CRE VALUES CASCADING DOWN THE DETERIORATED SCAFFOLDING OF FINANCIAL ENGINEERING

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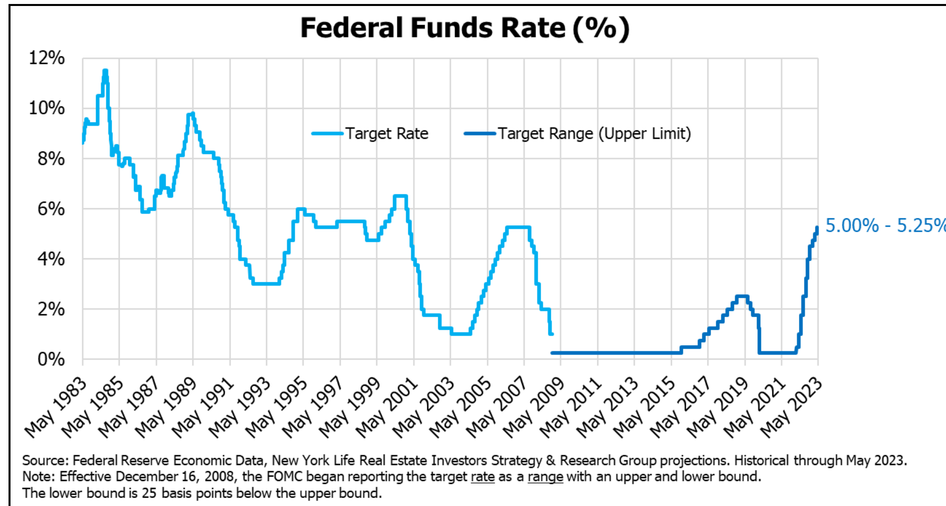
In the Lewis Carroll novel "Sylvie and Bruno", the Outland Emperor wishes to make his subjects twice as rich. A "New Money Act" is proposed that involves doubling the value of every coin and banknote in the realm. "I wonder why nobody ever thought of it before!" says the emperor's advisor, the Outland Professor. "And you never saw such universal joy. The shops are full [of people] from morning to night. Everybody's buying everything!"[1]

The U.S. did not double the value of every coin and banknote but did keep interest rates near zero for almost an entire 15-year period, which resulted in increased (some would say "distorted") asset values.

In order to stimulate the economy in the wake of the Global Financial Crisis (GFC), the Federal Reserve lowered the federal funds target rate down to a range of 0%-0.25% beginning in January 2009. The rate remained at that level until December 2015, before being raised gradually to a range of 2.25%-2.50% by 2019. Even prior to COVID, the Fed had begun lowering the target range once again, before ultimately lowering it 150 basis points (bps) back down to 0%-0.25% in order to battle the economic fallout from COVID-19. In sum, rates were kept close to zero for nearly all the years between 2008 and 2022.

In the wake of the highest inflation in nearly 41 years, the Federal Reserve increased the federal funds rate from the near-zero level in March 2022 up to 5.00%-5.25% as of May 2023, the fastest rate in modern U.S. financial history.[2]

[1] Lewis Carroll, Sylvie and Bruno, 1889 as presented in Edward Chancellor, The Price of Time: The Real Story of Interest, page 309
[2] https://www.visualcapitalist.com/interest-rate-hikes-1988-2023/



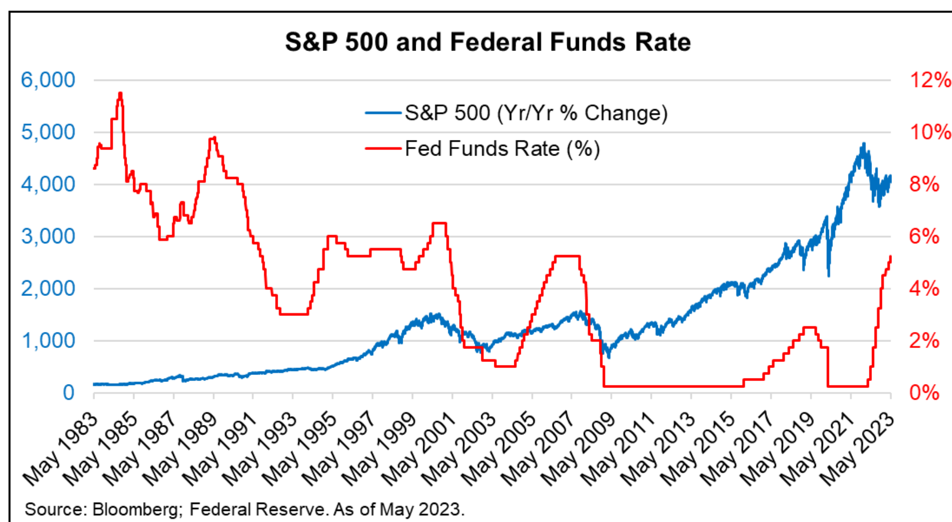
Source: Federal Reserve Economic Data, New York Life Real Estate Investors Strategy & Research Group projections. Historical through May 2023.
Note: Effective December 16, 2008, the FOMC began reporting the target rate as a range with an upper and lower bound.
The lower bound is 25 basis points below the upper bound.

The mantra "**T**here **I**s **N**o **A**lternative" (T.I.N.A.), which meant that since rates were so low, investors had no alternative than to try to reach for yield in the equity market or in other assets such as commercial real estate, held sway. This led to asset price acceleration and asset bubbles. (This applied not only to equities but to almost all assets including commercial real estate.)

The S&P500 soared up 609% from the GFC trough on 3/9/2009 to its peak on 1/3/2022. The S&P500 increase since the Covid trough on 3/23/2020 was 88% as of 5/30/2023. But as the Fed raised rates over the past year and more, another mantra "**T**here **A**re **R**easonable **A**lternatives" (T.A.R.A.) started to make headway. When a guaranteed rate of return of 5% is achievable from safe assets, the lure of more risky investments is diminished. As the Federal Reserve raised rates, prices are trading off their historical highs – but are still at elevated levels.

Inflated Asset Values

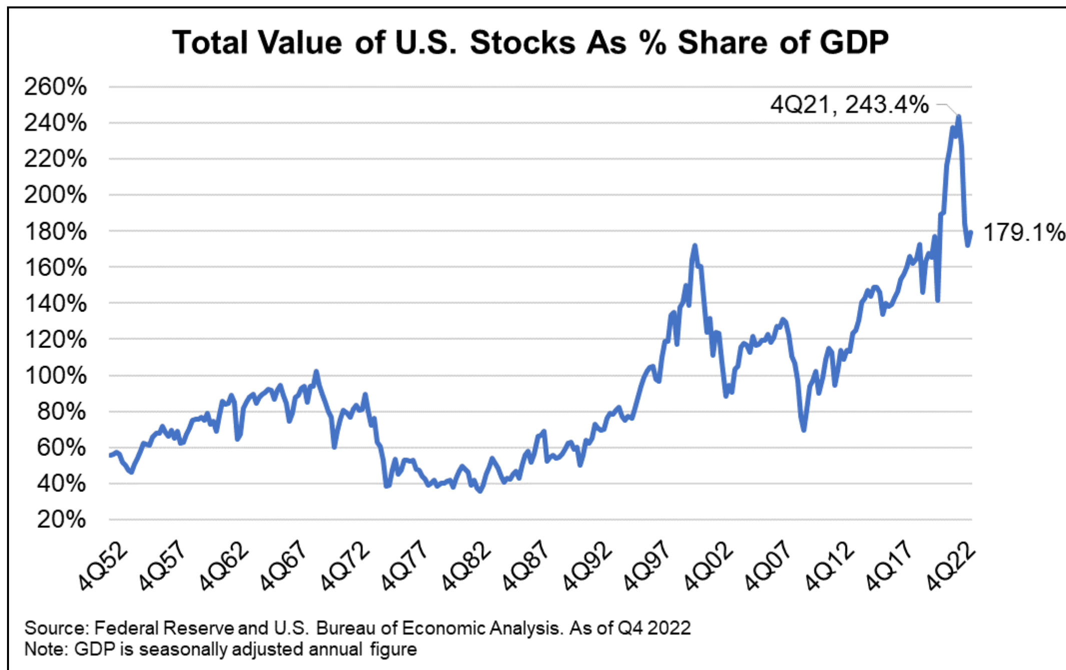
The following chart details the inverse relationship between rates and equity asset values.[3]



Source: Bloomberg; Federal Reserve. As of May 2023.

[3] S&P 500 Index: Stock market index tracking the stock performance of 500 large companies listed on stock exchanges in the United States. It is not possible to invest directly in an index.

