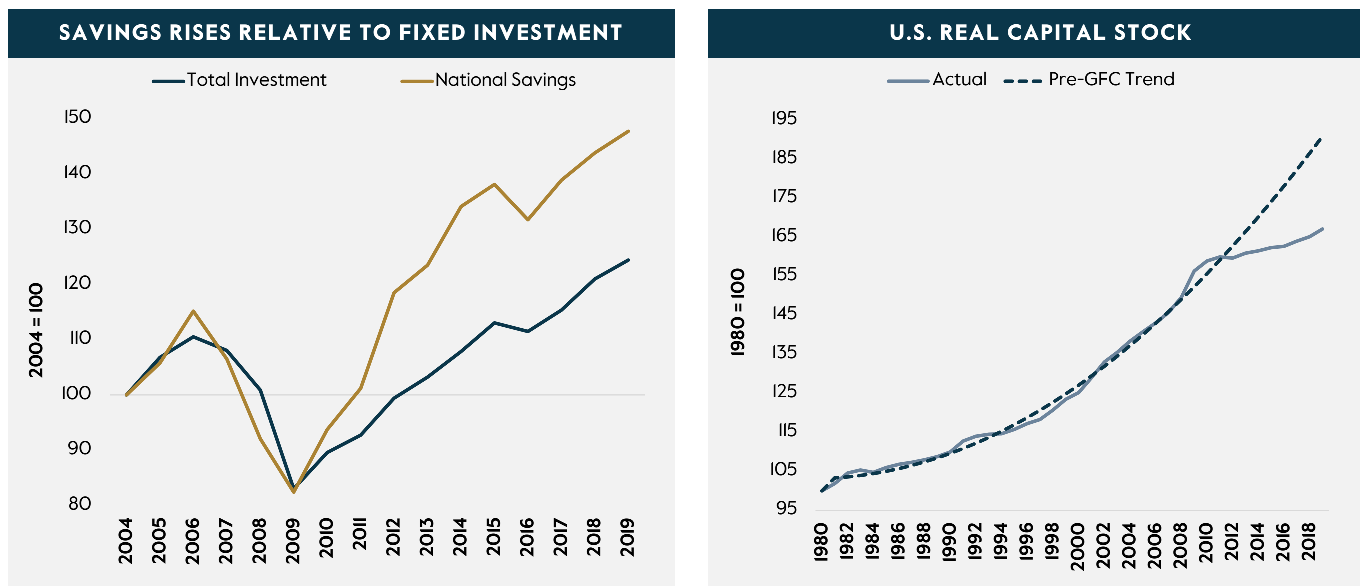


Figure 8. Source: Carlyle Analysis of 2023 IMF WEO Database, FRED, July 2023. There is no guarantee any trends will continue.

too will the market-clearing price of capital (Figure 9). Central banks cannot set a financial rate of interest that departs meaningfully from this equilibrium rate without introducing the risk of protracted bouts of inflation.

"BID-ASK SPREADS" AND REPRICED CAPITAL

Practitioners often attribute the decline in M&A activity over the past 18 months to the "bid-ask spread" separating the price expectations of buyers and sellers. This spread is but the manifestation of buyers' higher cost of capital and sellers' unwillingness to accede to it. And why should they? Assets that transact do so at valuations comparable to those of 2021, stock markets have rebounded sharply since October 2022, and most debt matures after 2024 when professional forecasters anticipate financing conditions will prove more favorable than today.

But waiting has its costs, a phenomenon options traders call "theta burn" or time decay.

While the interest rate shock has yet to affect the household sector, it's had a pronounced impact on (unhedged) floating-rate corporate borrowers. Aggregated data from public Business Development Companies indicate that trailing twelve-month interest coverage ratios (ICRs) among their borrowers have declined from 2.25x a year ago to just 1.6x as of June 30, 2023, on average. And this was with a base rate ofjust 3.96%. If one were to keep Ebitda constant and pro forma adjust interest expense at current base rates of roughly 5.4%, average ICR declines to just 1.2x. This means that interest went from consuming just 44% of borrowers' operating cash in the twelve months ending June 2022 to 63% in the most recent 12-month period, and 83% over the next 12 months if base rates and operating earnings remain unchanged.

