

European Real Estate Monitor

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Branching out from core

Many European institutions have typically relied on core domestic exposure in their real estate portfolio. In this article we use mean-variance modelling to suggest that many investors could benefit from exposure to higher risk strategies, to public securities, and to markets outside Europe.

Focus on: Madrid Offices

In terms of current and prospective rental growth, the Madrid office market seems attractive to many. However commercial real estate seems to be priced with little if any reference to the significant downside risks, in particular to the Spanish economy. We feel there is better value to be found in other markets with less dramatic rental growth.

Market Monitor: Re-pricing risk

Recent events in world financial markets have led investors in all asset classes to re-assess pricing and future performance. Riskier assets such as stocks have suffered, while less risky assets, such as gilts, have benefited. Our guess is that real estate will come out of this more or less neutral - though there are concerns about the effect of the financial turmoil on occupier demand in some markets.

European snapshot

Summary of key market data

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Branching out from core

Traditionally many institutional real estate investors in Europe have relied wholly or mostly on direct private investment in core, stabilised assets within Europe - often, in fact, within their own country or even city. These assets are generally viewed as low risk, high income diversifiers within a multi-asset portfolio.

Recently this has started to change. European institutions have started to look for ways to enrich their real estate exposure - for example, by buying outside Europe, by moving further up the risk curve, or by expanding into public markets. In this article we use JPMorgan's 'Framework' analytical tool, which has been used for several years to help US investors, to take a first look at the choices facing a European investor.

The Framework is essentially a mean-variance optimisation model. Assumptions are made for the expected performance, volatility and cross-correlations for the asset categories under consideration. These parameters are derived from consideration of (i) the location of the real estate; (ii) the risk attached to the underlying assets (e.g. stabilised vs. vacant); (iii) the level and cost of the leverage and (iv) the nature of the "wrapper" placed around the real estate, such as public vs. private. In addition, each strategy is assigned a likely fee load and an income component, with (generally speaking) riskier strategies having higher fee loads and a lower ratio of income to total returns.

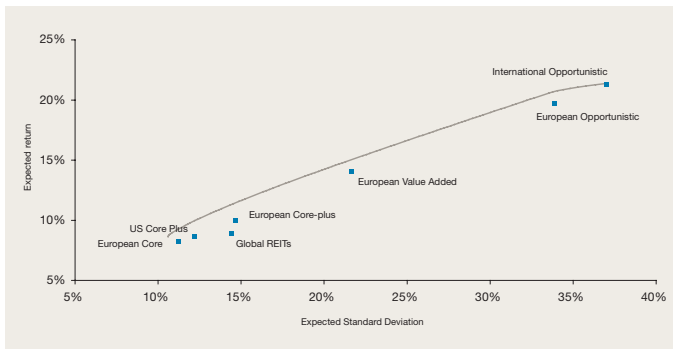
There are, of course, dozens of potential combinations of these four factors, but in this analysis we confine ourselves to what we believe to be the main equity investment classes that would be considered by a European institution, namely:

- European core real estate;
- European core-plus real estate;
- US core-plus real estate;
- European value-added real estate;
- European opportunistic real estate;
- International opportunistic real estate;
- Global real estate equities/REITs.

For analytical purposes it is assumed that each of these are contained in a fund structure, although an investor who chose to invest in property or REITs directly would probably face much the same return, cost and income profile (though not, unless they were very well diversified, the same risk).

Chart 1 shows the assumptions made for risks and returns for these strategies. A few points should be noted. Firstly, these are designed to represent expected performance over the next five to seven years, not some theoretical or long-run equilibrium. Secondly, while most of the strategies line up fairly neatly in risk/return space, global REITs have a somewhat higher risk relative to their return. This reflects their partial correlation to global equity markets. Thirdly, US core-plus underperforms European core-plus in our assumptions. There are three reasons for this: (i) Europe is still in the early- to mid-phase of the real estate cycle, while the US is closer to (though not yet at) the end; (ii) debt costs are lower in Europe; and (iii) more restricted supply relative to demand in Europe has historically meant that core real estate, as measured by IPD, has outperformed the NCREIF index in the US, and this is likely to continue. Despite these assumptions, as we shall see both REITs and the US have an important role to play in a diversified real estate portfolio.

