Real Estate Performance in a Rising Interest Rate Environment: An Empirical Analysis

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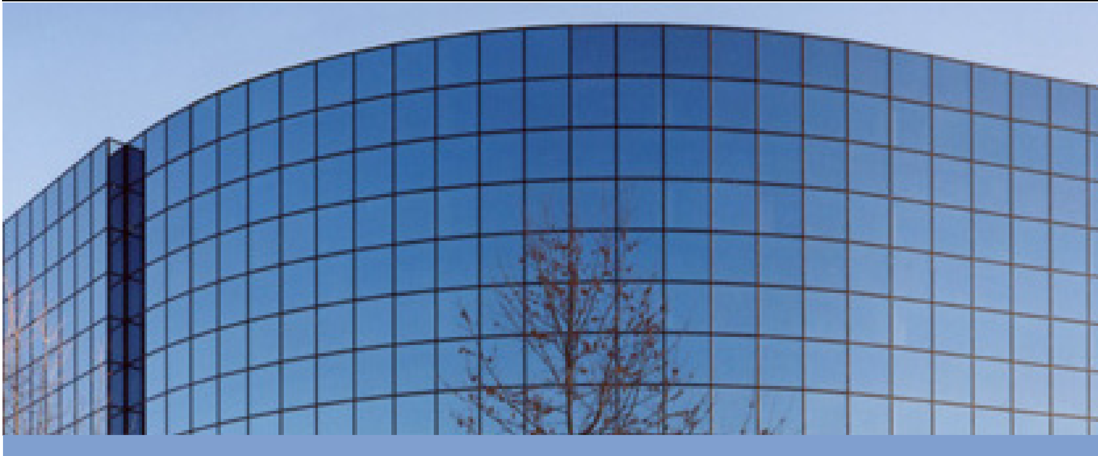

RESEARCH & STRATEGY

Real Estate Equity Group

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Overview

Throughout 2004, the Federal Reserve has systematically increased short-term interest rates, and expectations are for further increases over the near term. As the Fed moves from an accommodative to neutral monetary policy stance, a series of 25-basis point rate increases in 2005 is likely. The yield on 10-year Treasury bonds continues to hover between 4%-4.5%, but could potentially rise to 5.5%-6% over the next 12-18 months, as expected by some economists. In addition, with expectations of continued moderate economic growth, healthy corporate profitability, and improving labor markets, all indications are pointing to further increases in interest rates over the near to mid-term, with the changes showing up in the long end of the yield curve. The concern is that rising interest rates may set the stage for rising cap rates, falling values, and ultimately poor returns in the real estate market.

The purpose of this study is to provide a thoughtful and instructive framework to assess real estate performance in a rising interest rate environment. In particular, this analysis compares return performance during rising and falling interest rate cycles and examines what property types have historically performed well during these times. The main finding is that real estate has performed better in periods of rising interest rates than in falling ones, particularly during times of economic expansion, where real estate has been able to produce strong fundamental returns driven by earnings growth. This result is somewhat comforting as market participants have grown increasingly anxious regarding the potential negative effects of rising interest rates on real estate returns.

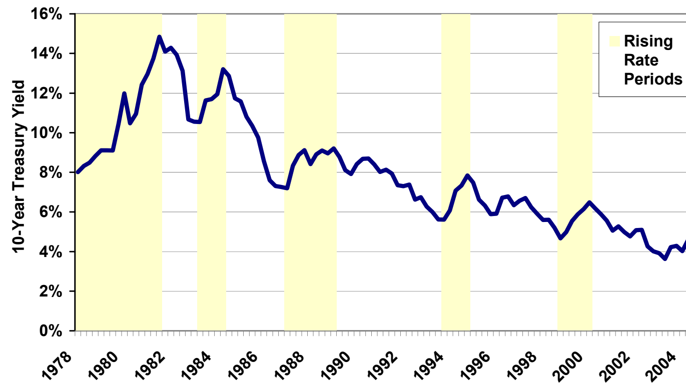
Importantly, some of the factors that drive interest rates higher—namely stronger economic growth—also bolster real estate market fundamentals and support returns. One could theorize that all else equal, rising interest rates would negatively affect returns. However, rarely is all else equal and, any negative impact from rising rates is usually outweighed by the positive effects of a strengthening economy. Empirically, the positive relationship between returns and rising interest rate environments is strongest for the apartment sector. While the retail sector has also demonstrated a positive relationship, it is significantly weaker as the retail sector's fundamental return benefits from low interest rates. In fact, the modest cross correlations of these two sectors during rising interest rate periods results in strong risk-reducing portfolio diversification benefits. Lastly, when looking at the latest cycle, these findings explain much of what has been largely considered an unusual period characterized by declining fundamentals with significant declines in cap rates.