Figure 9.

Greater Demand for Capital Will Increase Real Rates

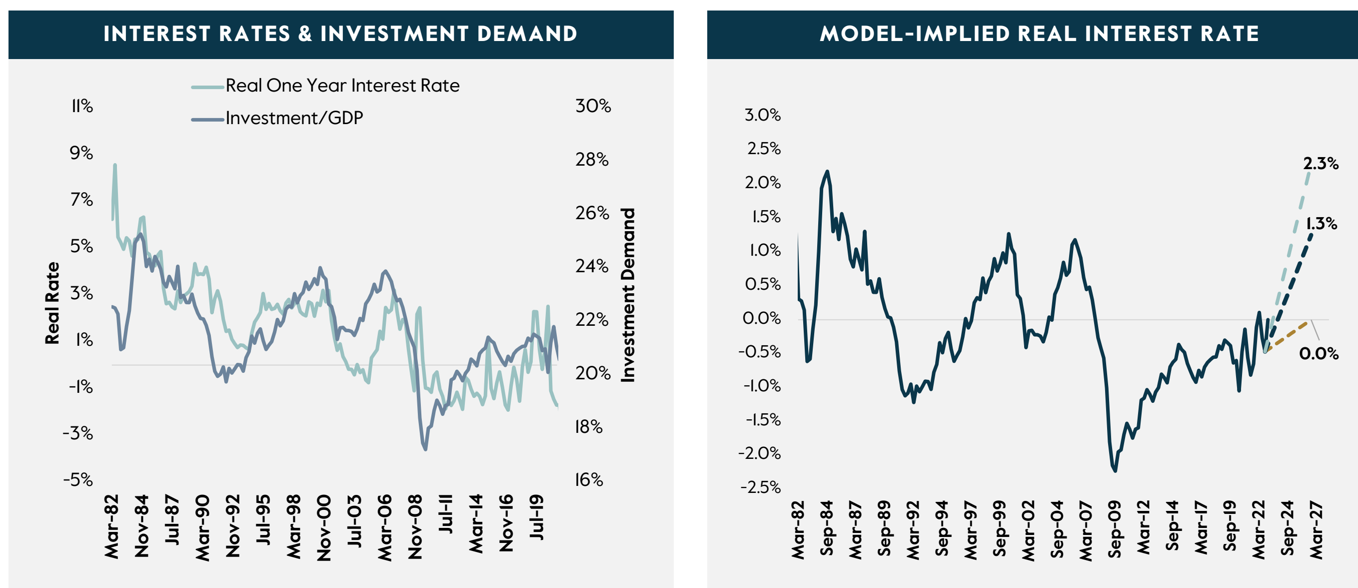


Figure 9. Source: Carlyle Analysis of 2023 IMF WEO Database, FRED, July 2023. There is no guarantee any trends will continue.

