

Timing Matters: Getting in on the Ground Floor

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BLACKROCK

I. Introduction¹

As the real estate market matured and evolved over the past 20 years, particularly since the emergence of public markets for real estate debt and equity, institutional investors have acknowledged the importance of including this asset class into mixed asset portfolios. While participants in this asset class have multiple objectives including, without limitation, diversification, downside protection, income, and inflation hedging potential, their performance benchmark has generally been to exceed the NCREIF Property Index (the "NPI").² While there has been a volume of research suggesting that effective market timing is much easier said than done, research also supports the conclusion that market timing can enhance returns. The ability to tactically acquire commercial real estate at the "bottom" of a cycle can help achieve that goal. This paper focuses on the impact of investment timing on long-term investment performance. It defines the optimal time frame of "buying at the bottom" and demonstrates how buying near the bottom and several years³ after the bottom provides a higher probability of outperforming the NPI due to expected relatively higher dividend yields and the recovery of net operating income (NOI).⁴ It should be noted that other factors, such as property type, market and asset selections, life-cycle, and leverage, are just as critical to achieving investment outperformance.

In the recent economic and commercial real estate downturn, arguably the most devastating in history, institutional investors face challenging decisions. The NPI fell 31.5% from its peak⁵ through 1Q10, and most institutional investors believe the NPI is at or near the bottom. However, investors see remarkably strong pricing for well-leased, Class A assets in major markets, due to strong capital market demand and a lack of supply. In some cases, bidding wars have boosted pricing on assets to nearly 2006-2007 levels. Investors looking for a bottom in the institutional-grade commercial real estate market are asking whether the decline in the NPI indicates the bottom, even though pricing for good-quality properties seems to be at or close to peak pricing. In many recent instances, investors underwriting well-leased, Class A assets in major markets projected total returns between 7.0% and 8.0%, when winning sales prices are applied to 10-year pro forma projections. At first glance, this modest return range does not seem to indicate "bottom-of-the-cycle" pricing, particularly when compared to the NCREIF Property Index (NPI) long-term annual average nominal total return of 7.5%⁶ and the real total return of 4.3%.⁷

Investors in today's market are asking: 1) are today's pro forma returns good enough to support buying and, 2) is now the right time in the market cycle to buy? This article will compare and contrast risk/return attributions of institutional-grade core real estate investments under different stages of a market cycle.⁸ The dynamics of the previous real estate cycles are examined to assist in determining how timing can increase the probability of outperformance. While history does not necessarily repeat itself, it is nonetheless instructive to examine past cycles for insight into the manner in which to approach the current situation. This analysis demonstrates that investors buying real estate near or several years after the bottom of a market cycle, and plan to hold long-term, will have a higher probability of outperforming the long-term NPI benchmark. This should be the case even if pro forma IRRs underwritten at or near the bottom of the cycle today appear similar to those underwritten at the peak of the cycle.

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II. Review of Total Return Components

Total return consists of three key components: 1) the dividend, or “cash-on-cash” yield, 2) net operating income growth, or earnings growth, and 3) changes in pricing due to cap rate compression/expansion. Separating returns into these three factors provides more insightful information than the traditionally reported income and appreciation returns.⁹ The fundamental total return equation can be expressed as follows:

$$k = \frac{CF_1}{P_0} + g + \nabla$$

Where

k = total return,

CF_1/P_0 = the initial cash-flow yield, or dividend yield,

g = NOI growth or earnings growth (the income growth generated by the property through leases; NOI growth is one of the two drivers of property value appreciation/depreciation),¹⁰ and

∇ = the cap rate shift effect (the effect of cap rate expansion or compression). This is the other driver of property value appreciation/depreciation. There are three key determinants of the cap rate shift effect: 1) the opportunity cost of capital that investors expect to earn in alternative asset classes relative to the risk-free rate, 2) growth expectations in the property’s future cash flows, and 3) risk perceptions and preferences among investors regarding commercial real estate properties. Cap rate shifts have large impacts on returns in the short-run but little impact in the long-run (see Appendix 1 for more details). As a result, returns for assets with a long-term hold period should be less affected by cap rate shifts and more affected by property cash flows ($CF_1/P_0 + g$).¹¹

$$\frac{CF_1}{P_0} = \left(\frac{NOI_1 - TI - LC - CE}{P_0} \right)$$

The above equation represents the initial dividend yield, or the initial net operating income (NOI_1) less tenant improvements (TI), leasing commission (LC), and capital expenditures (CE). The ratio of cash flow (CF_1) to net operating income (NOI_1) is often referred to as the dividend payout ratio (DPR).