Identifying the Interest Rate Periods

One of the challenges of this analysis is that interest rates (as proxied by the yield on 10-year Treasury bonds) have been on a steady downward trend since the inception of the NCREIF index. To overcome this, time periods were identified that had upward trending interest rates that were sustained for at least one year. Exhibit 1 identifies the rising rate time periods (shaded) and demonstrates the steady downward trend in interest rates over the period. The recent upward trend in interest rates over the past several quarters was excluded from the analysis, as it is likely that we are only at the beginning of this trend.

Exhibit 1: Interest Rates Over Time: 1978 - 2004

The increase in interest rates during periods ranged from 181 bps to 684 provides details of each interest rate addition to examining these periods, periods of declining interest rates for purposes.



Source: SSR Realty Advisors; Economy.com

the selected time bps. Exhibit 2 period. In we examine the comparison

Exhibit 2: Rising/Falling Interest Rate Time Periods

Time Period	Number of Quarters	Starting 10-Yr Treas. Yield	Ending 10-Yr Treas. Yield	Basis Point Change	Average Change Per Quarter
1978q1 - 1981q3	15	8.0	14.9	684	46
1981q4 - 1983q1	6	14.1	10.6	-353	-59
1983q2 - 1984q2	5	10.5	13.2	266	53
1984q3 - 1986q4	10	12.9	7.3	-561	-56
1987q1 - 1989q1	9	7.2	9.2	202	22
1989q2 - 1993q3	18	8.9	5.6	-315	-18
1993q4 - 1994q4	5	5.6	7.8	223	45
1995q1 - 1998q3	15	7.5	5.2	-228	-15
1998q4 - 2000q1	10	4.7	6.5	181	18
2000q2 - 2003q2	13	6.2	3.6	-195	-15

Source: SSR Realty Advisors; Economy.com

Return Performance by Property Type

Returns were examined by property type and decomposed into their various components over the rising and falling interest rate periods. There are a number of methods to decompose a property sector's total return. One is the dividend discount model approach, which separates returns into the various components of the dividend discount model: dividend yield, payout ratio, earnings growth and cap rate effect. Another method is simply to break out the appreciation and the income returns. Both of these methods are useful and are presented in Exhibit 3.

Source: L04114FXK(exp1105)MLIC-LD

Exhibit 3: Return Performance Across Interest Rate Cycles

			Dividend Discount Model						Returns		
Interest Rate Period	PropType	# of Qrts	Initial Yield	Dividend Payout Ratio	Dividend Yield	NOI Growth	Fund Return	Cap Rate Effect	Inc Return	App Return	Total Return
Falling	NPI	60	7.86	64.76	5.12	3.39	8.51	-0.24	7.97	0.27	8.27
Falling	Apartments	60	7.96	81.70	6.51	-1.38	5.13	5.34	7.89	2.44	10.47
Falling	Industrial	60	8.42	67.11	5.66	2.48	8.14	0.89	8.45	0.53	9.03
Falling	Office	60	7.80	65.42	5.12	2.34	7.46	-0.15	7.93	-0.61	7.31
Falling	Retail	60	7.70	65.30	5.07	6.80	11.87	-2.97	7.92	0.91	8.89
Rising	NPI	40	8.02	69.70	5.61	4.32	9.93	1.52	8.11	3.15	11.45
Rising	Apartments	40	8.05	83.54	6.72	5.51	12.23	2.28	8.06	6.11	14.52
Rising	Industrial	40	8.29	73.69	6.08	5.92	12.00	-0.57	8.55	2.71	11.43
Rising	Office	40	7.92	67.93	5.39	2.82	8.21	2.57	7.91	2.72	10.77
Rising	Retail	40	7.84	65.93	5.21	4.92	10.13	0.98	7.96	2.98	11.11
Dif.	NPI		0.15	4.95	0.48	0.94	1.42	1.76	0.14	2.89	3.18
Dif.	Apartments		0.09	1.84	0.22	6.89	7.11	-3.06	0.17	3.67	4.05
Dif.	Industrial		-0.13	6.58	0.42	3.44	3.86	-1.47	0.10	2.18	2.40
Dif.	Office		0.11	2.51	0.27	0.48	0.74	2.72	-0.02	3.33	3.46
Dif.	Retail		0.14	0.63	0.14	-1.88	-1.74	3.96	0.04	2.06	2.22