Another way to measure asset value inflation is as a share of GDP. By Q4 2021, stock market asset value had risen to 243% of GDP. After the Fed raised rates as high as 5.25%, asset value share declined to 179% of GDP as of Q4 2022. Despite this recent decline, one can see that it is still at a record level.

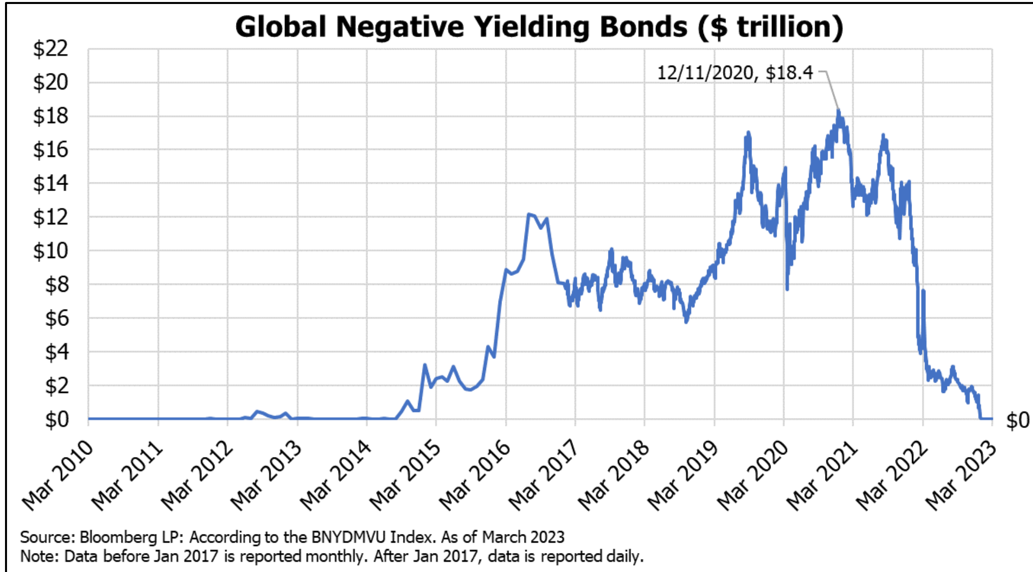


Jacques de Larosière, who served as Managing Director of the International Monetary Fund for the decade ending 1987, as well as Governor of the Banque de France, and President of the European Bank of Reconstruction and Development, stated that, "Above all, we must understand how our world has surreptitiously changed its model for the past two decades. It has slipped to a strange paradigm, one in which the bulk of economic activity is now reflected in the rise in the value of financial assets at the expense of growth, wage income and productive investment."[4]

Negative Yielding Bonds

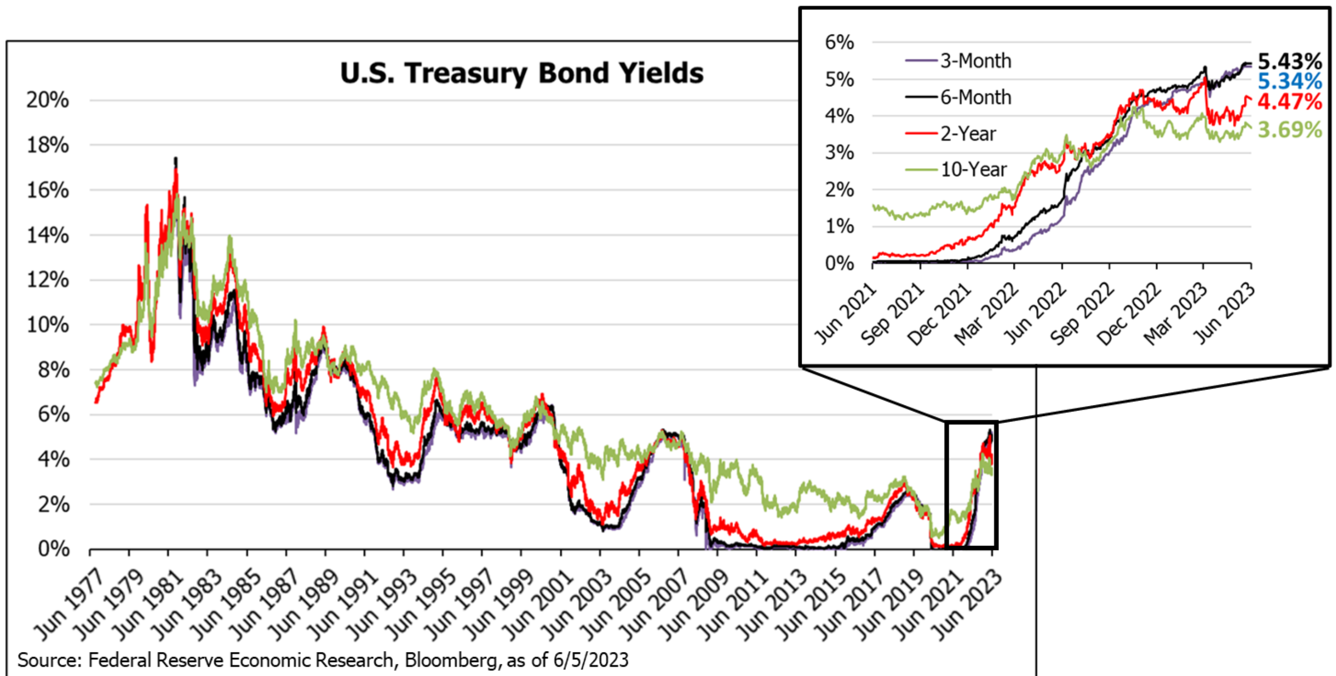
The oldest known reference to loans with a legal interest rate is from approximately 2000 BCE and is found in the *Laws of Eshnunna*, an ancient Babylonian text. Since that time, and logically so, interest rates have been positive. That is until 2015 – at which time, mostly European governments, set interest rates at below zero and at its peak in 2020, entities had issued more than $18 trillion in negative yielding debt.

[4] Jacques de Larosière "Putting an end to the reign of financial illusion: For real growth" JACOB, September 7,2022



Needless to say – heavy unrealized losses occurred when rates rose, but those asset bubbles were not limited to negative yielding bonds. The pain was experienced across the fixed-income investment spectrum.

10-Year U.S. Treasurys purchased for yields ~1% declined in value when yields rose to ~3.5%-4.0%.[5]



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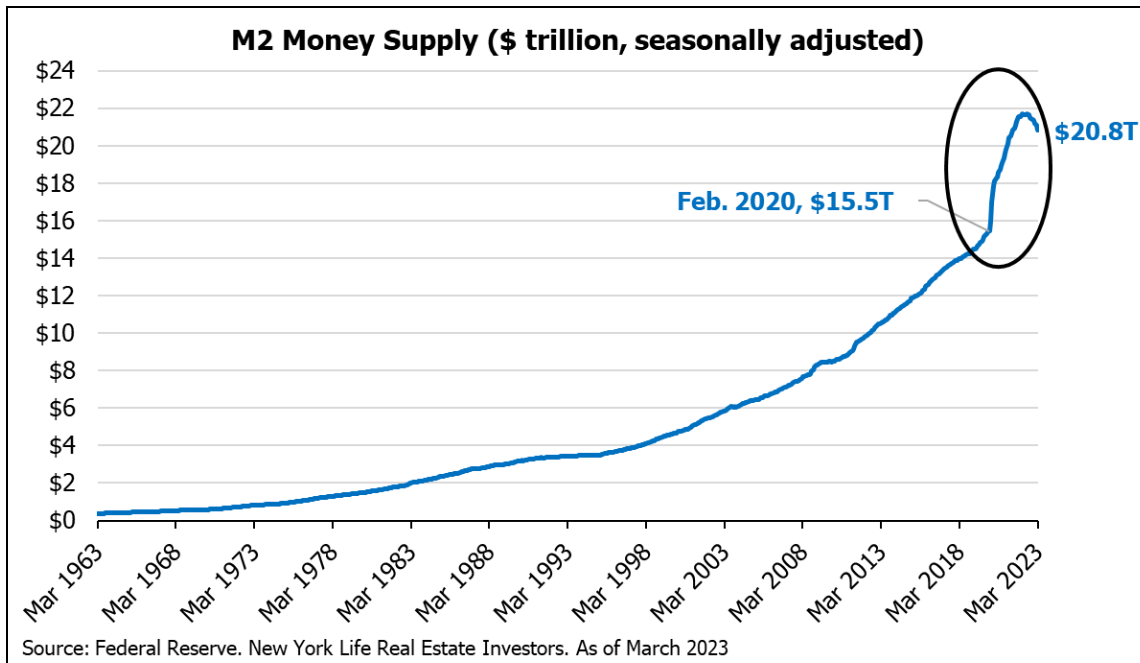
[5] The 10-year Treasury yield was about 1% in January 2021. By September 2022, the 10-year Treasury yield exceeded 3.5%.