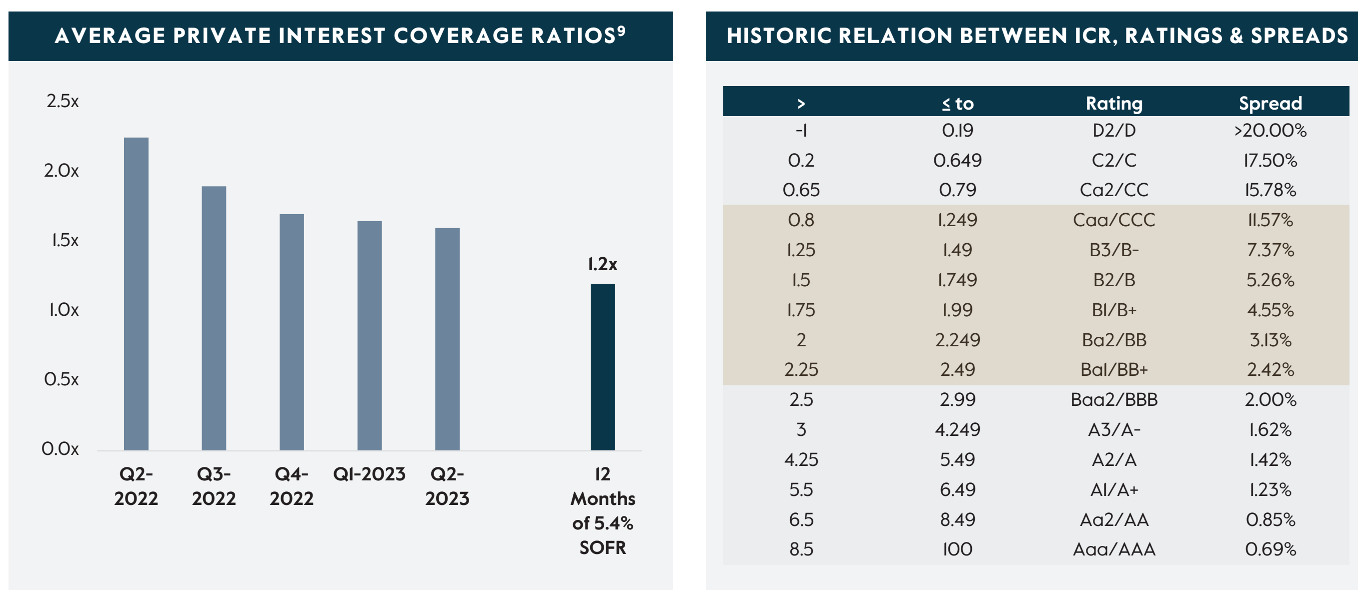
Consider what this means for credit quality. Based on historic data from rated bond yields, an ICR of 2.25x would be consistent with a BB credit; relatively low risk and commensurate with a spread of just 250 to 325bps. But an ICR of 1.2x would be on the cusp of a CCC rating and require a spread of over 1,000bps to compensate for potential losses. Effectively, unhedged borrowers initially charged 7.5% interest rates in 2020-21 pay 12% at current base rates, but these higher rates consume so much operating cash that a lender extending credit today would charge 15% to 17% (Figure 10).

This example is illustrative of the broader repricing of capital. The decline in exits and capital deployment has been more pronounced in venture and growth capital than buyouts (Figure 11, page 12), as the shift in savings-investment relations has introduced painful constraints where profitability had been trivialized by the expectation that operating losses could always be covered through fresh capital injections. It is not "borrowing" that's become more expensive, but all sources of external funding, with especially painful implications for investment strategies predicated on "quick flips" and companies whose revenues are insufficient to cover operating budgets (Figure 12, page 12).

Great companies will generate the earnings growth necessary to delever and validate high current valuations. Others will find that the risk of cash shortfalls concentrates the minds of management teams in ways that ultimately result in healthier companies and better long-run performance. But many more may need to refinance into more equitized capital structures to raise ICRs to more comfortable levels and allow more operating cash to be reinvested in the business.

Figure 10.

Interest Consumes Unusually Large Share of Operating Cash



>	≤ to	Rating	Spread
-1	0.19	D2/D	>20.00%
0.2	0.649	C2/C	17.50%
0.65	0.79	Ca2/CC	15.78%
0.8	1.249	Caa/CCC	11.57%
1.25	1.49	B3/B-	7.37%
1.5	1.749	B2/B	5.26%
1.75	1.99	B1/B+	4.55%
2	2.249	Ba2/BB	3.13%
2.25	2.49	Ba1/BB+	2.42%
2.5	2.99	Baa2/BBB	2.00%
3	4.249	A3/A-	1.62%
4.25	5.49	A2/A	1.42%
5.5	6.49	A1/A+	1.23%
6.5	8.49	Aa2/AA	0.85%
8.5	100	Aaa/AAA	0.69%

Figure 10. Source: Lincoln International. NYU Stern: Moody's and S&P Ratings Data. August 2023. There is no guarantee any trends will continue.

