

INFLATION, INFLATION, INFLATION - ARE REITS THE ANSWER?

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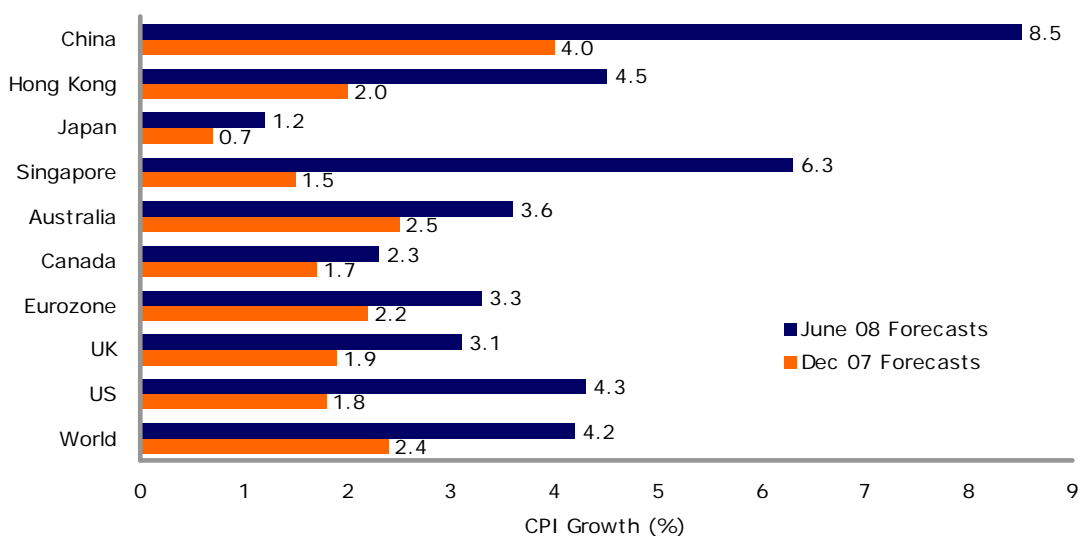
ING Australia

Significant events and developments to the global economy and capital markets over the past 18 months have seen inflation become a major factor for all asset class expected returns.

This research paper examines whether there is a significant relationship between inflation and the return characteristics of an investment in commercial real estate, with an objective of clarifying whether real estate acts as an inflation hedge.

The increase in inflation over the last 12 months can be seen in Exhibit 1 below:

Exhibit 1: Year-on-Year Forecasted Change in Inflation



Source: ING Economics, ING Research & Strategy, as of June 16, 2008

With this increase in global inflation expected to continue, investors are looking at assets that provide investment characteristics which can hedge against inflation. Unlike most equities and fixed income investments, global real estate securities provide an income hedge against inflation, and as such might be expected to outperform these asset classes in high inflationary environments. In accordance with this, an increased allocation to global listed property companies as a strategic position could potentially preserve capital and benefit investors.

While the use of Australian listed property securities in Australian investors' portfolios has been prevalent over the last decade, the use of global REITs is a more recent phenomenon. This analysis

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has a particular emphasis on US REIT data, as the US REIT market is the largest and most developed in the world and currently dominates global listed property investing.

Scope of study

The relationship between inflation and direct property return series have been examined in the U.S. from 1988-2008 using NCREIF data which is the most widely used direct property benchmark in the U.S. For listed property companies, which have become mainstream more recently, total returns of U.S. REITs have been examined from 1994-2008 using returns from the NAREIT Equity Index and income returns as provided by independent research firm Greenstreet Advisors. The scope is limited to the U.S. market in order to provide focus in what is a significant market globally both in the direct and listed property markets.

Conclusions of study

The income component of real estate proves to have a significant statistical ability to provide a hedge against inflation among both direct and listed real estate. This is shown using a regression analysis of income returns for both direct and listed property companies against inflation. The ability to hedge inflation is found to be generally high among the retail property types—shopping centers and malls—as well as apartments in direct real estate. This is intuitively appealing given that lease structures in the retail property type are generally designed to pass on costs over time to tenants, generally via an annual indexation to inflation. Additionally, apartments have one-year lease terms and are able to reflect an increased cost environment quickly. Regression analysis shows, however, the relationship between inflation and the total return of real estate to be less conclusive, with weak relationships both for direct and listed property total returns. This suggests that other factors are at work which might cause the capital component of total return to offset many of the benefits from an income return.