III. Empirical Analysis of the NCREIF Property Index

Back to Basics - Focus Primarily on Dividend Yield. In examining the performance of NPI components, dividend yield has historically been the primary driver of total return. As one of the asset classes represented in a multi-asset class portfolio, commercial real estate was traditionally expected to achieve total returns that mainly relied upon stable cash flows, and therefore to reduce overall portfolio volatility. NOI growth and price appreciation were thought of as smaller components of total return. Significant cap rate compression between 2003 and 2007 caused the appreciation component of real estate returns to be much higher than historical norms. As a result, investors during that time period tended to accept property underwriting that included aggressive appreciation assumptions mostly due to relatively high NOI growth expectations when calculating total return. Unfortunately, during the global recession and ensuing liquidity freeze, NOI growth and capital appreciation expectations were not realized.

As shown in Table 1, the historical long-term annual average total return and dividend yield of the NCREIF Property Index are about 7.5% and 4.9%,¹² respectively. Dividend yield historically comprised approximately two-thirds of the total return while NOI growth comprised about 25% of the total return. Historically, less than 10% of the total return is attributed to cap rate shifts. Further, the historical volatility (standard deviation) of the NCREIF Property Index total return since inception is about 8.3%,¹³ while the historical volatility of dividend yields since inception is only 1.0%, demonstrating that the majority of the total return volatility is generated through NOI growth and pricing volatility.¹⁴ This reinforces the main point that investors have historically relied on real estate to provide a predictable, stable cash flow (dividend yield) based upon in-place leases to provide downside protection and, secondarily, on growth in NOI. The cap rate shift effect has historically contributed the least to total return and exhibited the highest volatility.

Table 1: Long-Term Averages and Volatilities of the NCREIF Property Index

	Total Return	Dividend Yield	NOI Growth	Cap Rate Shift Effect
Annual Return Attribution	-	66%	25%	9.2%
Long-Term Annual Average	7.5%	4.9%	1.9%	0.7%
Standard Deviation	8.3%	1.0%	4.4%	7.0%

Source: NCREIF; BlackRock, Inc.; all data through 4Q 2009

[1] This is a general analysis of the real estate performance data prepared by BlackRock Realty Advisors, Inc. (“BRR”) and is not related to any specific products or services of BRR or any affiliate. Sources for statistics and other factual data included herein are maintained by the Research Department of BRR. Such data has not been verified by BRR and we can give no assurance that it is accurate or complete. Statements contained herein that are nonfactual constitute opinions of BRR, which are subject to change. Financial projections contained herein are estimates only and are based on assumptions. No assurance can be given that either the projections or the assumptions will prove to be accurate.

[2] The National Council of Real Estate Investment Fiduciaries (“NCREIF”) Property Index (the “NPI”) is based on the unleveraged performance of stabilized, income-producing U.S. apartment, industrial, office, hotel, and retail properties owned by tax-exempt entities reporting to NCREIF.

[3] The optimal time frame of “buying at the bottom” varies in each cycle. In the case of the early 1990s recession, it was up to almost 8 years after the economic recession.

[4] This presentation analyzes the impact of timing of investments on investment performance. There are many other factors that contribute to investment performance other than timing including, without limitation, property selection, market and submarket selection, property type, life-cycle, management effectiveness, leverage, joint venture relationships, etc.

[5] The NPI value peaked in Q1 2008.

[6] Although the NPI data is available back to 1978, acknowledging less stable sample size from 1978 to 1981, we calculate the long-term historical annual average total return is from 1982 to 2009.

[7] Real return is adjusted for inflation.