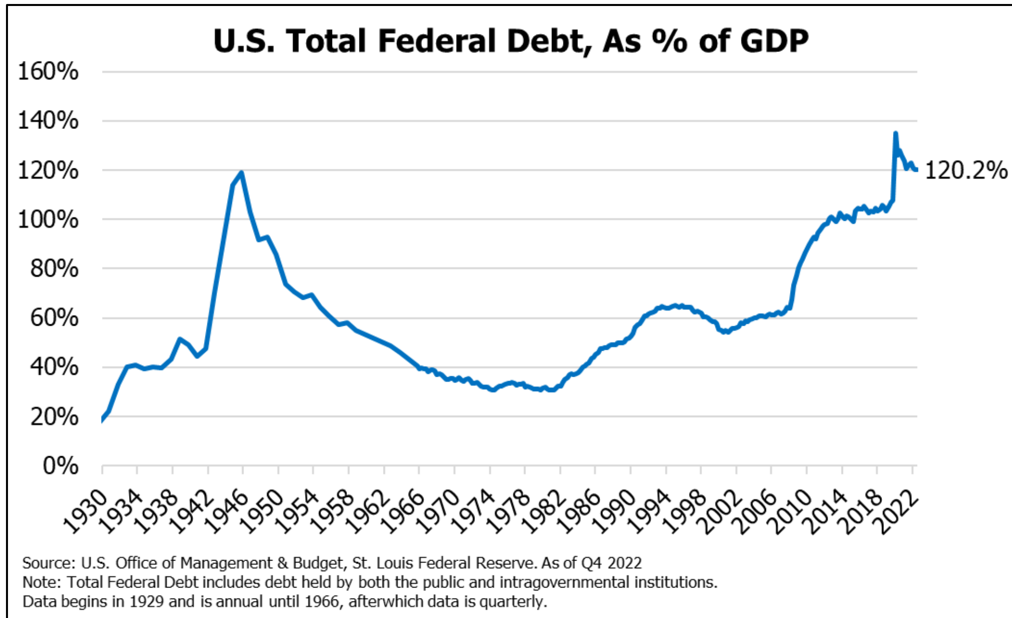
Monetary and Fiscal Stimulus

It was not only the 13 years of artificially suppressed interest rates that rendered the era unique, but it was also the long-term easy monetary supply that central banks kept hoping would juice growth. In addition, when the outbreak of COVID struck, it was necessary for the government to provide financial stimulus so that people who could not work would have income. However, this policy continued after the danger had mostly passed. This financial stimulus was paid for through borrowing that increased the money supply, and, in sum, the magnitude of the monetary stimulus reached nearly $6 Trillion. The M2 money supply[6] reached a peak of $21.7 trillion before falling to $20.8 Trillion. The current level represents a 35% increase since pre-Covid.



Expressed in a different way, the total U.S. federal debt as a share of GDP peaked at 134.8% in Q2 2020, before moderating to 120.2%. This level is double the amount pre-GFC and is matched only by the time of World War II.

[6] M2 money supply is a measure of the U.S. money stock that includes M1 (currency and coins held by the non-bank public, checkable deposits, and travelers' checks) plus savings deposits (including money market deposit accounts), small time deposits under $100,000, and shares in retail money market mutual funds.

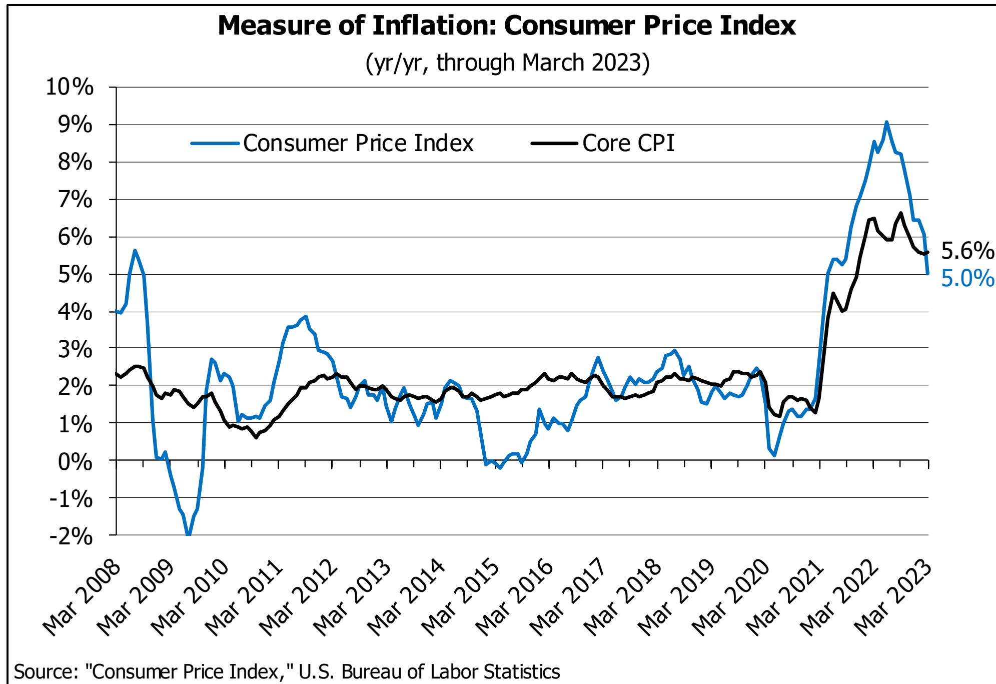


Inflation

Not surprisingly, the increase in monetary supply resulted in a level of inflation not seen for two generations. This situation could be a classic example of the monetary theory of Milton Friedman that, "Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output."[7]

This concept manifested itself in the mismatch between supply and demand. The massive government stimulus spawned a surge in household purchases which impacted thinly stretched factories and global supply chains. These shortages were exacerbated by a smaller pool of available labor for domestic goods production and services. As a result, wages increased the most in 20 years.[8]

[7] Friedman, Milton. 1970. *Counter-Revolution in Monetary Theory*. Wincott Memorial Lecture, Institute of Economic Affairs, Occasional paper 33., p. 24.
[8] The Employment Cost Index for Wages and Salaries of Private Industry Workers grew 5.7% on a year-over-year basis in Q2 2022 before moderating somewhat. This is the highest rate of growth since data began in 2002.