9. Carlyle Analysis. Lincoln International Data. Federal Reserve Board of Governors. August 2023.

Figure 11.
Decline in Capital Deployment & Exits

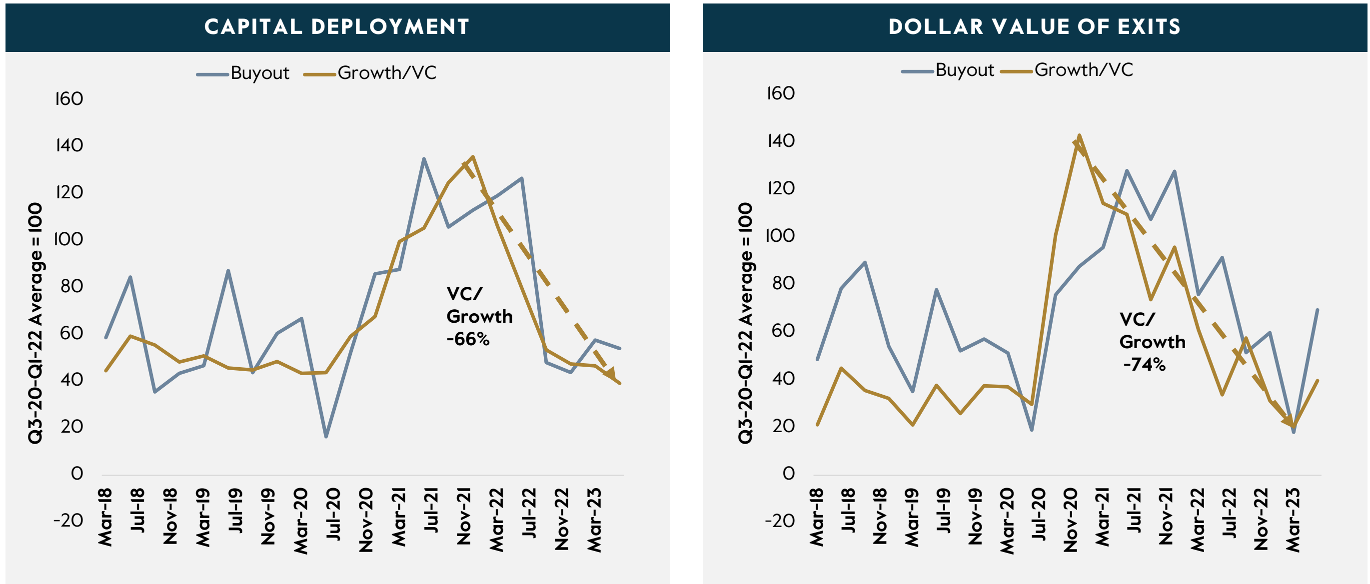


Figure 12.
"Momentum Trade" in Growth Investing

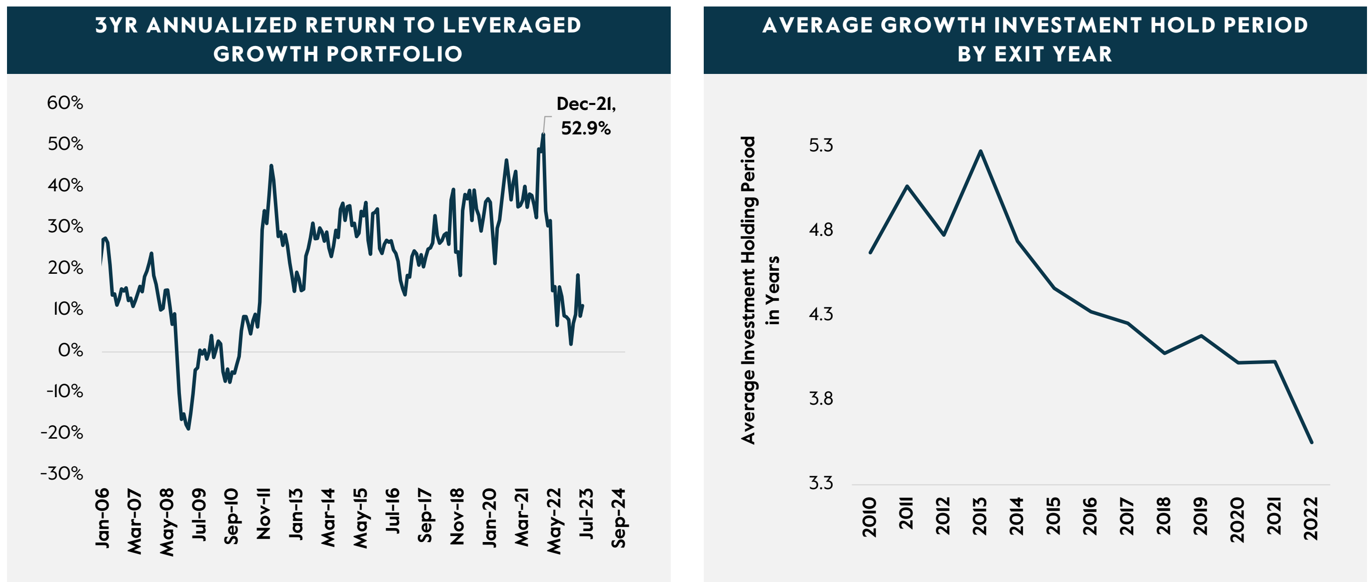


Figure 11. Source: Carlyle Analysis of Burgiss Data. August 2023. There is no guarantee any trends will continue.
Figure 12. Source: Carlyle Analysis of CRSP Data, 1.5x Returns to Highest Valuation, Fastest Growing 20% of Companies, July 2023.. There is no guarantee any trends will continue.

We may have witnessed the last Fed hike of this cycle, but it's anyone's guess how long rates remain near current levels. Professional forecasters expect short-term rates to decline to 3% over the next two years, but just as rates consistently fell below prior forecasts between 2010 and 2021, the reversal in savings-investment propensities may cause them to overshoot forecasts this time (Figure 13). And no one should expect sizeable cuts to arrive in an otherwise placid macro environment. Over the past 50 years, the Fed has only cut rates by 200bp or more in the context of recession or financial dislocation (Figure 14, page 14). Contractions in real activity not only depress earnings, but often result in an increase in risk aversion that widens spreads to an extent that offsets the decline in base rates.

EXTRAORDINARY CAPITAL DEPLOYMENT OPPORTUNITIES AWAIT

The repricing of capital has dramatically increased the value of spare liquidity and new capital commitments. By diminishing the value of free cash flow, easy money has left more companies in need of external finance at a time when its likely to prove very expensive (Figure 15, page 14). The result is likely to be a period of extraordinary capital deployment opportunities, as new money enters assets on more favorable terms, a cash crunch pushes more assets onto the market, and deal activity rebounds as market participants come to terms with the upward adjustment in the price of discretionary risk capital.[10]