[8] Please refer to Glenn R. Mueller, “Understanding Real Estate’s Physical & Financial Market Cycles,” *Real Estate Finance*, 12:3, Fall, 1995 on the real estate market cycle.

[9] Please refer to Joseph L. Pagliari, Jr., “Inside the Real Estate Yield,” *Real Estate Review*, Fall 1991, pp. 48-53.

[10] For example, if at Time 0 a property produces \$5.50 of income and market cap rates are 5.5%, the property value is determined to be \$100 (\$5.50 / 5.5%). If one year later, the property produces income of \$6.00 and the market cap rate for said income is still 5.5%, the property’s value has fundamentally appreciated to \$109.09, an increase of 9.09% (\$109.09/\$100-1) due to income growth generated by the property through leases.

[11] To continue the prior example, suppose the property produces income of \$6.00 but cap rates have risen to 5.75%, up from 5.5% one year earlier. The property value would be \$104.35 (\$6.00/5.75%). The total appreciation of the property would be equal 4.74% (9.09% - 4.35%) as a result of fundamental appreciation due to NOI growth and an upward cap rate shift effect.

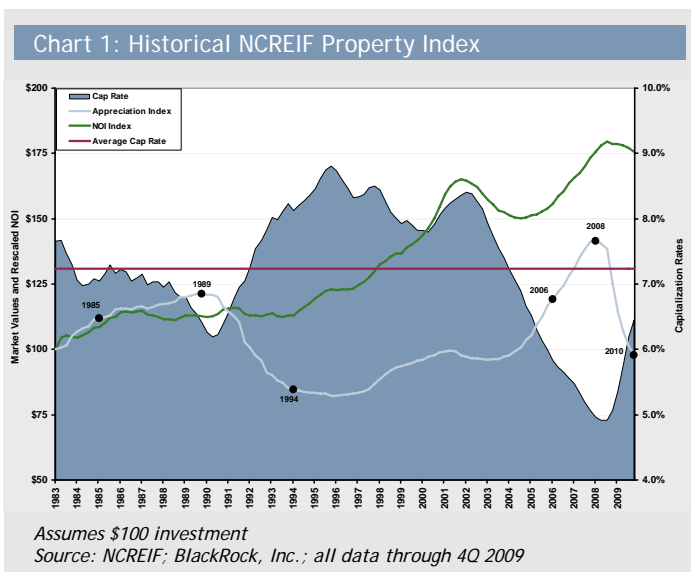
[12] See Footnote 6.

[13] One could argue that due to the appraisal smoothing effect, the true volatility of NPI could be much higher than shown in Table 1.

[14] It should also be noted that, in most cases, the standard deviation of the component of return (initial cash flow, earnings growth and cap rate shifts) are not additive.

A Review of Past Cycles. This section can provide insight into possible outcomes in the current cycle. In this analysis, various time periods are selected which resemble the run-up in real estate values from 2005-2007 and the subsequent repricing in 2010. The return performance over these comparable points in the cycle is examined below.

The early 1990s cycle was most similar to the current cycle, particularly with respect to credit market conditions. The early 1990s cycle experienced failures and distress among Savings and Loan Institutions (S&Ls), resulting in Resolution Trust Corporation (RTC) liquidations. As a result of the distress, commercial banks, insurance companies, and other financial institutions tightened credit standards during both cycles. However, there are important differences. First, during the early 1990s, the CMBS market did not exist. In fact, the CMBS market was created to facilitate liquidity as a result of the distress. Second, there is much lower construction in the current cycle than in previous cycles. Third, the run-up in values from 2005-2007 was more dramatic than in the previous cycle, and repricing from 2008-2010 took place much faster.¹⁵



A review of historical movements in value in the NCREIF Property Index demonstrates that 1985 and 1994 are comparable to the 2005-2007 and 2010 points in the cycle.¹⁶ With that, two 10-year pro formas were conducted based on the historical NPI performance starting in 1985 and 1994, respectively. “Upside” and “downside” periods are defined as times when returns or indicators beat the benchmark. Specifically, “upside” is defined as the historical probability of total return, dividend yield, NOI growth or cap rate shift effect over the 10-year period being greater than those of NCREIF long-term historical averages (1983-2009). Similarly, “downside” is defined as the historical probability of total return, dividend yield, NOI growth or cap rate shift effect over the 10-year period being lower than those of NCREIF long-term historical averages (1983-2009).