Rationale for time period of study

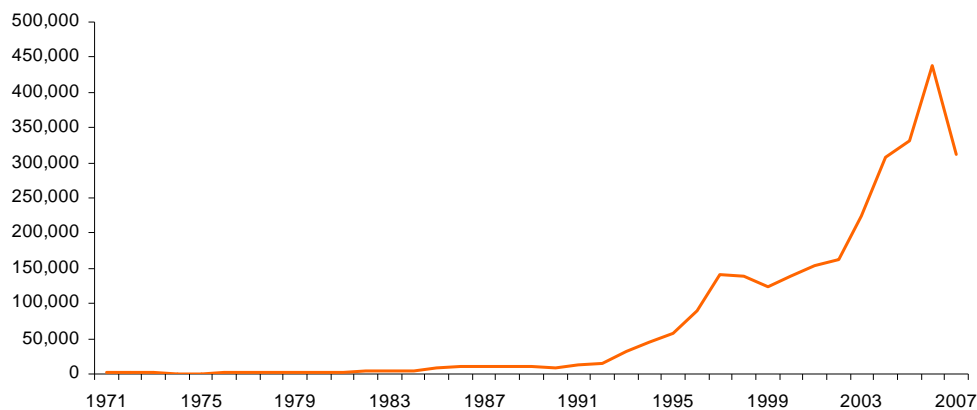
Direct property trends are examined from 1988-2008 using NCREIF National Property Index (NPI) as the flagship index of U.S. private commercial property. The rationale for using this time period is primarily that it is sufficiently long to capture several cycles in property and excludes the early years of NCREIF data which arguably was thinly representative of direct property.

U.S. listed property returns are examined from 1994-2008 since 1994 is the beginning of what might be considered the “modern REIT era” with respect to size of company, liquidity and specialization by property type. As background, the benchmark for measuring listed real estate performance for U.S. REITs is the NAREIT index which traces its history from 1972. The market capitalization, however, is thin during much of the early years of the Index (pre-1994). Specifically, at the beginning of 1973, the NAREIT Index tracked the performance of 17 equity REITs with an aggregate market capitalization of US\$377 million. This number declined to 12 companies by the end of 1975. REITs were essentially small to micro-cap companies, and typically invested across all property types and thus were diversified. By the end of 1993, the equity market capitalization of equity REITs in the U.S. had grown to approximately US\$26 billion and by the end of 2007 to US\$289 billion comprising 118 REITs. Given the small size of the index and thinness of the data set in the early years, it appears reasonable to begin an analysis of REIT performance in 1994 which in many respects is the beginning of the REITs

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becoming a mainstream asset class with a broader and deeper representation by property type and liquidity. Exhibit 2 traces the growing market capitalization of US REITs.

Exhibit 2: Evolution of US REIT Structure—Aggregate Equity Market Capitalization of U.S. REITs



Source: NAREIT

Methodology and data

The following data sets have been used to conduct regression analysis on the various return series:

- Quarterly return data from the NCREIF National Property Index (NPI) including total return and income return by property type
- Monthly total returns derived from the NAREIT Equity Index which tracks total returns for U.S. Real Estate Investment Trusts (REITs). The NAREIT Equity Index is the industry standard for REIT returns in the U.S. as defined and tracked by the National Association of Real Estate Investment Trusts (NAREIT).
- Monthly and annual statistics of inflation derived from the Bureau of Labor Statistics Consumer Price Index (CPI) for urban consumers.
- Annual income returns using same-property Net Operating Income (NOI) Returns derived by Greenstreet Research. Greenstreet is a well regarded U.S.-based independent research firm specializing in the coverage of U.S. REITs.

Additionally, lease structures have been examined to determine which structures are able to pass on inflationary pressures to the tenant more effectively.