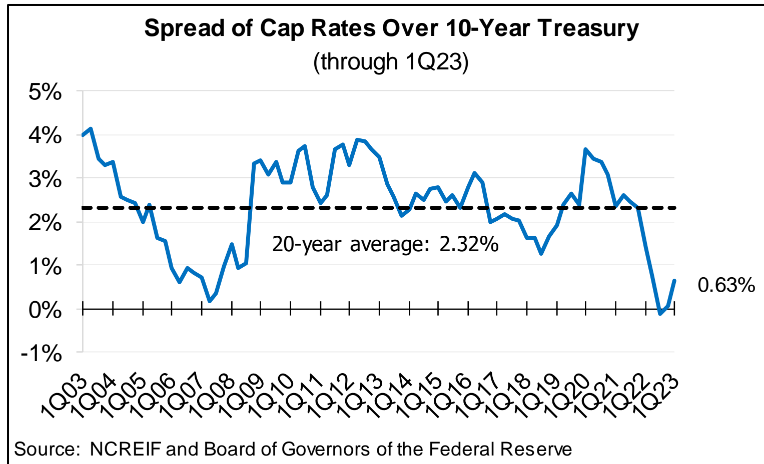


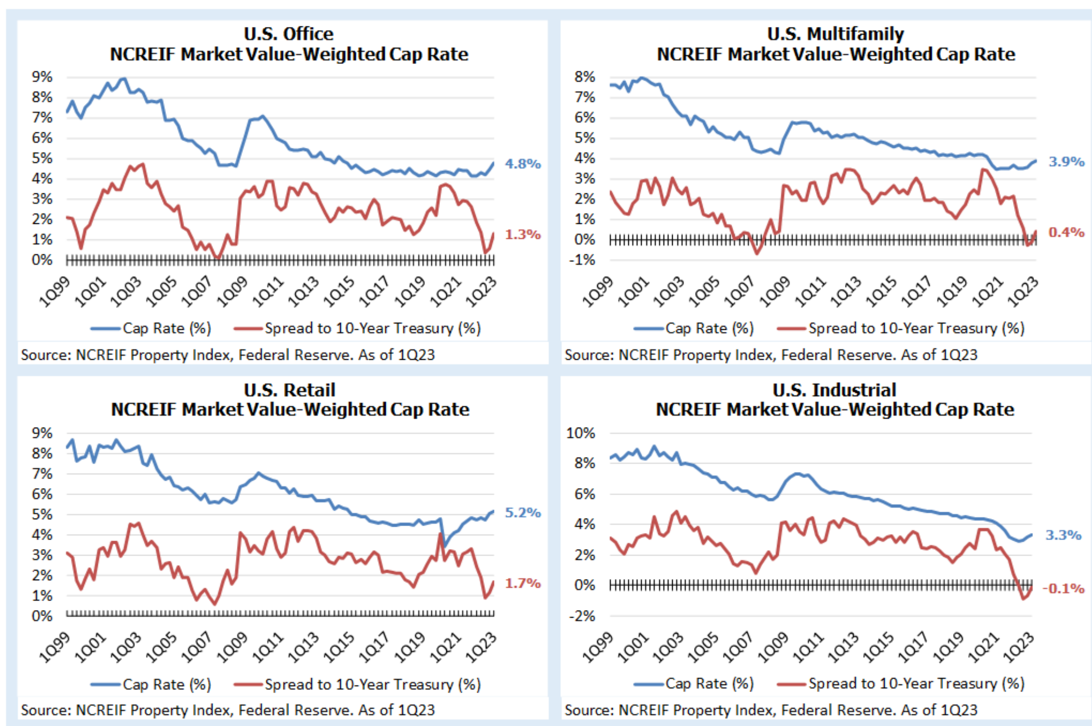
During the decades that preceded the COVID-19 pandemic, low inflation was supported by expanding globalization and low-cost labor and energy. The combined inflationary impact of unprecedented government spending, supply chain disruptions, increased cost of labor, the economic recovery, and the Russia/Ukraine War resulted in the Federal Open Market Committee (FOMC) increasing interest rates at the fastest rate in modern financial history.

Cap Rates Must Rise

As a corollary of higher interest rates, in order to provide a premium over the safe rate, asset cap rates must rise. Or, as noted on *January 24, 2022* by Ray Dalio of Bridgewater Associates, "rising interest rates means all other assets have to adjust."[9] The cap rate premium of 63 basis points over the 10-Year U.S. Treasury as of the end of Q1 2023 is an insufficient risk premium to sustainably attract capital. As a result, spreads, and therefore cap rates, will likely rise. This is especially true for industrial and multifamily properties, where spreads are currently nominal or negative.

[9] https://www.bloomberg.com/news/articles/2022-01-25/dalio-says-u-s-divisions-pose-risk-for-2024-election-upheaval





Part of the assumptions that go into low cap rates are projected rent increases that may not materialize.

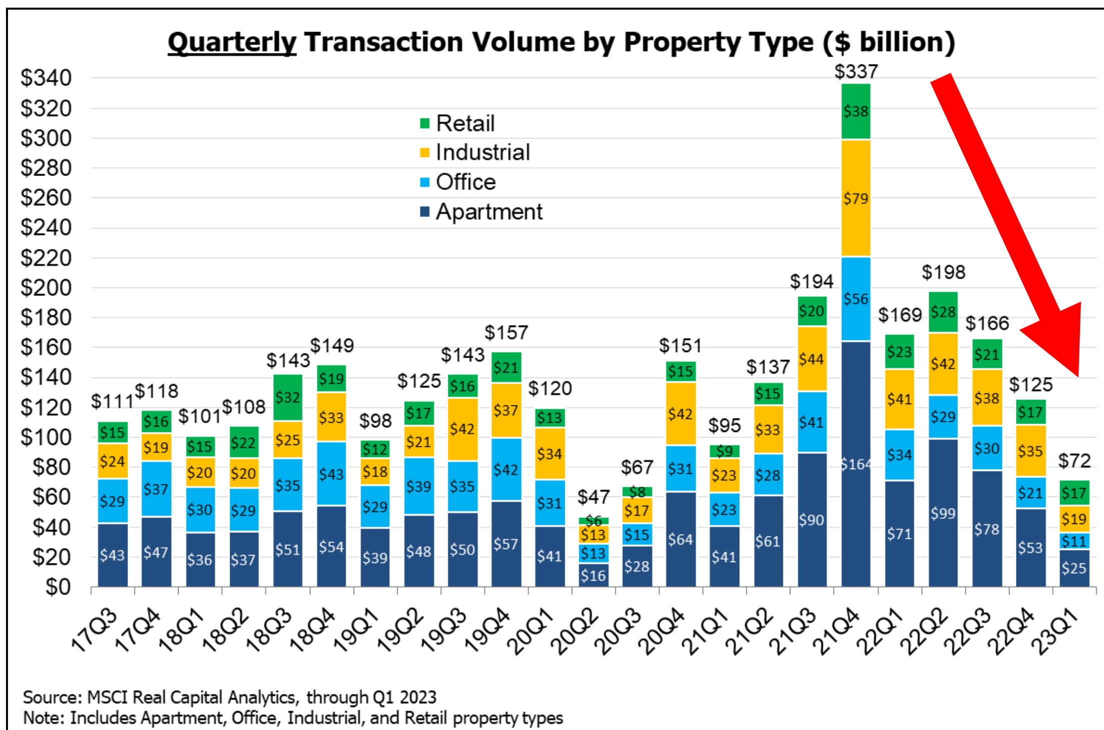
Cash Flows Stagnate

Cap rate increases that are not offset by compensating acceleration in Net Operating Income (NOI) growth results in value declines. However, cash flows at many properties are also challenged. This is particularly true in the office and retail sectors, stymied by the recalibration of those sectors, mostly due to increased participation in remote work and e-commerce. According to CoStar, Multifamily rents increased 16.7% from pre-Covid to Q1 2023 and have now moderated. Embedded rent increases have been largely exhausted in the multifamily sector. Industrial rents have increased even more since Covid, but have recently been increasing at a decelerating rate. Nevertheless, even these favored sectors experienced high rent increases in

the past and the prospect of substantial rent increases compensating for cap rate inflation seems unlikely. In addition, landlords who are unable to raise rents can suffer during periods of inflation. Self-storage and single-family rentals have shorter term leases and therefore rents can be recalibrated more quickly as market conditions are accommodative. In this still high-inflation environment, inflation-adjusted rents are dramatically lower than nominal rents.

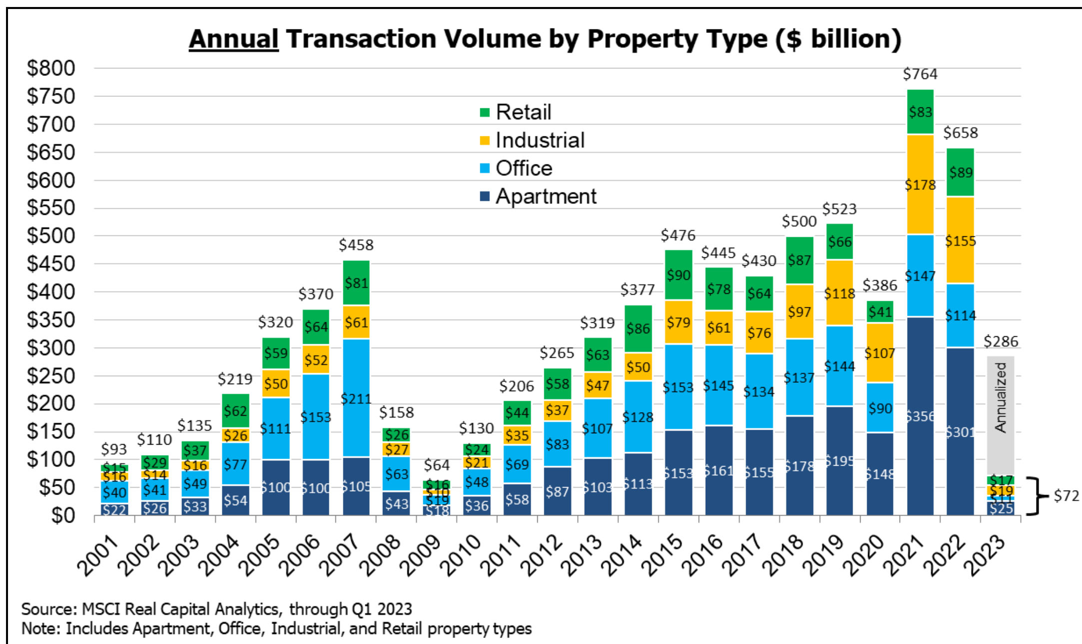
Values Decline After Standoff

When there is a general disagreement between sellers and buyers on market pricing of commercial real estate assets, it frequently has resulted in a standoff and the volume of transaction activity has declined significantly. This has, in fact, happened over the last several quarters.