As shown in Table 2, assuming that the NCREIF historical total return is a proxy for an acquisition made in 1985 with a 10-year holding period, outperformance occurred in only five out of the ten years. Conversely, assuming a similar 10-year holding period for a 1994 acquisition, outperformance occurred in seven out of the following ten years, with only three out of the ten years underperformed. The likelihood of an acquisition completed in 1994 outperforming the benchmark’s historical average is much higher. Simply put: there was more upside to a 1994 acquisition than a 1985 acquisition.

An examination of the three key components of total return provides a better understanding of the drivers of upside and downside risk and return attribution. As shown in Table 3, the reason there was more upside potential to a 1994 acquisition was because the dividend yield beat the benchmark’s historical average in each of the following 10 years. Conversely, the majority of the 10 years following 1985 experienced lower dividend yields (7 out of the 10 years) and lower NOI growth (6 out of the 10 years) than the NCREIF historical annual averages. As previously discussed, dividend yield generated more than half of the NPI annual average total returns. It is not a surprise to see that there was a greater chance of underperformance for a 1985 acquisition when you consider that dividend yields in 8 out of the 10 years following the 1985 acquisition were lower than the NCREIF historical annual average.

Table 2: Historical Probability of Outperformance or Underperformance Relative to 10-Year NOMINAL Annual Average Return Based on NCREIF Property Index Starting in 1985 and 1994

	Total Return		Dividend Yield		NOI Growth		Cap Rate Shift Effect	
	1985-1994	1994-2003	1985-1994	1994-2003	1985-1994	1994-2003	1985-1994	1994-2003
Probability of Outperformance	50%	70%	30%	100%	40%	60%	50%	50%
Probability of Underperformance	50%	30%	70%	0%	60%	40%	50%	50%
Historical Average	7.5%		4.9%		1.9%		0.7%	

Source: NCREIF; BlackRock, Inc.

[15] During the early 1990s cycle, the NPI took about 6 years (from 1Q 1990 to 4Q 1995) for the NPI to be fully repriced. In this cycle, it has experienced a more rapid re-pricing in the past two years. Most institutional investors believe the NPI is at or near the bottom. In other words, the repricing process is likely to take less than three years in this cycle.

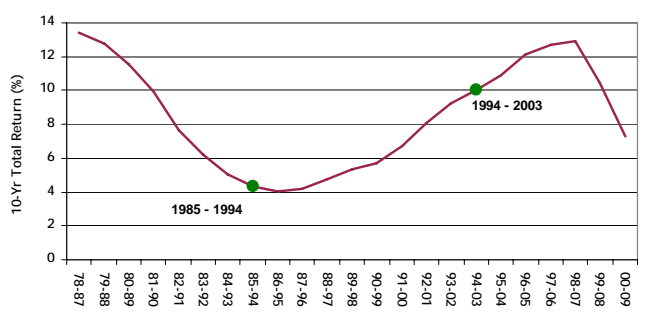
[16] In order to pinpoint years comparable to the 2005-2007 and 2010 points in the cycle, historical value appreciation in the NCREIF Property Index was examined. Market values peaked in 1Q 2008 during this cycle and in 4Q 1989 during the previous cycle. After indexing appreciation returns from those peaks, we identify the late 1984 and mid-1994 as the equivalent points of 2006 (the 2005-2007 mid-point) and 2010, respectively. For simplicity purposes, we rounded up the timing to the whole year, i.e. the equivalent points of 2006 and 2010 are 1985 and 1994. We then ran two 10-year pro formas based on the historical NPI performance starting in 1985 and 1994, respectively.