Chart 1: Risks, returns and the “efficient frontier”

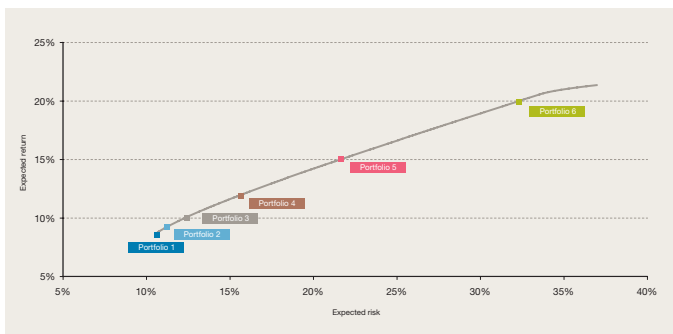


Source: JPMorgan Asset Management

Chart 1 also shows the “efficient frontier” traced by optimal combinations of the various strategies under consideration. Generally speaking diversification gains mean that a combination of asset types allows a lower risk, or a higher return, or a combination of the two, than any single investment class.

We now look at a selection of possible portfolios along this frontier (Chart 2). These range from the so-called minimum variance portfolio (Portfolio 1), where assets are combined to produce the lowest possible risk, to a high-risk portfolio (Portfolio 6) that produces 20% expected gross returns.

Chart 2: Example efficient portfolios (i)

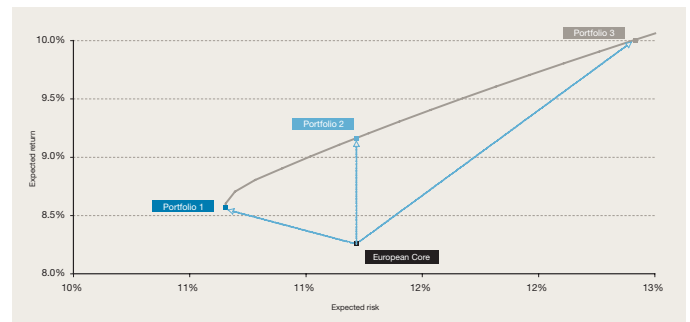


Source: JPMorgan Asset Management

In Chart 3 we zoom in on the lower end of the risk spectrum, where many European institutions will be focused.

An important result is that the minimum variance portfolio gives a higher expected return (+0.3% per annum) at a lower risk (-0.5% points of standard deviation) than a Europe-only core strategy. Meanwhile Portfolio 2 provides exactly the same risk as European core but produces a significantly higher return - nearly 1% point. Portfolio 3 - set to 10% gross expected return - provides 1.7% points of extra return compared to European core at a cost of only 1.2% points of additional risk, an extremely attractive risk/return trade off.

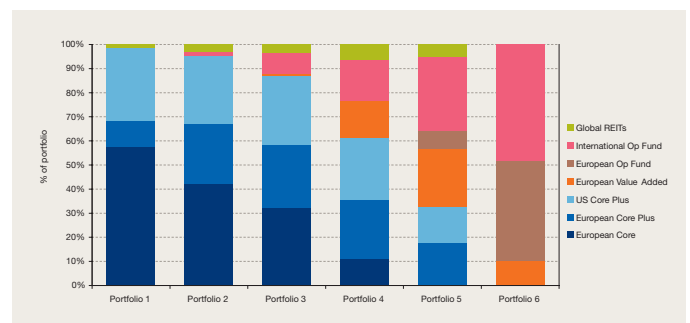
Chart 3: Example efficient portfolios (ii)



Source: JPMorgan Asset Management

Chart 4 shows the composition of these portfolios. It is interesting to note that even the minimum variance portfolio contains a significant element of European core-plus, a larger element of US core-plus (because of the geographical diversification benefits this brings to the portfolio), and even a slice of Global REITs. Portfolio 2 has a small allocation to international opportunity funds. As we move further up the risk curve, the allocation to core and core-plus investments naturally declines while that to higher-risk strategies rises; yet even at a target gross return of 15% (Portfolio 5), core-plus strategies in both Europe and the US continue to play a significant role alongside their more aggressively-minded cousins. This is a powerful illustration of the benefits of diversification, not just by location but also by strategy.

Chart 4: Example efficient portfolios (ii)



Source: JPMorgan Asset Management

In addition to the risk/return characteristics of the efficient portfolios, it is also possible to calculate the fee drag and thus the expected net return, as well as the proportion of total returns that are likely to be generated by income as opposed to capital appreciation; these variables rise and fall, respectively, with risk and return. The six example portfolios are summarised in Table 1.