Past research

Real estate's role as a hedge against inflation has traditionally been studied from the standpoint of direct real estate returns and not listed company total returns. Building off Fisher's pioneering work [Fisher, I. (1930) *The Theory of Interest*] which suggested that nominal returns in all asset classes should equal the real plus anticipated inflation, there have been several studies exploring the link between inflation and real estate. Most research has been directed at private commercial real estate largely because it historically constitutes the bulk of investable property stock and because listed real

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estate securities only emerged as a mainstream asset class in the early 1990s. Listed real estate now is a larger investment pool. The academic research generally suggests that directly owned real estate can provide some hedging capability versus inflation but that analysis remains hindered by imperfectly constructed indices of real estate total returns. More specifically, the industry standard for direct market returns in the U.S. tends to be lagged, by definition, since it is appraisal-based. Additionally, it has been disproportionately represented by the office property type [the NCREIF National Property Index (NPI) is the flagship index of US private commercial property derived from quarterly time series of a large pool of properties and covers four main property types – apartments, industrial, office and retail].

In the listed real estate space, there has been less research on the relationship with inflation and what there is suggests a weak relationship between the two. Early research such as [Brueggeman, W., Chen, A and Thibodeau, T (1994) Real Estate Investment Funds: Performance and Portfolio Considerations, AREUEA Journal, 12] and [Gyourko, J. and Linneman, P. (1988) Owner-Occupied Homes, Income-Producing Real Estate and REIT as Inflation Hedges, Journal of Real Estate Finance and Economics, 1] suggested a non-significant relationship between inflation and US REIT returns. Later studies provide support to this conclusion [Ling, D and Naranjo, A. (1997) Economic Risk Factors and Commercial Real Estate Returns, Journal of Real Estate Finance and Economics, 14 and Glascock, J. Lu, C and So, R., (2002) REIT Returns and Inflation: Perverse or Reverse Causality Effects? Journal of Real Estate Finance and Economics, 4].

The mixed results from academic research perhaps reflect the difficulty of analyzing appraisal-based data in the case of direct real estate and, in the case of listed property companies, a quickly evolving and growing asset class. Specifically, there were significant structural changes that occurred among U.S. REITs beginning in the early to mid 1990s which saw the advent of well-capitalized, internally advised, larger real estate companies focused increasingly by property type. In the following analysis, we examine the relationship between inflation and U.S. real estate both in the direct markets as well as the listed markets.

Results*Income component of total return—direct real estate*

Exhibit 3 displays the results of a regression analysis of the income returns from direct property against inflation both overall for all property types as well as individually by property type. The analysis is performed on annual data from 2Q1988-1Q2008. Conclusions are as follows:

- Overall income returns for U.S. direct property provide a statistically significant hedge against inflation with an R-squared of 0.32 which indicates that income returns for direct property materially reflect a unit increase in inflation. More specifically, the income component of total return is able to capture nearly one-third of a one percent increase in inflation.
- Sector specific analysis reveals that all property types provide a strong hedge against inflation with R-squared statistics all 0.32 or higher with exception of industrial. Again, this indicates that the property types demonstrate an ability to capture a portion of increases in inflation via the income component of total return.

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- Malls show the highest R-squared statistic, indicating an above average ability to capture increases in inflation via increases in property level income.

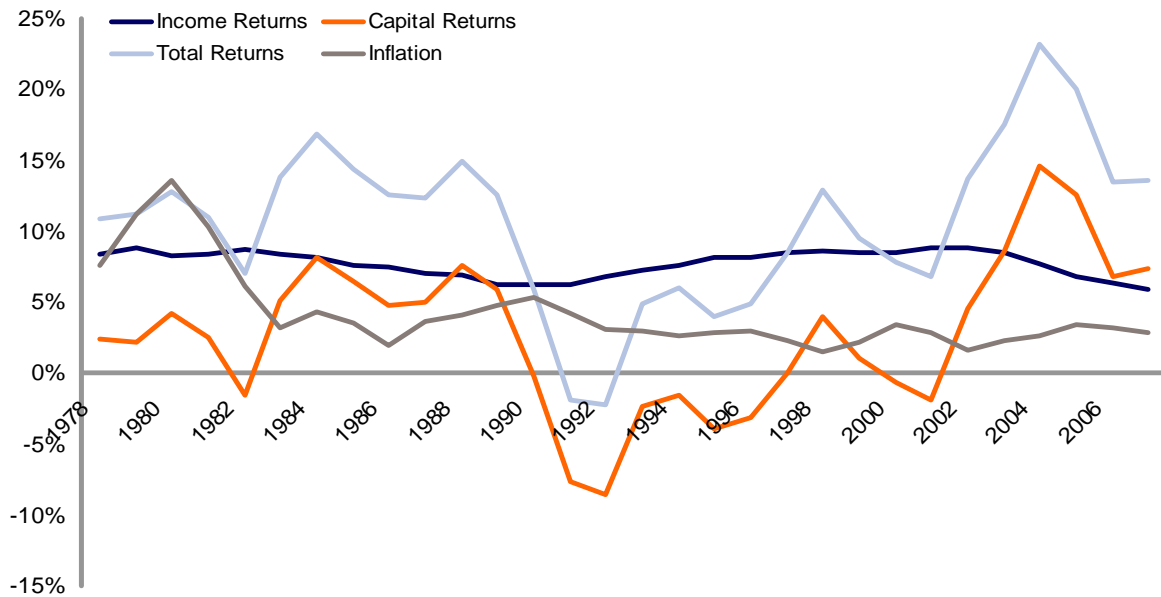
Exhibit 3: R-squared Statistics of Income Returns and Inflation, Direct Property 1Q1988-1Q2008