A Review of Past Cycles, cont. The same exercise can be conducted on a real (inflation-adjusted) basis, which excludes the impact of abnormal inflation on total returns. As shown in Table 3, analyzing real returns makes our case for the outperformance of the 1994 acquisition even stronger. Real total returns for acquisitions made in 1994 outperformed the NCREIF historical annual average real total return in eight years out of the following 10 years, while there was outperformance in only three out of the 10 years following the 1985 acquisition. Most importantly, for acquisitions made in 1994, both real dividend yields and real NOI growth beat the benchmark's historical averages in 10 out of the 10 years. Moreover, real pricing appreciation also beat the benchmark's long-term average seven out of the 10 years. In other words, there was more upside in each of the three return components on a real (vs. nominal) basis following the 1994 acquisition than the 1985 acquisition.

Charts 2 and 3 illustrate another way to review the upside and downside potential of the two acquisitions presented in Section III using the NPI historical return as a proxy. As shown in Chart 2, the 10-year annual average total return across the 1985-1994 period was substantially lower than that of the 1994-2003 period. In addition, the volatility of the 10-year annual return across the 1985-1994 period was higher than that of the 1994-2003 period, as shown in Chart 3.

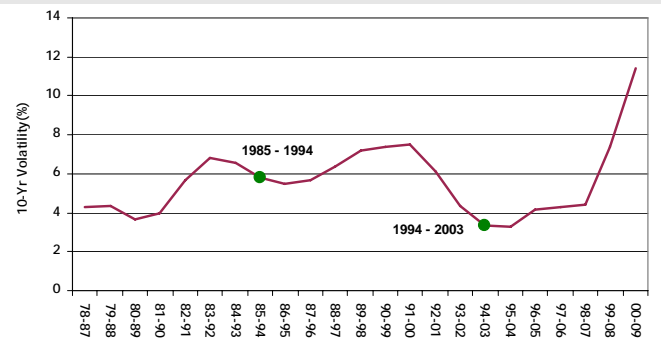
While history does not necessarily repeat itself, the implications of the past cycle should not be ignored. The analysis above suggests that investing close to a cyclical peak and shortly before "correction" introduced more downside risk to returns, while investing after a market correction introduced more upside potential to returns.

Chart 2: Rolling 10-Year Annual Average Total Return of the NCREIF Property Index



Source: NCREIF; BlackRock, Inc.; all data through 4Q 2009

Chart 3: Volatility of the Rolling 10-Year Annual Average Total Return of the NCREIF Property Index



Source: NCREIF; BlackRock, Inc.; all data through 4Q 2009

Table 3: Historical Probability of Outperformance or Underperformance Relative to 10-Year REAL Annual Average Return Based on NCREIF Property Index Starting in 1985 and 1994

	Real Total Return		Real Dividend Yield		Real NOI Growth		Real Cap Rate Shift Effect	
	1989-1998	1994-2003	1989-1998	1994-2003	1989-1998	1994-2003	1989-1998	1994-2003
Probability of Outperformance	40%	80%	70%	100%	60%	100%	40%	70%
Probability of Underperformance	60%	20%	30%	0%	40%	0%	60%	30%
Historical Average	4.3%		1.9%		-1.1%		-2.2%	

Source: NCREIF; BlackRock, Inc.; all data through dates displayed in each column

Historical Overview of NCREIF Property Index. Having studied how private equity real estate performed during the early 1990s (the recent cycle with the closest resemblance to the current one), the next step is to take a broader look into the NPI history in order to observe how private equity real estate performed over time. First, assume that starting in the early 1980s investors made a new investment every year which they held for 10 years. Second, assume that the NPI is a proxy of the performance of those 10-year hold acquisitions. Table 4¹⁷ shows the total returns, total return attributions (total return components), pricing characteristics, and risk measures of select 10-year holding periods. As shown below, higher than the historical average dividend yields and NOI growth were observed among acquisitions completed in the period of 1992-1999. In other words, acquisitions made during a real estate downturn or a couple of years after the downturn exhibited higher dividend yields and earnings growth during 10-year hold periods relative to NCREIF long-term averages.

Historically, higher dividend yields have been achieved when cap rates or dividend payout ratios have been higher than their historical long-term averages. The key factor that leads to an increase in cap rates is the increase in the risk premium for investing in real estate.¹⁸ The re-pricing process that took place in the early 1990s and during this past cycle is an example of this effect. Additionally, dividend payout ratios often rise when real estate owners postpone as many capital expenditures as possible to preserve cash, particularly during a downturn. A similar phenomenon is being experienced today.