Table 1: Summary characteristics of example portfolios

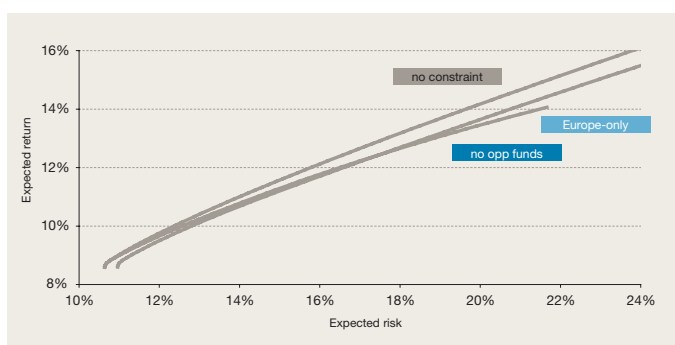
	Expected gross return	Expected net return	Expected risk*	Income as % of gross return
Portfolio 1	8.6%	7.4%	10.7%	67.6%
Portfolio 2	9.2%	7.8%	11.2%	63.5%
Portfolio 3	10.0%	8.5%	12.4%	58.6%
Portfolio 4	12.0%	10.1%	15.8%	47.5%
Portfolio 5	15.0%	12.4%	21.8%	33.6%
Portfolio 6	20.0%	16.2%	32.5%	16.2%

Source: JPMorgan Asset Management

* standard deviation of expected return

It is also possible to constrain the model to show the effects of limiting or excluding exposure to certain strategies. Chart 5 shows two such constraints. The first excludes US core-plus, global REITs and international opportunity funds to produce Europe-only portfolios. As can be seen, this reduces the return available for a given risk throughout the frontier. The second excludes opportunity funds. This frontier starts at the same point as the unconstrained version (since the minimum variance portfolio does not include opportunity funds), but soon veers south. At gross returns of around 14% (the highest achievable with this constraint), the returns available are nearly 1% point below that achievable for the same standard deviation if higher-risk exposure had been allowed.

Chart 5: Examples of constraints



Source: JPMorgan Asset Management

All of the above relates to one side - the supply side - of the equation with which an investor must juggle. Which of these portfolios an investor chooses depends on his or her preferences concerning a number of factors, the four most important of which are:

Risk appetite: most obviously, a risk-averse investor will tend to stick to lower-risk strategies, although the role of real estate in diversifying away risk in a multi-asset portfolio (not considered here) should also play a part in this decision. Depending on correlations, it is by no means necessarily the case that the lowest-risk real estate will result in the lowest-risk multi-asset portfolio.

Income requirement: mature life and pension funds often require significant and reliable income streams to pay policy holders and see real estate as playing an important part in achieving this. Clearly, high-risk strategies may fail to meet this criterion.

Liquidity requirement: plans may need to maintain a certain degree of liquidity in their overall portfolio or in their real estate allocation. Riskier strategies are generally less liquid. However, outside public markets real estate is not in general a particularly liquid asset class anyway.

Investment constraints: Institutions are often explicitly constrained by law, by design or by their decision-making bodies to limit or exclude certain types of exposure. For example, there may be limits on leverage, on private market investment, or on investment outside the home geography or currency zone. The model can be adapted to reflect these constraints, though in most cases a loss of efficiency will result.

The analysis laid out here relies, of course, on a particular set of assumptions about the risks, returns and correlations associated with a set of strategies. These assumptions, as carefully considered as they are, may of course be false; and the opportunity set may be ill-chosen. The framework can of course be adapted to deal with different inputs. It also ignores currency issues, which can make a big difference to the results (see *Investing in Europe: diversification and currency issues for UK investors*, JPMorgan Asset Management, 2006).

Nonetheless, it seems unlikely that any plausible set of assumptions will result in conclusions about the benefits of diversifying away from a Europe-only, core strategy that are substantially different from the two main results shown above, namely that:

- (i) Even the portfolio with the lowest achievable risk is likely to contain elements that are neither core nor European; and
- (ii) A diversified portfolio can produce significantly higher returns for a given level of risk than an undiversified one.

On this basis, it is hardly surprising that so many European institutions are actively increasing their foreign, non-core and public market exposure - a trend which, we believe, will continue to shape the real estate capital markets for several years to come.

Focus on: The Madrid Office Market

The European real estate cycle is in transition. Yield compression - the key driver of returns over the last three years - has slowed. At the same time, solid economic growth means that fundamentals are improving rapidly and this is likely to continue over the course of the next 12-18 months, most obviously manifested in rental growth. Investor attention is therefore increasingly focused on income growth rather than yield compression and markets with the best prospects for rental growth are in favour.