All Property	Office	Apartments	Industrial	Malls	Shopping Centers
0.32	0.34	0.38	0.21	0.47	0.32

Source: NCREIF, BLS, ING Clarion RE Securities

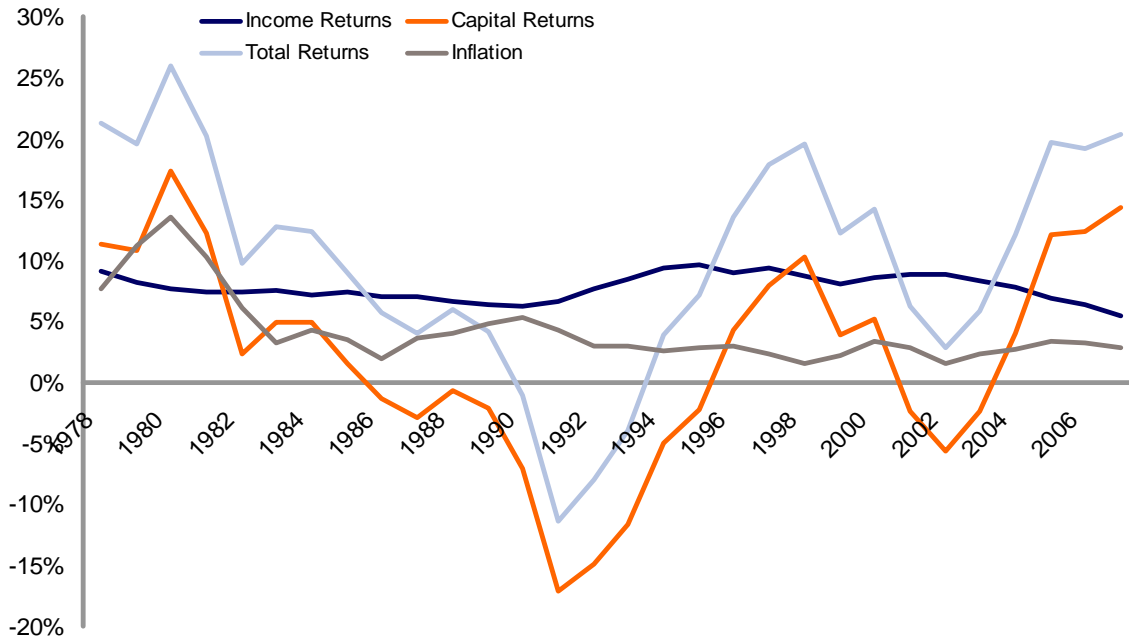
The charts below show the relationship between inflation and various return streams for the two most dominant property types, office and retail (malls and shopping centers combined), including income return, capital return and total return. As shown, the income component for each property has generally remained steady over the years, with growth rates generally in excess of inflation.

U.S. Retail and Inflation



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U.S. Office and Inflation



Income component of total return – listed real estate

Exhibit 4 displays the results of a regression analysis of the income returns from listed property against inflation both overall for all property types as well as individually by property type. The analysis is performed on monthly data from 1994-2007. Conclusions are as follows:

- Overall income returns for U.S. REITs provide a strong hedge against inflation with an R-squared of 0.71 which indicates that income returns for listed companies substantially reflect a unit increase in inflation. More specifically, the U.S. REITs are able to capture nearly three-quarters of a one percent increase in inflation via an increase in net operating income.
- Sector specific analysis reveals that all property types provide a strong hedge against inflation with R-squared statistics all 0.40 or higher. Again, this indicates that the property sectors generally capture a material proportionate increase in inflation via the income component of total return.
- Retail property types have particularly high R-squared statistics, indicating an above average ability to capture via income increases in inflation.