It is important to observe and understand the dynamics during the time periods when higher than average earnings growth is achieved. The space market began to see stronger than average earnings growth about 2-3.5 years after the previous two recessions began. In the past, this stronger than average earnings growth has lasted for an additional 3-5 years (see Appendix 3 for more details). Looking forward, an above historical average NOI growth is likely to occur in another year or two due to the projected slow economic recovery, even though the recession started slightly more than two years ago. The implication for investors coming out of the recent recession is that investing during the market downturn (2008-2010) and/or several years immediately afterwards¹⁹ suggests a higher probability of beating the long term average benchmark since the investments are likely able to capture both higher dividend yields and stronger NOI growth.

Table 4: The NCREIF Property Index Performance Based on Each 10-Year Holding Periods

From To	Mar-82 Dec-91	Mar-84 Dec-93	Mar-86 Dec-95	Mar-88 Dec-97	Mar-90 Dec-99	Mar-92 Dec-01	Mar-94 Dec-03	Mar-96 Dec-05	Mar-98 Dec-07	Mar-00 Dec-09	Mar-82 Dec-09
Return Attribution											
Initial Yield (%)	7.9	7.8	7.3	7.3	6.8	7.1	8.6	8.9	8.8	8.7	7.9
Dividend Pay-Out Ratio (%)	62.2	63.8	63.9	65.7	67.5	69.5	71.3	71.7	70.2	69.0	67.1
Dividend Yield (%)	4.9	5.0	4.6	4.8	4.6	5.0	6.1	6.3	6.1	6.0	5.3
Earnings Growth (%)	1.7	1.2	1.1	1.9	2.4	3.8	2.6	2.3	3.1	1.9	2.2
Fundamental Return (%)	6.6	0.1	0.1	6.7	7.0	8.8	8.8	8.7	9.3	7.9	7.5
Cap Shift Effect (%)	1.0	5.0	4.0	-1.9	-1.3	-0.7	1.3	3.4	3.6	-0.6	0.1
Total Return (%)	7.7	5.1	4.0	4.8	5.7	8.1	10.1	12.1	12.9	7.3	7.5
Pricing Characteristics											
Initial Cap Rate (%)	7.1	7.3	7.2	7.0	6.4	7.1	8.2	8.8	8.5	7.8	7.1
Terminal Cap Rate (%)	7.1	8.2	8.8	8.5	7.8	8.4	7.4	6.0	5.1	6.5	6.5
Risk Measures											
Annual Volatility (%)	4.6	6.5	5.5	6.4	7.4	6.1	3.3	4.1	4.4	11.4	8.1
Sharpe Ratio	-0.3	-0.5	-0.6	-0.4	-0.1	0.4	1.4	1.7	1.9	0.3	0.1

Source: NCREIF; BlackRock, Inc.

[17] For display purposes, the table only shows a 10-year investment horizon in a two year interval. Please refer to Appendix 2 for the year by year analysis.

[18] See section II and Appendix 1 of this paper for more details on the factors that impact cap rate expansion and/or compression.

[19] See footnote 3.

IV. Outlook

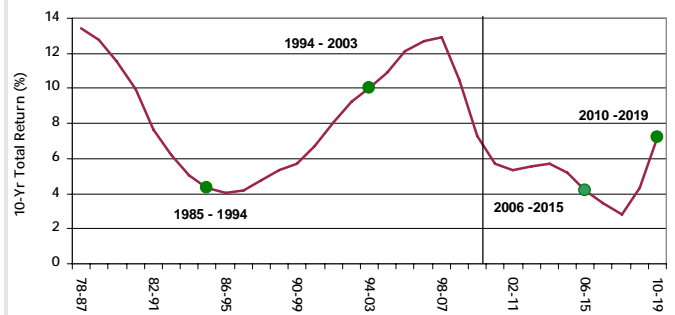
Based on BlackRock's latest NPI return forecast,²⁰ 10-year total returns for an acquisition made in 2006 (NPI returns from 2006 to 2015) and 2010 (NPI returns from 2010 to 2019) were estimated, and the results are also illustrated in Chart 4. The 10-year annualized average total return of a 2006 acquisition is estimated to be substantially lower than that of a 2010 acquisition, and a 2010 acquisition is projected to have a higher risk adjusted return than a 2006 acquisition. This trend is very similar to trends for acquisitions made in 1985 and 1994, respectively. As shown in Chart 4, the 10-year annual average total return was higher in the 1994 acquisition than that of the 1985 acquisition. Despite the fact that calling "a bottom" can only be confirmed through hindsight, historical trends reinforce the conventional wisdom that buying near or a reasonable period after the bottom of a market cycle has more attractive upside than downside risk and return attributes, particularly for investors with a long-term investment horizon.