Note: data represent averages over the periods.

Source: SSR Realty Advisors; NCREIF

Perhaps the most important finding is that real estate has performed better in rising interest rate environments than in falling ones. The NCREIF Property Index has a higher total return, income return and appreciation return when interest rates are rising. And, real estate has stronger fundamental returns during rising rate cycles. Again, real estate performance likely was stronger in these rising rate periods because they are generally characterized by improving economic conditions which, in turn, bolster property market fundamentals.

Apartment Sector

While the apartment sector outperformed all property types over the whole time period, it also experienced the highest total returns in both the increasing and decreasing interest rate cycles (14.5% and 10.5%, respectively). Furthermore, the apartment sector experienced the highest average improvement in returns during the rising rate periods versus the falling rate periods. In the rising interest rate environments, the apartment sector also had the highest fundamental returns with the highest dividend yield and the second highest earnings growth. The apartment sector's strong return performance is derived from its quality dividend yield as apartments had the highest, or next to the highest dividend yield, regardless of the interest rate environment.

However, in times of declining interest rates, the return components rotate i.e., over 50% of the apartment sector's total return is due to cap rate changes. In fact, apartments benefited most from cap rate changes in declining interest rate cycles. The apartment sector also experienced the weakest earnings growth and lowest fundamental return of any property type during these periods. This finding is somewhat intuitive given that when interest rates decline, affordability factors convert household tenure choice to ownership and away from tenancy and vice versa. As such, the ability to manage occupancy and raise rents is hindered in the declining interest rate cycles. Additionally, short-term leases allow earnings in the sector to quickly react to improving market conditions.

The historical findings noted above are reflected in the most current cycle for apartments. As interest rates declined during the recent weak economic period, apartments experienced solid total returns derived mostly from cap rate compression rather than earnings growth. Although more households chose ownership in the low interest rate environment, a choice which contributed to an imbalance in supply-demand fundamentals, investors nonetheless funneled capital into the apartment sector to take advantage of the numerous attributes that continue to make the sector highly attractive (high dividend yield, low volatility, etc.). These capital flows bolstered prices and pushed cap rates to all-time lows. Looking forward, the expectations of rising interest rates with the already peak-level of house prices should help increase rental occupancy (in addition to an improving economic situation and favorable demographic trends), increase rents and ultimately show up in stronger earnings growth.

As cap rates have compressed under strong capital flows, there is risk that a rapid cap rate expansion could hurt apartment values, particularly in the absence of commensurately strong earnings growth. Relative to other asset classes, apartments have benefited least in terms of their cap rate contribution to total return when interest rates rise. Highlighting the potential risk, the correlation of cap rates to interest rate changes is the greatest in this sector. However, risk is mitigated by the fact we believe current apartment pricing partially reflects investors' recognition that the sector is low-risk and should be priced accordingly. Moreover, the apartment sector is not only one of the lowest-risk property sectors historically, but because it requires lower capital requirements, it has a higher dividend payout ratio. This higher payout ratio allows the sector to generate an equivalent dividend yield with a lower cap rate (this spread can be upwards of 130 bps over commercial sectors). Indeed, apartment dividend yields have stabilized near the NCREIF average at just less than 5%. While cap rates will likely rise gradually in the apartment sector, we do not expect the sector will experience a mean-reverting cap rate expansion.