Exhibit 4: R-squared Statistics of Income Returns and Inflation, Listed Property 1994-2007

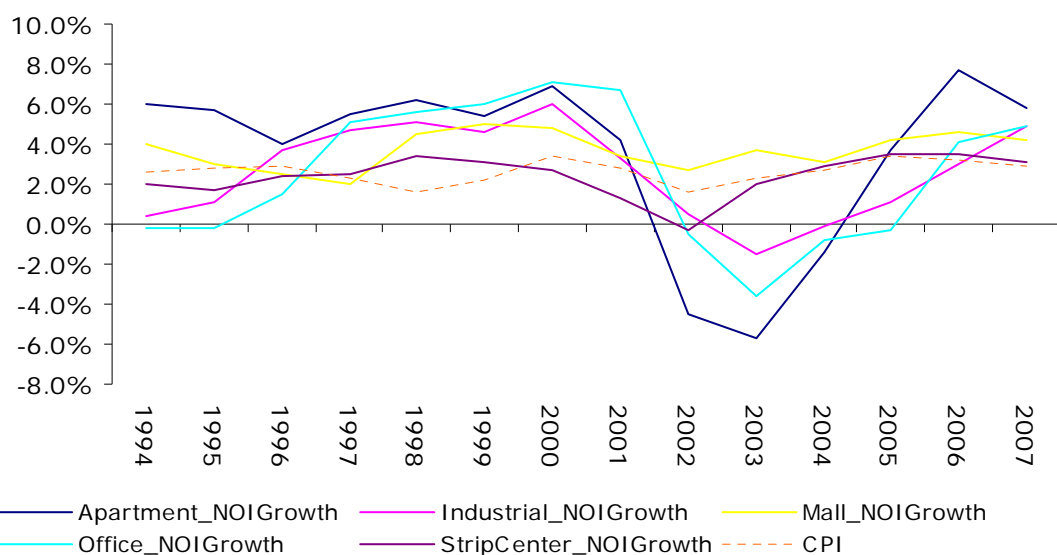
All Property	Office	Apartments	Industrial	Malls	Shopping Centers
0.71	0.40	0.46	0.60	0.92	0.87

Source: Greenstreet Research, BLS, ING Clarion RE Securities

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Malls and shopping centers in this analysis particularly emerge as an effective hedge against inflation via associate increases in net operating income. This is perhaps not surprising as retail leases are generally structured to increase by inflation or CPI each year. Industrial, apartment and office income returns also show a significant ability to reflect inflationary pressures, although less so than the retail property types, perhaps as the result of a significant decrease in net operating income in the 2000-2003 timeframe. Exhibit 5 displays the performance of U.S. REIT net operating income by property type versus inflation over the period of our study and confirms the stability and tracking of net operating income for the mall, shopping center and industrial property types over apartments and office. Note that the R-squared statistics for listed property are higher than those for direct property, although each clearly demonstrate a statistically significant relationship.

Exhibit 5: NOI Growth and Inflation, 1994 - 2007



Source: Greenstreet Research, BLS, ING Clarion RE Securities

Total returns

Regression analysis on total returns for direct property resulted in a weak relationship to inflation for both direct property and listed property. This suggests that forces are at work which cause the capital component of total return to cause total return to statistically relate poorly to inflationary trends. This is consistent with research performed primarily in direct real estate which must deal with complicating factors including appraisal-based total return data and as described earlier in this paper.

An analysis of real estate's hedging capacity against inflation should also be viewed in context of other mainstream asset classes. Over the analysis period, listed equity and fixed income investment classes proved to have an insignificant relationship to inflation. Regressions were run versus the S&P 500, Russell 2000 (which is an index used for U.S. small-cap stocks) and the Lehman Aggregate Bond Index (U.S. bonds).