To reinforce this idea, Appendix 4 shows that there were only two short periods so far in the NCREIF Property Index history that real estate returns were negative when properties were acquired and disposed in any year between 1978 and 2009. The returns were negative only when properties were acquired between 1989 and 1992 and then quickly disposed between 1991 and 1994, or acquired in 2007-2009 and then sold in 2008-2009. Hence, the implication for real estate investors in today's environment is that time-diversified investing has proven to be the best way to maximize returns while reducing risk for investors with a long-term horizon.

V. Conclusion

As illustrated in the previous sections, buying near or several years after the bottom (like the current stage of the cycle) provides a higher probability of outperforming the benchmark thanks to higher dividend yields and a repricing of the risk premium in the form of higher initial cap rates. It is usually easier to identify a market downturn after, but not before, the market has shown noticeable improvements from the trough. A prudent investor with a long-term investment horizon should consider time-diversified investing and begin allocation to real estate over a period of time once the market appears to be at or near a bottom and continue for a reasonable period after the bottom. Even if pro forma IRRs underwritten today appear similar to those underwritten at the peak of the cycle, investors who start buying for the long-term have a higher likelihood of experiencing upside and a lower likelihood of experiencing downside. It should be noted that other factors, however, such as property type, market and asset selections, life-cycle, and leverage are just as critical to achieving investment outperformance.

Chart 4: Rolling 10-Year Annual Average Total Return of the NCREIF Property Index



Source: NCREIF; BlackRock, Inc.

[20] Please refer to BlackRock Real Estate Equity 4Q 2009 report.

Appendix 1: More details on cap rate and cap rate shift effects

Key factors that impact cap rate expansion or compression:²¹

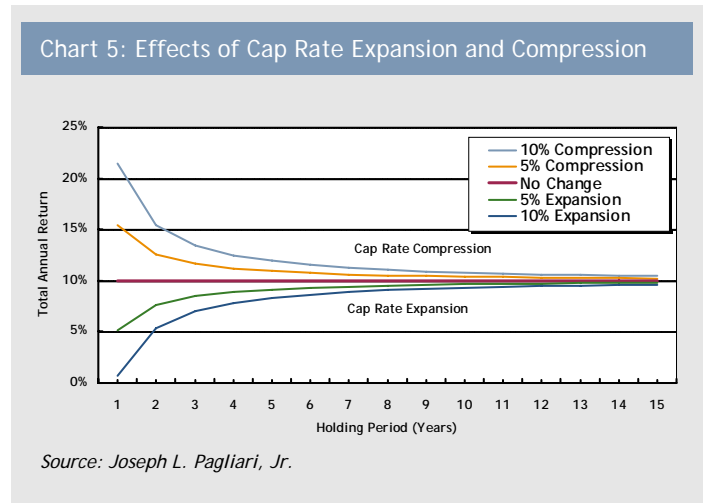
1. The Opportunity Cost of Capital (OCC)
 - This comes from the capital markets;
 - Returns that investors are expected to earn in alternative asset classes relative to the risk-free rate;
 - Higher real interest rates or higher expected returns in other types of investments will require higher expected returns in real estate, and therefore higher cap rates, other things being equal.
2. Growth expectations in the property's future cash flows
 - This comes from the space markets;
 - The expected growth in net operating income over the coming years;
 - Higher (realistic) growth expectations will allow a lower cap rate, as investors will be willing to pay more today for a given amount of current net income given the income growth prospects;
3. Risk perceptions and preferences among investors regarding property
 - This comes from both the space market and the capital market (risk is relative);
 - The risk perceived in investment in real estate, and the investor's risk appetite;
 - Greater risk, and greater sensitivity to risk, will require higher cap rates (lower asset values per dollar amount of the current income).