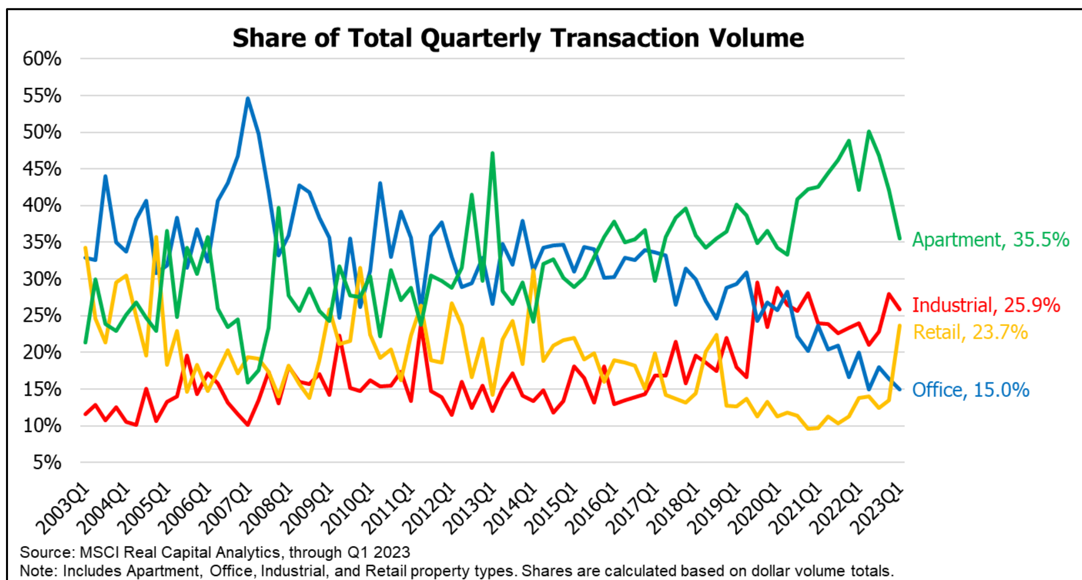


Quarterly transaction volume was down -42.9% in Q1 2023 relative to the prior quarter, Q4 2022. During the same time period, the details for each of the major property types was as follows: Retail: +0.1%, Industrial: -47.2%, Office: -48.1%, Apartment: -51.9%.

Q1 2023 compared to the previous first quarter was down -57.7%. During the same time period the details for each of the major property types was as follows: Retail: -27.4%, Industrial: -54.4%, Office: -68.4%, Apartment: -64.4%.



First quarter 2023 transactions on an annualized basis are only 43% of the 2022 Share. The share attributable to each sector are as follows; Retail: 24%, Industrial: 26%, Office: 15% [was 38% ten years ago], and Apartment: 35.5%.



Cost of Capital, Cap Rate Inflation and Value Decline

The falloff in sales is usually a precursor to value decline and that is what is happening. CRE spreads to Treasurys and asset prices have been adjusting to higher rates. The value declines are magnified in markets that have experienced very high levels of construction.

Previous high valuations were, to a certain extent, dependent on low rates. As cap rates rise, without meaningful NOI growth, values decline. This is true even for the best assets and all the more so for weak assets. For illustrative purposes only, this chart shows a theoretical 200 basis point increase starting from a base of 6.0%. This cap rate inflation would result in a value decline of 25%. The declines would be worse if NOI were to concurrently decrease.

Office Sector: Cap Rate and NOI Growth - Sensitivity Table

Potential Value Decline		Potential Cap Rate Expansion								
		5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	9.00%
Potential NOI Growth	-10.0%	+8%	-2%	-10%	-17%	-23%	-28%	-33%	-36%	-40%
	-5.0%	+14%	+4%	-5%	-12%	-19%	-24%	-29%	-33%	-37%
	0.0%	+20%	+9%	0%	-8%	-14%	-20%	-25%	-29%	-33%
	+5.0%	+26%	+15%	+5%	-3%	-10%	-16%	-21%	-26%	-30%
	+10.0%	+32%	+20%	+10%	+2%	-6%	-12%	-18%	-22%	-27%
	+15.0%	+38%	+25%	+15%	+6%	-1%	-8%	-14%	-19%	-23%
	+20.0%	+44%	+31%	+20%	+11%	+3%	-4%	-10%	-15%	-20%

Source: New York Life Real Estate Investors Strategy & Research Group. As of June 2023

Note: For illustrative purposes only

In the multifamily sector, for illustrative purposes only, this chart shows a theoretical 200 basis point increase starting from a base of 4.0%. This could result in a 33% value decline. A decline in NOI would exacerbate these value declines. In addition, it is important to note that the lower the original cap rate, the greater the impact of a similar cap rate increase on value.

Multifamily Sector: Cap Rate and NOI Growth - Sensitivity Table

Potential Value Decline		Potential Cap Rate Expansion								
		3.00%	3.50%	4.00%	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%
Potential NOI Growth	-10.0%	+20%	+3%	-10%	-20%	-28%	-35%	-40%	-45%	-49%
	-5.0%	+27%	+9%	-5%	-16%	-24%	-31%	-37%	-42%	-46%
	0.0%	+33%	+14%	0%	-11%	-20%	-27%	-33%	-38%	-43%
	+5.0%	+40%	+20%	+5%	-7%	-16%	-24%	-30%	-35%	-40%
	+10.0%	+47%	+26%	+10%	-2%	-12%	-20%	-27%	-32%	-37%
	+15.0%	+53%	+31%	+15%	+2%	-8%	-16%	-23%	-29%	-34%
	+20.0%	+60%	+37%	+20%	+7%	-4%	-13%	-20%	-26%	-31%

Source: New York Life Real Estate Investors Strategy & Research Group. As of June 2023

Note: For illustrative purposes only

For investments in industrial properties, this chart shows a theoretical 200 basis point increase starting from a base of 3.5% for illustrative purposes only. This would result in a potential value decline of 36%. As noted, cap rate increases have an outsized impact on sectors with very low starting cap rates, such as industrial.

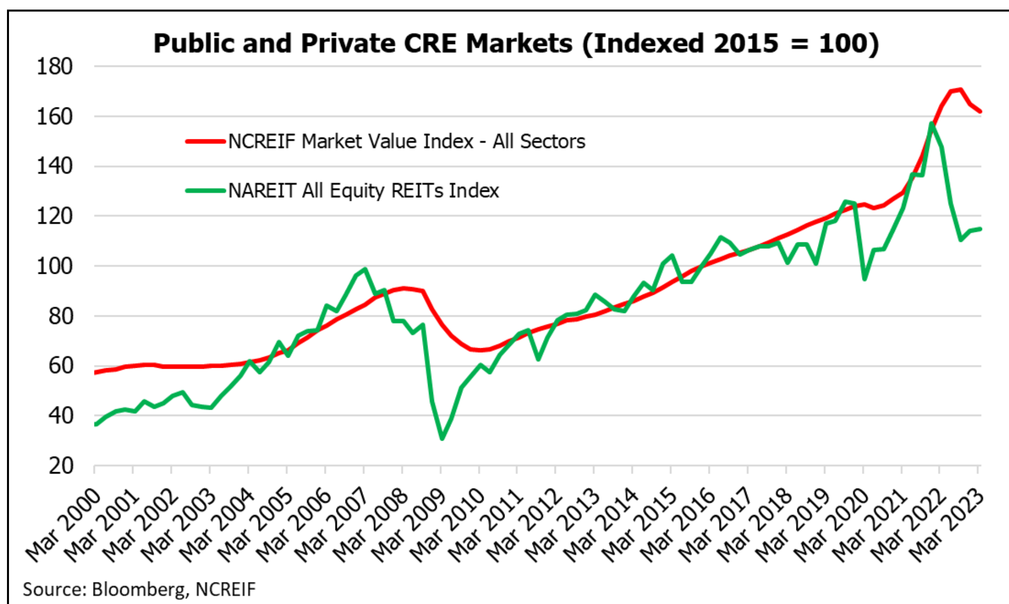
Industrial Sector: Cap Rate and NOI Growth - Sensitivity Table

Potential Value Decline		**Potential Cap Rate Expansion**								
		2.50%	**3.00%**	**3.50%**	**4.00%**	**4.50%**	**5.00%**	**5.50%**	**6.00%**	**6.50%**
Potential NOI Growth	**-10.0%**	+26%	+5%	-10%	-21%	-30%	-37%	-43%	-48%	-52%
	-5.0%	+33%	+11%	-5%	-17%	-26%	-34%	-40%	-45%	-49%
	0.0%	+40%	+17%	0%	-13%	-22%	-30%	-36%	-42%	-46%
	+5.0%	+47%	+23%	+5%	-8%	-18%	-27%	-33%	-39%	-43%
	+10.0%	+54%	+28%	+10%	-4%	-14%	-23%	-30%	-36%	-41%
	+15.0%	+61%	+34%	+15%	+1%	-11%	-20%	-27%	-33%	-38%
	+20.0%	+68%	+40%	+20%	+5%	-7%	-16%	-24%	-30%	-35%