Figure 13.
Actual Interest Rates Relative to Consensus Forecasts

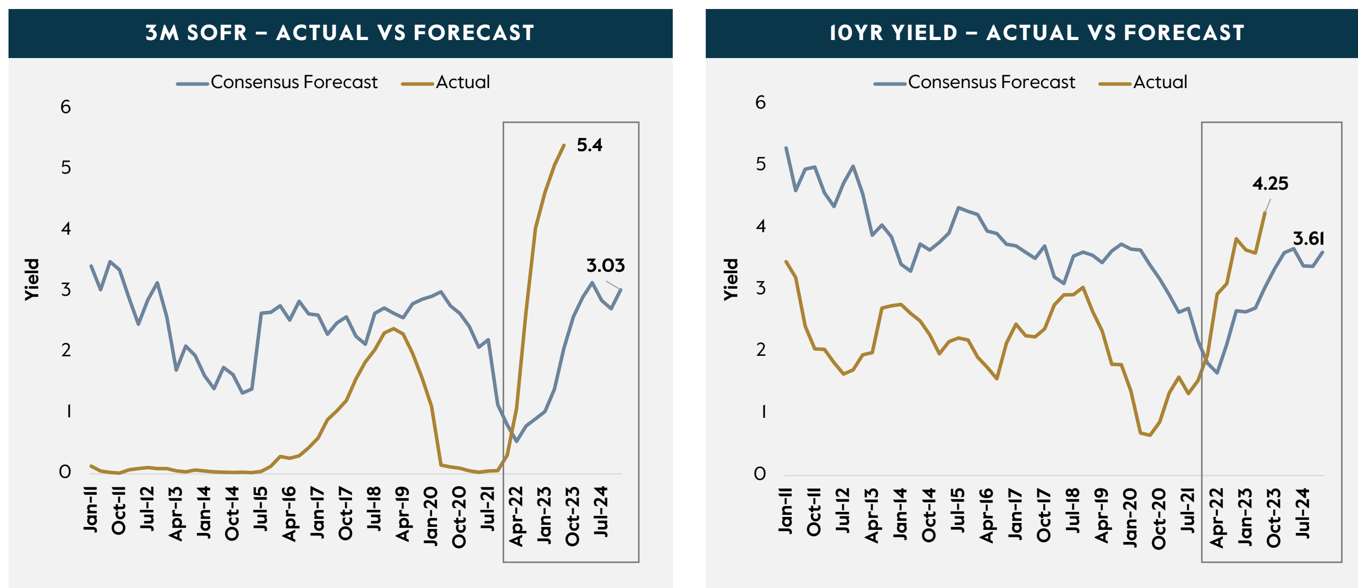


Figure 13. Source: Carlyle Analysis of Federal Reserve Survey of Professional Forecasters. August 2023. There is no guarantee any trends will continue.
10. Such opportunities are also likely to be apparent in secondary markets, ranging from traditional LP/GP-centered transactions to portfolio financings.