As shown in Chart 5, effects of Cap Rate Expansion and Compression have large impacts in the short-run and little impact in the long-run.

Appendix 2: The NPI Total Return Components Review Based on 10-Year Holding Periods

From To	Mar-82 Dec-91	Mar-83 Dec-92	Mar-84 Dec-93	Mar-85 Dec-94	Mar-86 Dec-95	Mar-87 Dec-96	Mar-88 Dec-97	Mar-89 Dec-98	Mar-90 Dec-99	Mar-91 Dec-00	Mar-92 Dec-01	Mar-93 Dec-02	Mar-94 Dec-03	Mar-95 Dec-04	Mar-96 Dec-05	Mar-97 Dec-06	Mar-98 Dec-07	Mar-99 Dec-08	Mar-00 Dec-09	Mar-82 Dec-09
Return Attribution																				
Initial Yield (%)	7.9	7.2	7.8	7.2	7.3	7.0	7.3	6.7	6.8	6.0	7.1	8.0	8.6	8.5	8.9	8.9	8.8	8.3	8.7	7.9
Dividend Pay-Out Ratio (%)	62.2	63.6	63.8	63.3	63.9	64.9	65.7	66.7	67.5	68.7	69.5	70.6	71.3	72.4	71.7	71.2	70.2	69.2	69.0	67.1
Dividend Yield (%)	4.9	4.6	5.0	4.5	4.6	4.5	4.8	4.5	4.6	4.1	5.0	5.7	6.1	6.2	6.3	6.3	6.1	5.8	6.0	5.3
Earnings Growth (%)	1.7	0.7	1.2	1.0	1.1	1.0	1.9	1.9	2.4	2.9	3.8	3.1	2.6	2.2	2.3	3.1	3.1	2.6	1.9	2.2
Fundamental Return (%)	6.6	5.3	0.1	0.0	0.1	0.0	6.7	6.4	7.0	7.0	8.8	8.7	8.8	8.4	8.7	9.4	9.3	8.4	7.9	7.5
Cap Shift Effect (%)	1.0	0.9	5.0	4.3	4.0	4.2	-1.9	-1.0	-1.3	-0.3	-0.7	0.5	1.3	2.4	3.4	3.3	3.6	2.1	-0.6	0.1
Total Return (%)	7.7	6.2	5.1	4.4	4.0	4.2	4.8	5.4	5.7	6.7	8.1	9.3	10.1	10.9	12.1	12.7	12.9	10.5	7.3	7.5
Pricing Characteristics																				
Initial Cap Rate (%)	7.1	7.3	7.3	7.1	7.2	7.1	7.0	6.8	6.4	6.4	7.1	7.8	8.2	8.4	8.8	8.3	8.5	8.0	7.8	7.1
Terminal Cap Rate (%)	7.1	7.8	8.2	8.4	8.8	8.3	8.5	8.0	7.8	8.1	8.4	8.1	7.4	6.7	6.0	5.6	5.1	5.1	6.5	6.5
Risk Measures																				
Annual Volatility (%)	4.6	6.8	6.5	5.8	5.5	5.7	6.4	7.2	7.4	7.5	6.1	4.3	3.3	3.3	4.1	4.3	4.4	7.4	11.4	8.1
Sharpe Ratio	-0.3	-0.4	-0.5	-0.6	-0.6	-0.6	-0.4	-0.2	-0.1	0.1	0.4	0.8	1.4	1.7	1.7	1.8	1.9	0.8	0.3	0.1

Source: NCREIF; BlackRock, Inc.; all data through 4Q 2009



[21] Please refer to Joseph L. Pagliari, Jr. "Inside the Real Estate Yield," *Real Estate Review*, Fall 1991, pp. 48-53

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