Source: New York Life Real Estate Investors Strategy & Research Group. As of June 2023

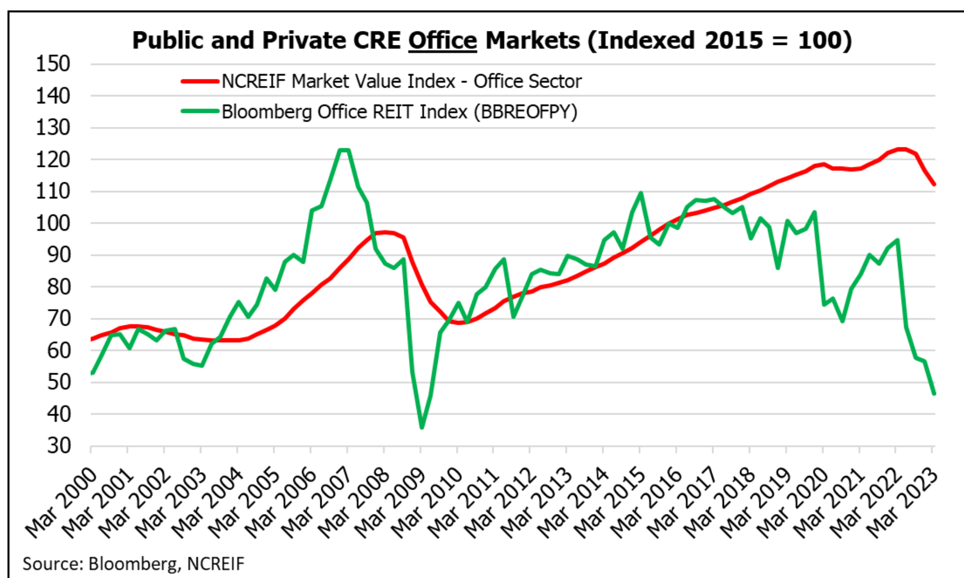
Note: For illustrative purposes only

The impact of this is being felt acutely in the public markets. The private markets have not come close to recognizing what the public markets already know.



Source: Bloomberg, NCREIF

The difference between the correction in the public and private market is even more pronounced in the office sector.[10]



More Detailed Value Trends

Green Street's Commercial Property Price Index (CPPI)[11] is down about 15% in the last twelve months, while high-quality office values are down approximately 25%. Gateway office markets are particularly hit hard with estimated price declines in excess of 30%. NYC office CPPI is down 30%. The assessed tax values of office buildings in NYC are down about 10% over the past two years.[12] Lower property values result in less tax revenue. A quieter urban core has other economic impacts, such as lost foot traffic, which negatively impacts retail real estate. Many cities have also experienced higher crime.

The chart below details how the values of each property type category is down over the past year. In addition, much of the pandemic period increases have been given back as values are down 1.7% since pre-COVID. A noteworthy exception among the main property types is industrial (+33%). Overall, values are likely to decline further as they adjust to a new interest rate and cap rate paradigm.

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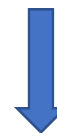
[10] NAREIT All Equity REIT Index: The FTSE Nareit All Equity REITs Index is a free-float adjusted, market capitalization-weighted index of U.S. equity REITs. NCREIF MVI indices are designed to measure the change in "same store" property values over time for those properties in the NCREIF Property Index. The indices are calculated by summing net capital appreciation and routine capital expenditures (i.e., the "typical recurring expenses related to changing tenancy and ordinary repairs") while excluding major non routine capital expenditures (i.e., those which "alter the physical, functional, or economic condition of a property"). Bloomberg Office REIT Index: The BBREIT Office Property Index is a capitalization-weighted sub-index of the Bloomberg REIT Index. The index is based on office properties comprising 75% or more of invested assets and was developed with a base value of 100 as of December 31, 1993. REITs with a component share greater than 4% of the index includes Alexandria Real Estate Equities Inc., Boston Properties Inc., Kilroy Realty Corp., Vornado Realty Trust, Cousins Properties Inc., Douglas Emmett Inc., Highwoods Properties Inc. It is not possible to invest directly in an index.

[11] Green Street's Commercial Property Price Index is a time series of unleveraged U.S. commercial property values that captures the prices at which commercial real estate transactions are currently being negotiated and contracted. Features that differentiate this index are its timeliness, its emphasis on high-quality properties, and its ability to capture changes in the aggregate value of the commercial property sector. It is not possible to invest in an index.

[12] "Property Insights: Rolling the Dice," Green Street, March 20, 2023



Change in Green Street CPPI Through April 2023

Property Type	6 Month	1 Year (Apr '22 - Apr '23)	Previous 1 Year (Apr '21 - Apr '22)	2 Year	Pre-Covid (Mar '20 - Apr '23)	10 Year
All Property	-2.8%	**-15.3%**	20.9%	2.4%	-1.7%	30.5%
Apartment	-4.5%	**-20.9%**	28.0%	1.2%	-3.1%	41.1%
Industrial	4.6%	**-12.9%**	27.7%	11.2%	33.0%	141.8%
Office	-13.2%	**-25.0%**	6.3%	-20.3%	-27.8%	0.4%
Mall	5.0%	**-15.2%**	20.8%	2.4%	-17.6%	-28.7%
Strip Center	-1.0%	**-14.3%**	35.2%	15.9%	0.5%	19.7%
Life Science	-2.0%	**-2.7%**	12.8%	9.8%	15.9%	111.7%
Lodging	2.2%	**-1.1%**	14.1%	12.8%	11.2%	22.9%
Manufactured Homes	-4.3%	**-12.4%**	24.2%	8.8%	17.4%	158.7%
Self-Storage	-4.6%	**-10.0%**	63.9%	47.5%	52.0%	156.8%

Source: Green Street

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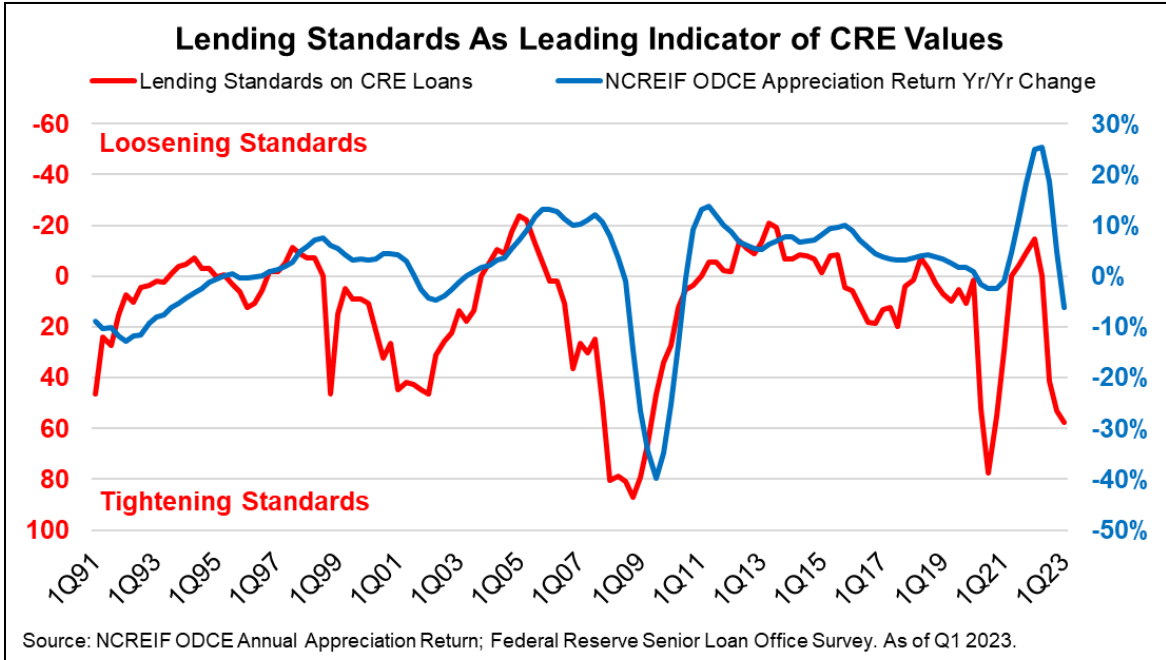
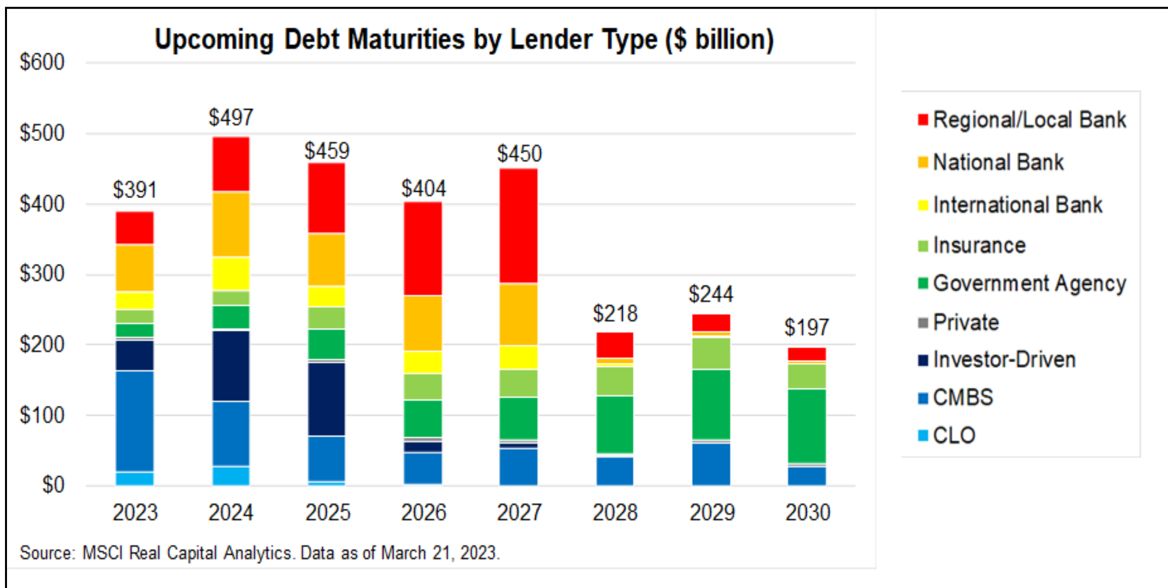
It is possible that the sharp rise in interest rates will result in further value destruction in this cycle. In addition, with several banks collapsing, more government regulation, as well as tightening lending standards, will make it more difficult for investors to get loans. In fact, tighter lending standards have been a good predictor of value declines over the past 32 years.