Underlying lease structures

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The structure of lease terms determine to a large extent how quickly inflationary trends are captured by owners of property. Landlords economically will reflect increased costs of operating a building over time so the key question is the timing of doing this. The particular characteristics which enable a quick economic reflection of inflationary pressures include, but are not limited to, some combination of the following:

- Shorter lease lengths since lease terms upon renewal are typically renewed at market or close to market depending on the terms of the original lease (i.e. “95% of market”).
- Annual escalations in the rent either pegged to the consumer price index or stepped in a fashion designed to keep pace with anticipated inflation.
- The fact that increases in expenses are typically passed through to tenants in the U.S. for many property types (but especially office) as part of a typical “gross lease” structure. In such a structure, expenses are benchmarked on a per square foot basis during the first year of the lease with any subsequent increases in total expenses beyond this number borne by the tenant.

As seen below, lease terms in certain major markets globally are generally designed to be able to pass on increased costs fairly quickly. In fact, many of the lease terms have a specific requirement to be increased by inflation each year.

Characteristics of leases which hedge against inflation

	Office	Retail
US	5-10 year lease Fixed bumps Pass-through of expense increases	5-10 year leases in-line, 15-20 year anchor Annual CPI increases or 2-4% range
Australia	5-10 year leases 3-5% fixed bumps Mid-term review at year 5 for longer leases	5-10 year leases specialty, 15-20 year anchor Annual CPI increases or 2.75-3.5% range
France	3/6/9 leases (tenant has option to mark to market every three years) Annual inflation indexation	3/6/9 leases (tenant has option to mark to market every three years) Annual inflation indexation
Netherlands	5-10 year leases Annual inflation indexation	5-10 year leases, longer for anchors Annual inflation indexation
U.K.	10-15 year leases Upward-only reviews every five years No annual indexation	10-20 year leases Upward-only reviews every five years No annual indexation

A more comprehensive compilation of lease terms by property type is included as Appendix A.

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Appendix A

	Office	Retail	Industrial	Apartments
United States & Canada	Generally, 5-7 years for suburban office leases, 7-10 for downtown markets with per annum escalations as negotiated (anywhere from flat to fixed stepped bumps which may or may not exceed inflation). Increases in expenses are passed through to the tenant annually.	Retail is 5-10 years for smaller inline tenants, 10-20 years for large anchors. Most leases have annual increases of 2-4 percent (not specifically tied to CPI anymore in most cases). Increases in expenses are passed through to the tenant.	Generally 3-7 year leases. The tenant generally bears the cost of any increase in expenses. Industrial lends itself to "net lease" structures wherein the tenant bears all of any increase in expenses save extraordinary capital expenses (ie new roof or parking lot).	Annual leases with increases determined by the landlord which give the landlord the ability to mark to market.
Australia	Generally 5-10 year leases. As a general rule, leases will incorporate annual increases of anywhere from 3 to 5% (depending on the rental outlook when the deal was struck). For a deal longer than 5 years, there is typically a mid term review to market, generally with a cap and collar (e.g. +10% or -10% maximum rent move).	For specialty stores, leases are generally 5 years. Reviews are either CPI – based (e.g. WDC's specialty reviews are CPI +1.5%-2.0% pa) or fixed annual uplifts (e.g. CFX's 4%-5% annual increases). For anchors, leases are generally 15-20 years. Supermarket tenancies generally incorporate turnover provisions while department store leases are generally flat throughout the lease term.	Pre-commitment lease terms are typically 7-9 years. Leases are generally either fixed annual increases (in the range of 2.75% - 3.5%) or CPI.	Annual lease terms-- note that apartments are not typically an institutional investment class with yields in the 2-3% range.

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Asia ex Japan	<p>Generally, 2-3 year leases for single-floor or smaller tenants. As a result, leases are generally marked to market quickly. Multi-floor tenants typically engage in longer leases (6 years) with rental review(s) during the lease term (usually mark to market, cap/collar subject to negotiation).</p>	<p>2-3 year leases for regional and suburban retail centers for general retail tenants. Leases are longer (5-6 years) for anchor or major tenants (e.g., dining). Rents for general retailers in established mall are typically base rents + percentage of turnover. High street retail shops (e.g., Hong Kong) leases are flat throughout.</p>	<p>Generally, 2-3 year leases for manufacturing space and warehouse/logistic facilities. As a result, leases are generally marked to market quickly. There were incidences of lease-back where rentals are CPI linked.</p>	<p>Generally 2 year lease but option to break after 1 year.</p>
Japan	<p>Generally 2 year leases. Tenants tend to have more power upon rent negotiations. Some leases in new buildings in Tokyo have 3-6 year fixed term lease contracts.</p>	<p>2-3 year leases for urban retail and 10 years + contracts for suburban anchor or major tenants. Some of the long term leases are subject to rent renewal every 2-3 years.</p>	<p>Leases are generally long term 5-20 years with rent revision every 2-3 years.</p>	<p>2 year lease.</p>