Finally, during the current trough in interest rates, a significant number of primarily Class A apartment units have been acquired and converted to condominiums. This has had the dual effect of skewing cap rates lower (condo converters are concerned with profits from sales not cap rates) and reducing available supply in some markets. As affordability rises, increasing demand for rental apartments in those markets should result in superior rent and NOI growth as we move forward.

Retail Sector

The retail sector has, by far, the largest fundamental returns in falling interest rate times, a finding that might appear intuitively obvious. Falling interest rates tend to increase consumers' disposable real income which, in turn, increases consumption and, ultimately, fuels retailers' performance and retail rent levels. In fact, in the five falling-interest-rate time periods, the retail sector had the highest earnings growth in four of those periods, which is consistent with the current cycle. However, the sector's high capital cost requirements contribute to its low dividend yield. The low interest rates and availability of credit kept consumption very high, even during the economic downturn. Unlike the other sectors that experienced downturns in space market fundamentals, the retail market remains in equilibrium and has tallied a very strong total return performance.

In rising interest rate times, as expected, the fundamental returns taper off. As such, retail has underperformed the index in rising interest rate times and has outperformed in falling rate times. From a portfolio perspective, the fundamental return components of retail and apartments seem to move in opposite directions historically. This lack of correlation has portfolio diversification implications and is suggestive of the benefits of holding retail and apartments. Even more importantly, retail and apartments have the lowest total return cross correlation of the four major asset classes during times of rising interest rates (Exhibit 4).

Exhibit 4: Cross Correlations of Major Property Types During Rising Rate Periods

	Apartments	Office	Industrial	Retail
Cumulative Avg. Correlation	0.247	0.439	0.519	0.365

Source: SSR Realty Advisors; NCREIF

Office Sector

The cumulative returns of the office sector have been the weakest in both the falling interest rate cycles and the rising interest rate cycles (7.3% and 10.8%, respectively). While performing poorly overall, it should be noted that the office sector, perhaps more than any other property type, does relatively better in rising rate environments than in falling rate environments. Of all the property types, the positive cap rate effect on office returns was the strongest of all property types during periods of rising rates. Assuming that interest rates were rising because the economy was recovering and space markets were tightening, strong capital flows from domestic and off shore investors looking to efficiently place their money have tended to compress cap rates. In rising rate times, office receives the biggest relative total return improvement. The sector has also historically performed exceptionally well from trough to peak. Assuming office employment growth continues to improve and additional supply remains muted, the office sector should do better in the short-term than in the recent past, but market selection is perhaps the most critical in this sector. The office market currently has the greatest vacancy rate of the major sectors which may result in delayed growth in average rents until occupancies stabilize.

Industrial Sector

On a total return basis, the industrial sector outperformed the index in the falling rate cycle and market-performed in the rising rate cycle. Fundamentally, the industrial sector has been solid in both rising and falling interest rate cycles and has shown the ability to ramp up earnings growth when the economy heats up. However, the cap rate component of returns has not given it a relative boost in either cycle, keeping total returns moderate. As we move forward in this cycle, the expectations are that industrial can increase its fundamental returns as businesses restock inventories, production picks up and trade flows remain elevated. Unfortunately, the inventory build is taking somewhat longer than expected as businesses remains cautious given ongoing uncertainty about the economic expansion.

Conclusion

Real estate, as an asset class, should perform well on both a total return and a risk-adjusted return basis, especially relative to other asset classes, as industry fundamentals improve both because of, and despite, the rising interest rate environment. While the impact of likely increases in interest rates are potentially significant and all investors should assess the composition of their portfolios, the major finding of this study is that real estate has performed quite well during periods of rising interest rates – something that cannot be said about stocks and bonds. Given that the ongoing economic expansion appears to be driving interest rates higher, this is particularly encouraging for real estate performance. Combining this with the moderating return expectations for the other main asset classes, it appears to be a favorable environment to consider allocations to real estate. Most importantly overall, selective acquisitions, advantageous sales and investment discipline will be critical to mitigating risk during this part of the cycle.

Disclaimer

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