Figure 14.
Cyclical Variation in Interest Rates

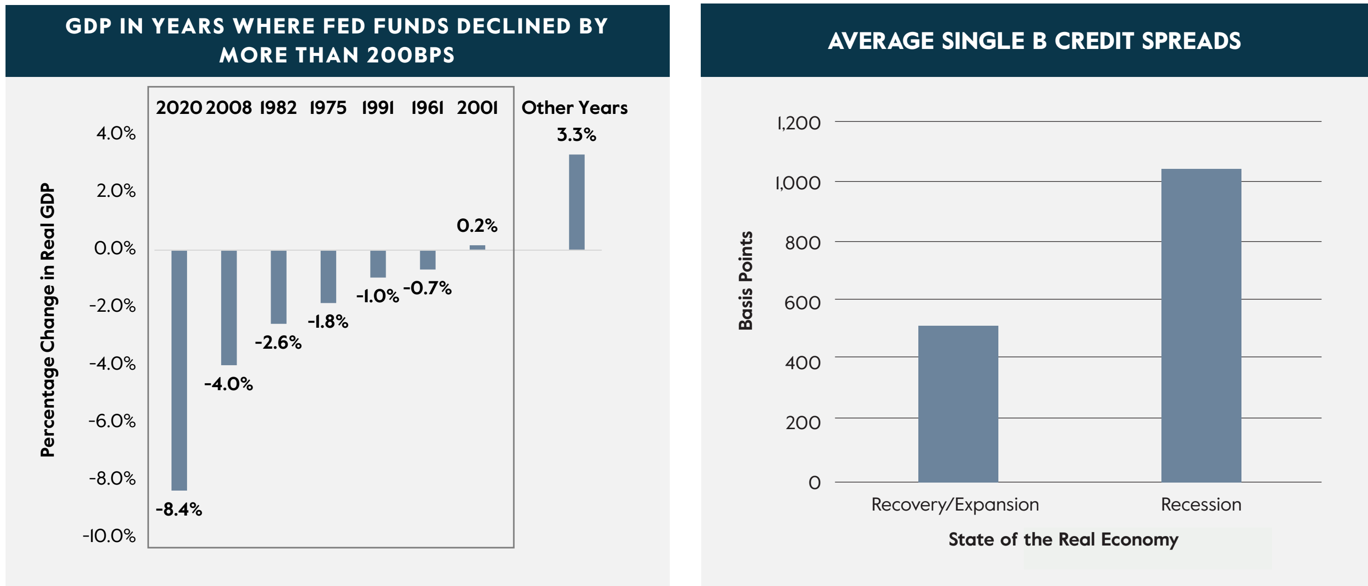


Figure 15.
Corporate Sector's External Financing Needs

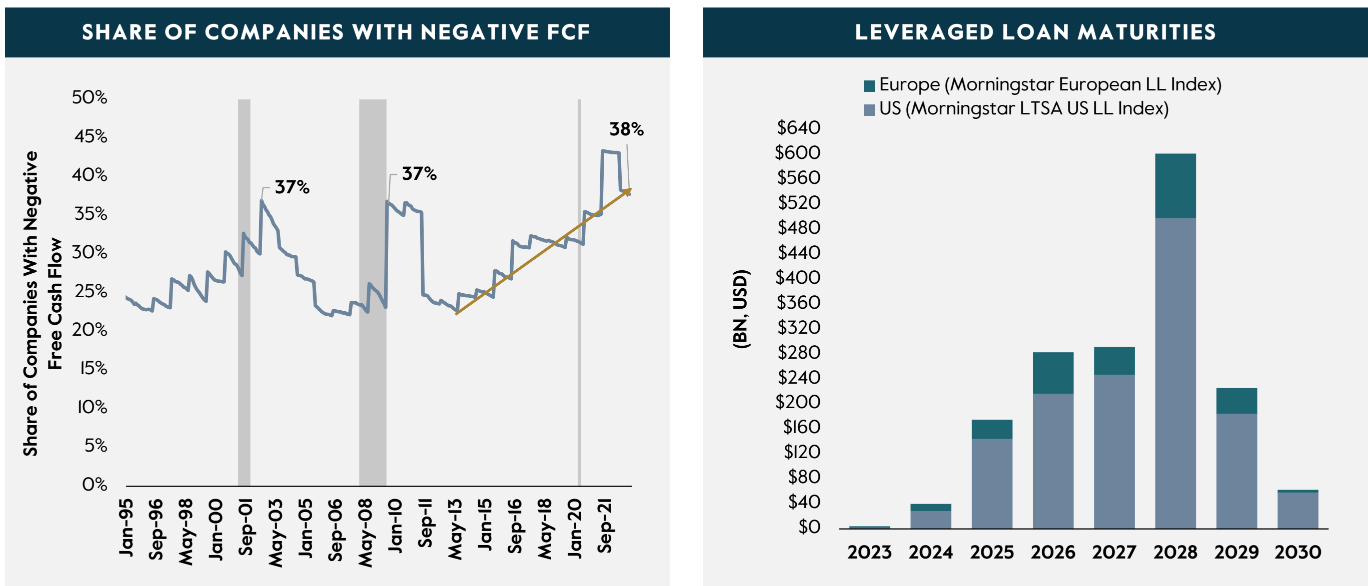


Figure 14. Source: Carlyle Analysis, Federal Reserve Board of Governors Data. August 2023.
Figure 15. Source: Carlyle Analysis CRSP Database; The Wall Street Journal, CreditSight, S&P LCD, August 2023. There is no guarantee any trends will continue.