This would certainly not be the first time commercial real estate (CRE) values experienced substantial declines. During the early 1990s, the commercial real estate industry went through a readjustment period witnessing a series of restructurings and workouts.

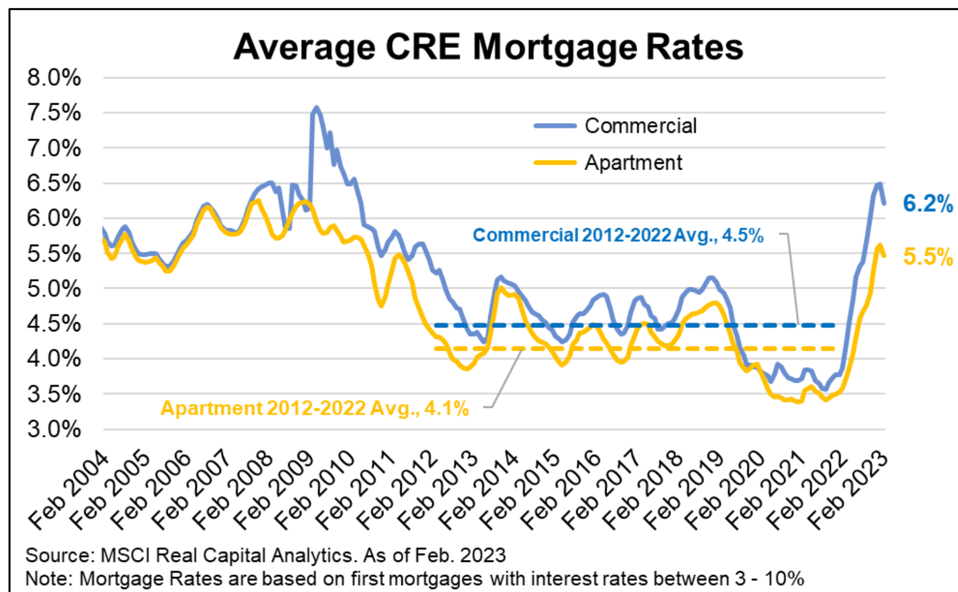
There are approximately $1.5 Trillion of upcoming CRE debt maturities over next three years. Higher interest rates have made it more difficult to refinance loans.



Financing Conditions Also Impact Value

As interest rates have increased, mortgage rates for commercial and multifamily properties have increased substantially. Higher market mortgage rates have made it more difficult to finance new loans and to refinance existing loans. Loans sourced during a period of especially low interest rates may have difficulty refinancing at these higher interest rates. An increase in interest rates would make it more difficult to refinance loans as debt service coverage ratios and loan to value ratios may not pencil out.

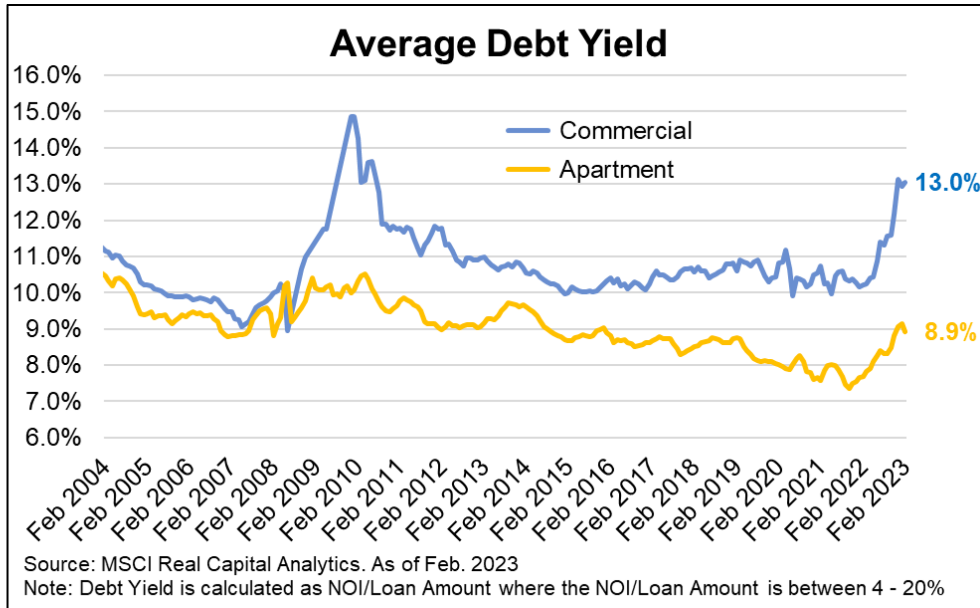
Mortgage rates for commercial (industrial, retail, office) properties are now (most recent data as of February 2023) 6.2% - they were 4.2% pre-March 2022 when the Fed started raising rates and averaged 4.5% between 2012 and 2022 when most upcoming maturities were originally financed. Mortgage rates for apartments are now 5.5% - they were 3.7% pre-March 2022 when the Fed started raising rates and averaged 4.1% between 2012 and 2022 when most upcoming maturities were originally financed. Not surprisingly origination volume plummeted as rates rose and values became more uncertain.



Source: MSCI Real Capital Analytics. As of Feb. 2023
Note: Mortgage Rates are based on first mortgages with interest rates between 3 - 10%

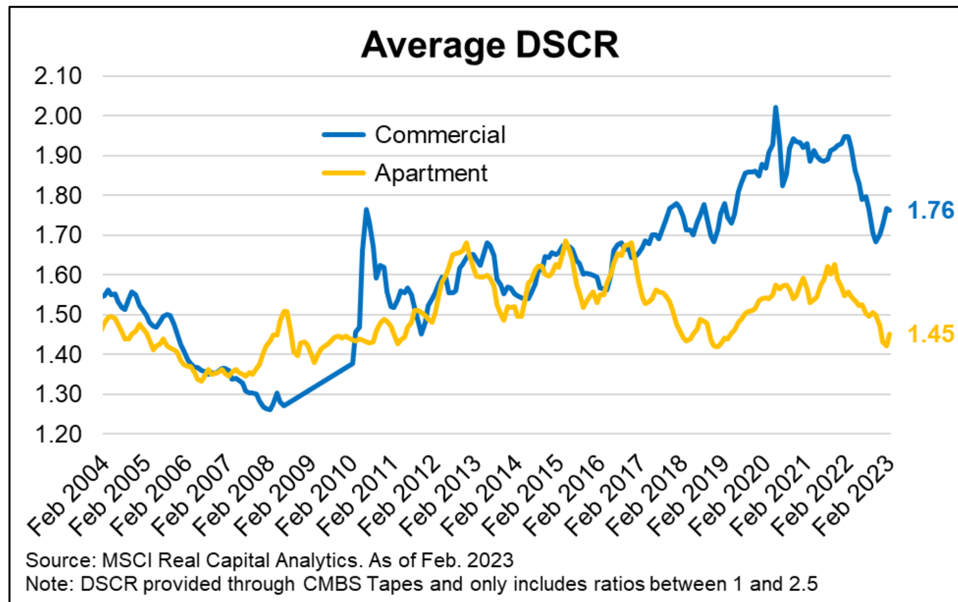
Debt yields for commercial were 13.1% as of February 2023 - they were 10.2% pre-March 2022 when the Fed started raising rates.[13] Debt yields for apartments are now (February 2023) 8.9% - they were 7.8% pre-March 2022 when the Fed started raising rates. Not surprisingly origination volume plummeted as rates rose and values became more uncertain.