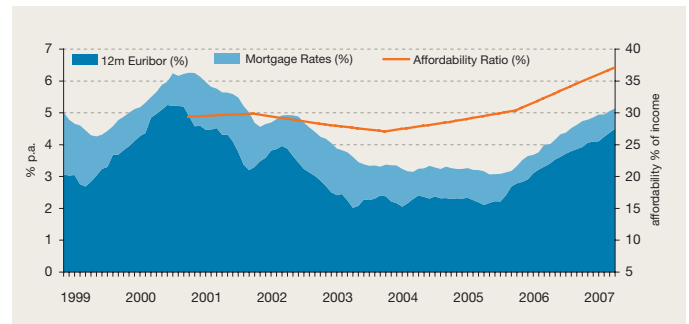
The Madrid office market initially appears attractive on this basis. The Spanish economy has outperformed the Eurozone average for over a decade and real estate markets have reflected this strength. Office take-up in 2006 was the highest since 2000 and the first half of 2007 was the highest on record at 459,000m². The office vacancy rate was 3.1% at the end of quarter two 2007, with prime rents at end-June 2007 up 23% on a year earlier. According to DTZ, €3.61bn of real estate have been purchased in Spain in the first six months of the year, of which 60% was spent on offices and over 50% in Madrid.

Along with these inflows of money has come increasingly sharp pricing. The key question for an investor is the extent to which current yields fairly reflect assumptions of growth and of risks. If pricing does not fully reflect market risk, then a market with seemingly good fundamentals may still come closer to the bottom than the top of target markets. We believe this is the case in Madrid for two key reasons:

1) Downside macro-economic growth risks. Much of the out-performance of the Spanish economy is a result of the Spanish construction boom, triggered by low Eurozone interest rates and the movement of a huge stock of unemployed labour into work. This has in turn stimulated the demand side, shown most clearly in domestic consumption and investment (especially in construction). The construction sector has grown at an annual average of 6% in real terms since 1997 which compares with average real GDP growth rate of 3.5%. Construction represented 11.5% of Spain's GDP in 1997 (a level comparable with the Euro area), which had risen to 16% of GDP by 2006. Latest estimates suggest over 13% of the Spanish workforce is employed in construction.

Levels of wealth have increased as a result of the appreciation of residential assets. However it is likely that the Spanish residential property market peaked last year. There is a discernible trend of slower house price inflation (5.7% in Q2 2007 versus 9% in Q4 2006 and a peak of 18% in 2004 and we believe there is a gradual convergence of house prices towards nominal inflation rates.

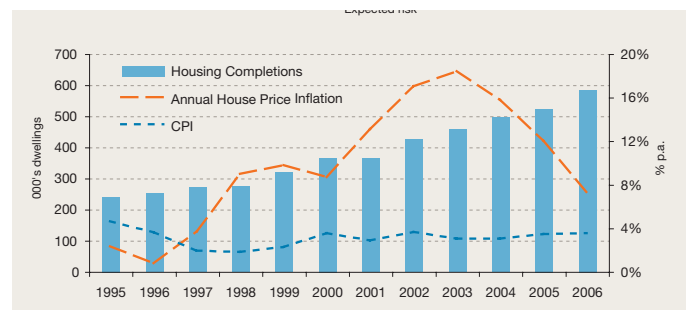
Chart 1: 12m Euribor and Spanish Mortgage Rates (LHS) vs Affordability (RHS)



Source: AHE; Housing Ministry; Morgan Markets

There are two main reasons for this. Firstly, the rising cost of debt is feeding through to mortgage costs (Chart 1). JPMorgan estimates that mortgage affordability (mortgage payments as a % of household income) will approach 40% by the end of 2007 and exceed 40% if borrowing rates surprise on the upside. This implies that a supply-side correction is needed but - and this is the second concern - current indicators suggest this is unlikely (chart 2). Supply currently remains buoyant with 760,000 starts last year, meaning there are likely to be further increases in completions over the next two years.

Chart 2: Housing supply (LHS) vs. Annual House Price Inflation / CPI (RHS)



Source: AHE; Housing Ministry; JPMorgan Asset Management

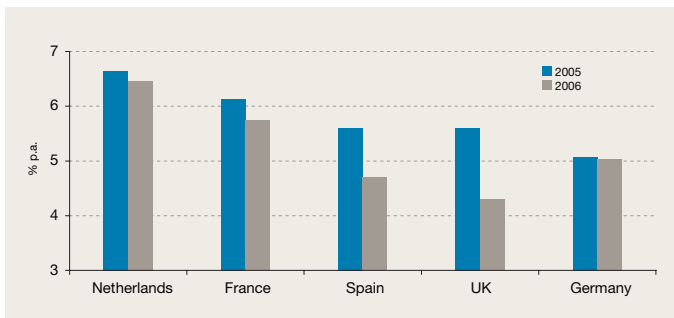
A housing slowdown would threaten a more widespread deceleration in Spain's economy, given its high dependence on real estate and construction activities. The OECD calculate that sustained household borrowing (based on growing household wealth from rising house prices) has raised non-financial private sector indebtedness to 187 percent of GDP (mainly at variable rates for households), among the highest in the OECD. Faced with a housing slowdown, creditors may decide to withdraw or tighten credit lines or demand more return to compensate them for the risk.