The best opportunities today may come from refinancing great companies with bad capital structures (Figure 16). In the 2020-21 boom, the main constraint on debt levels was the amount equity investors were willing to put into a company rather than its repayment capacity. This resulted in low loan-to-value ratios, especially for companies with significant upside potential. Now that near-term debt service burdens have complicated growth plans, the most efficient solution may be to replace some interest-bearing debt with payment-in-kind (PIK) notes or preferred or structured securities that trade lower interest payments for a larger share of enterprise value at exit. This will be costly and dilutive, but ultimately allow the equity to retain more long-term value than the alternative scenarios of stagnation or default.

As cash constraints hit more companies, we are also likely to see a wave of spin-offs and asset sales that allow businesses to access necessary liquidity without increasing debt burdens. Expect a wave of carveout opportunities as management teams take a critical look at existing portfolios and dispose of noncore divisions that cannot be as easily financed in the new environment.

The power of idiom and involuntary memory have led market participants to ascribe inordinate significance to inflation's welcome decline. The far more consequential development has been the upward repricing of capital, which may prove more jarring and enduring than many suppose.

Figure 16.
Ample Equity Buffers Despite Cash Shortfall

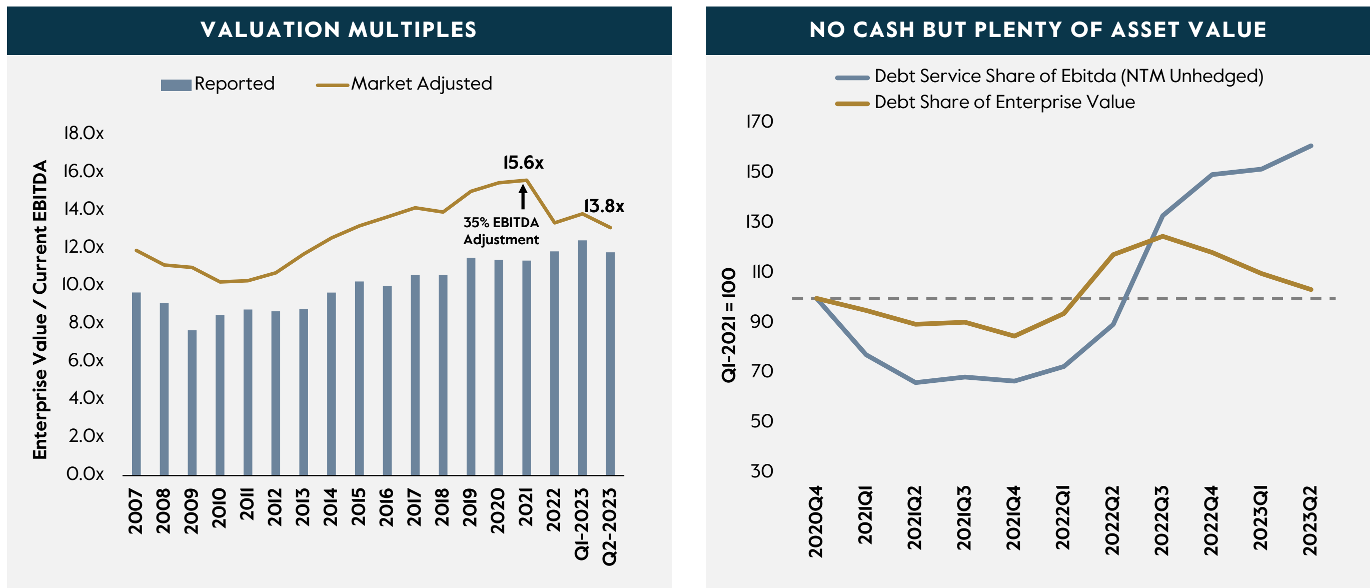


Figure 16. Source: Carlyle Analysis; Federal Reserve Board of Governors S&P Capital IQ, Pitchbook LCD, August 2023.

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