[13] Debt yield is calculated by NOI/Total Loan Amount



Source: MSCI Real Capital Analytics. As of Feb. 2023
Note: Debt Yield is calculated as NOI/Loan Amount where the NOI/Loan Amount is between 4 - 20%

Debt Service Coverage Ratios (DSCR)[14] for commercial are now (February 2023) 1.76 - they were 1.92 pre-March 2022, when the Fed started raising rates. Debt Service Coverage Ratios (DSCR) for apartments are now (February 2023) 1.45 - they were 1.54 pre-March 2022, when the Fed started raising rates.

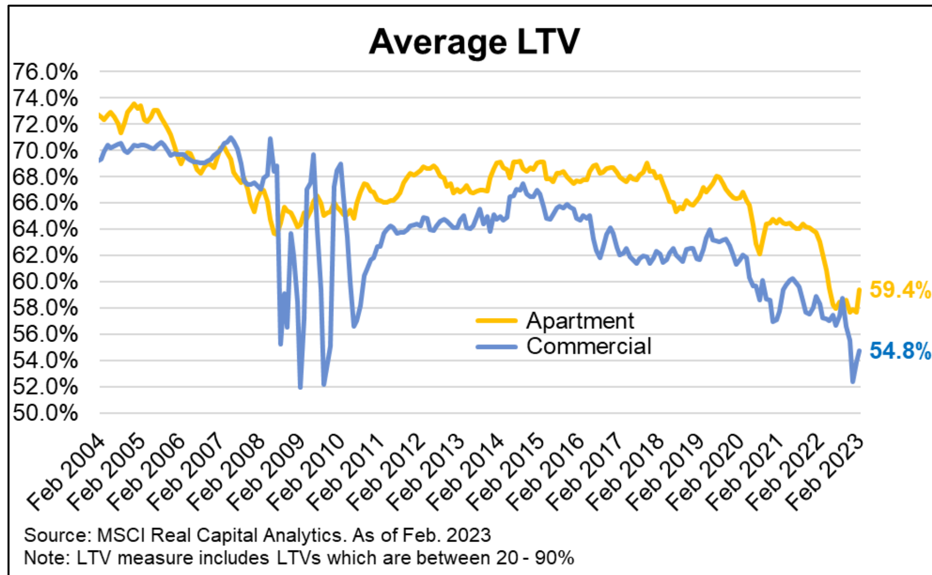


Source: MSCI Real Capital Analytics. As of Feb. 2023
Note: DSCR provided through CMBS Tapes and only includes ratios between 1 and 2.5

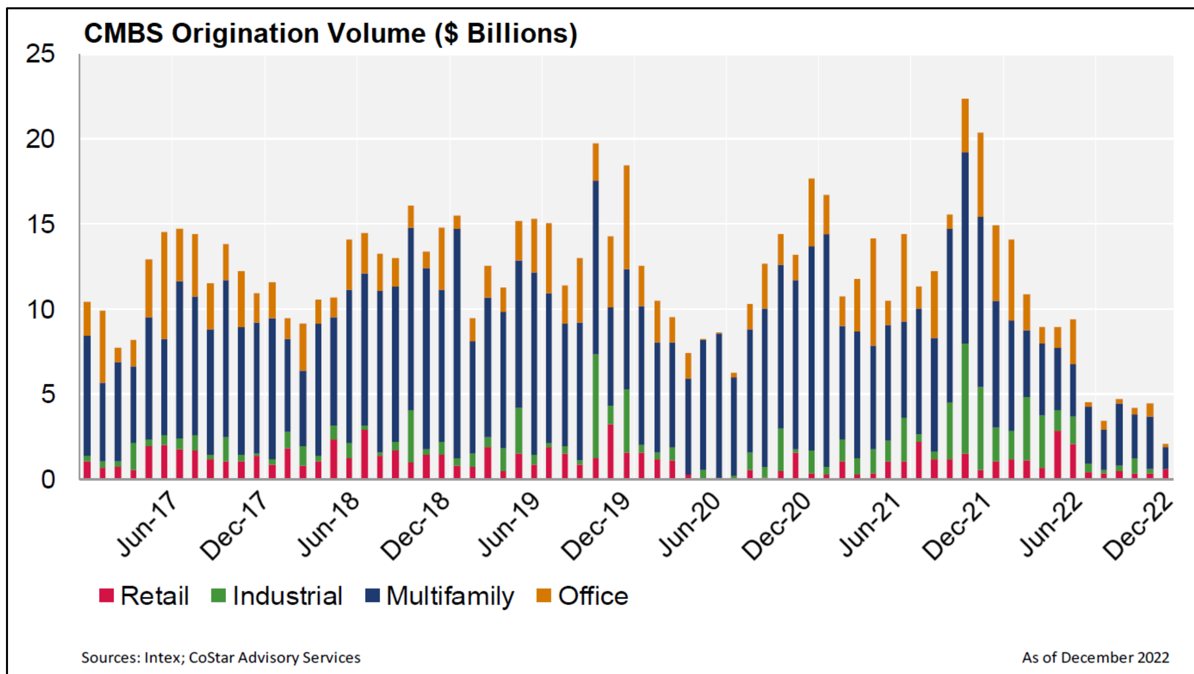
Loan to value Ratios (LTV)[15] for commercial are now (February 2023) 55% - they were 57% pre-March 2022, when the Fed started raising rates. Loan to value Ratios (LTV) for apartments are now (February 2023) 59% - they were 62% pre-March 2022, when the Fed started raising rates. This chart reflects the extreme volatility that existed during the GFC. Otherwise, average LTVs have exhibited an overall downward trend since that time. Lending standards started tightening

[14] Debt Service Coverage Ratios is calculated by NOI/Total Debt Service
[15] LTV is the ratio of total loan balance to the value of the underlying collateral

noticeably in 2022 and average LTVs fell to their lowest level since the GFC by December. In the first two months of 2023, average LTVs were slightly higher.



As expected, tighter lending standards coupled with higher interest rates and substantially lower transaction volume has resulted in a steep decline in loan originations. Buying opportunities may manifest when the values of good assets decline due to cap rate increases. There must be a distinction between these properties and those undergoing permanent secular change and demand destruction. Investors who are able to discern the difference and take advantage of the aforementioned dislocation may find compelling investment opportunities.



Conclusion

There are many issues confronting commercial real estate including the cyclical market downturn, increased regulations, environmental mandates, rising expenses[16], cost of construction, flight to quality, shorter leases, lease rollover wave, remote work, hybrid work, and e-commerce. However, the most important issue challenging the sector is the cost of capital and its impact on financing and values.

Central banks kept interest rates near zero for most of the period between 2008 and 2022. This resulted in inflated asset values of all types, including CRE, as investors chased yield that was not available in safe assets. Starting in March 2022, in response to inflation that climbed to a 41-year high, the FOMC increased the federal funds rate at the fastest pace in modern U.S. financial history. With a safe rate at such an elevated level, all asset prices needed to adjust. CRE was no exception. The rise in cap rates necessary to provide a return premium for investors has resulted in diminished value, as it is not likely that NOI will rise sufficiently to compensate. Although the downward pressure on value may be different (and perhaps less consequential for certain assets in certain locations), the overall trend is affecting all CRE assets and all markets across the United States. Nonetheless, investors who are able to take advantage of the dislocation may find compelling investment opportunities by acquiring high-quality assets at potential discounts to their longer-term values.

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[16] (i.e., Energy, R&M, labor, insurance etc.) + CapEx

except where such results are based on actual historical performance of Investment Products, they do not reflect the impact that material economic and market factors may have had on an actual account.

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