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France

Typically, old style leases are 3/6/9 (this is a 9-year lease with breaks every 3 years). The breaks in the 3/6/9 lease are opportunities for the tenant to leave or negotiate a lower rent, but provide no rights to the landlord. Rents are only revised at the end of the lease.

Today, more common in the French office market to sign 6/9 leases with a break only after 6 years (only the tenant has the right to leave or renegotiate the rent here).

Indexation of leases in the office market takes place annually, in-line with the ICC index (the French cost of construction). It should be noted here this index has been very volatile historically and has a lagged impact on leases (i.e. the published ICC growth rate in October 2006 is used for indexation of leases in 2007 but actually refers to growth in construction costs of Oct-05 to Oct-06).

Typically, the old style leases are 3/6/9 (this is a 9-year lease with breaks every 3 years). The breaks in the 3/6/9 lease are opportunities for the tenant to leave or negotiate a lower rent, but provide no rights to the landlord. Rents are only revised at the end of the lease.

Today we see an increasing amount of 10-year and 12-year leases signed, with no break options, but with a base (fixed) component and a variable component.

France used to apply ICC (cost of construction index) for indexation of leases in retail segment. After two years of exceptionally high figures (7% and 5%) the retail community has decided to shift to a blended index of 1) CPI – 50%, 2) ICC – 25% and 3) RSI (retail sales index) – 25%. New blended index will be applied as from 2009 (2008 is still the old 100% ICC indexation).

Typically, the old style leases are 3/6/9 (this is a 9-year lease with breaks every 3 years). The breaks in the 3/6/9 lease are opportunities for the tenant to leave or negotiate a lower rent, but provide no rights to the landlord. Rents are only revised at the end of the lease.

Today lease lengths tend to be shorter, but with no breaks. We see an increasing amount of firm/fixed 6 year leases. Indexation takes place in line with ICC (see offices)

No typical lease - customized leases. Clients can break the lease anytime they want provided a 1 or 2 month notice period.

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Netherlands	<p>5/10 year leases with an option after 5 years for the tenant to leave or renegotiate the rent. Some three-year leases. Rent is adjusted annually by consumer price index.</p>	<p>5/10 year leases with an option after 5 years for the tenant to leave or renegotiate the rent. Rent is adjusted annually by consumer price index.</p>	<p>5/10 year leases with an option after 5 years for the tenant to leave or renegotiate the rent. Rent is adjusted annually by consumer price index.</p>	<p>No typical lease - customized leases. Clients can break the lease anytime they want provided a 1 or 2 month notice period.</p>
United Kingdom	<p>Generally, leases are 10-15 years in length (but may be for 20 years) with rents reviewed every five years with no annual indexation. Rent adjustments at "review" are "upward only" to market level and so rents cannot fall during a lease whatever happens to market rents. Break options have become increasingly common but are rarely earlier than the 10th year. Rent is paid quarterly in advance across the commercial property sectors.</p>	<p>Generally, leases are 10-15 years for unit shops but are rarely below 20 years for anchor stores. Rents are again five yearly and adjusted "upward only" to market levels. It is still rare for UK rental payments to be linked to a tenant's sales turnover. UK leases are "Full, repairing and insuring" meaning the tenant bears the cost of internal refurbishment at the end of a lease and which results in a high net to gross rental ratio to the landlord.</p>	<p>A two tier market with smaller industrial units let on leases of 5-10 years but larger logistics buildings rarely let for terms of less than 20 years. Five year "upward only" rent reviews are again the norm although inflation linked leases are becoming increasingly common for logistics buildings. Rent is a prior charge in the UK ranking above interest payments in a winding up order.</p>	<p>Annual review. Note that apartments are not typically an institutional investment class</p>