This would hit domestic demand; and the Spanish economy is not well placed to make up for this with rising foreign demand. The country has for several years suffered from low productivity growth and deteriorating external competitiveness - Spain boasts the second biggest current account deficit in the world after the US (\$107bn last year or 8.8% of GDP), and the majority of investment in recent years has been focused on producing essentially non-tradable goods such as buildings.

These risks also extend to commercial markets. A downturn in GDP growth would impact final demand; and Spanish companies display a similar vulnerability to Spanish consumers. Spanish corporate debt is at an historic high, at 106% of GDP versus a Eurozone average of 70%. Banks that are already exposed to high levels of lending to developers at a stage where demand from final users is less certain may require a higher risk premium for real estate loans, which in turn could feed through to asset pricing.

2) Growth appears to be fully priced in. Movements in yields - expressions of annual rent as a percentage of the value of a building - indicate changing investor sentiment towards real estate assets. Clearly rental growth is attractive for investors and we would expect investors to be prepared to pay more (i.e. bid yields down) in those markets that have the strongest rental growth prospects. As Chart 3 indicates, this has indeed been the case; both in Spain and Madrid office markets, Spanish yields are now amongst the lowest in Europe.

Chart 3: IPD Net Office Yields 2005 vs. 2006



Source: IPD; JPMorgan Asset Management

Despite the sharp prime rental growth seen in Madrid over the last eighteen months (31%) the prospects for continued rental growth are good. Healthy demand, particularly for grade A space, and a limited development pipeline in the CBD, are likely to continue to push rents upwards. We forecast annualised rental growth of 6% over 2007-2011 putting it amongst the top performing European cities. Given its position in the cycle, shouldn't this make Madrid a key target market?

To answer this, we must remind ourselves that investment in real estate is risky. So an assessment of value has to compare the potential returns of an asset with the returns obtained from investing in a risk-free asset such as government bonds. The past few months have seen continued tightening of monetary policy across Europe with Euro base rates now up 125bps since mid 2006.

The impact of this monetary tightening has been exacerbated by the recent turmoil in financial markets which have systematically re-priced credit risk.

Because of the higher risk-free rate, the wider re-pricing of risk, and the potential of economic downturn, we believe that Madrid is vulnerable to outward yield shift. Certainly over the past two months Spanish real estate companies have struggled to syndicate loans due to concerns about debt and more pertinently the quality of the assets underpinning them.

We therefore need to look at how well rental growth protects income against outward yield shift. Table 1 shows the result of an exercise which models office returns (after tax, depreciation and cost of borrowing) under different yield and rental growth assumptions. The key output is the final column, which compares expected returns to the risk free rate. We assume a risk premium for Madrid offices of 2.5% points; outcomes that fail to achieve this target are highlighted in blue.

Table 1: Returns under different rental growth and exit yield assumptions

2007 Yield	Rental Growth 07-11	2011 Yield	Expected Return pa*	+/- Risk free rate**
4%	6%	4.00%	11.9%	7.62%
4%	6%	4.25%	9.4%	5.15%
4%	6%	4.50%	7.1%	2.85%
4%	6%	4.75%	4.9%	0.65%
4%	6%	5.00%	2.8%	-1.46%
4%	8%	4.00%	15.8%	11.52%
4%	8%	4.25%	13.4%	9.12%
4%	8%	4.50%	11.1%	6.82%
4%	8%	4.75%	8.9%	4.62%
4%	8%	5.00%	6.8%	2.47%
4%	4%	4.00%	7.8%	3.52%
4%	4%	4.25%	5.4%	1.12%
4%	4%	4.50%	3.1%	-1.18%
4%	4%	4.75%	0.9%	-3.42%
4%	4%	5.00%	-1.3%	-5.53%

*Assuming 50% leverage **10 yr Euro Bond

Source: JPMorgan Asset Management
*assuming 50% leverage **10y Euro bond

By this analysis, and on current rental growth forecasts, anything greater than a 50bps outward yield shift would deliver returns below requirements. It would take compounded annual rental growth of 8% to protect returns against a sustained outward yield shift. However given the historic volatility of the Madrid office market and the potential vulnerability of the Spanish economy, it is certainly possible that rental growth will ease. Assuming rental growth of 4% p.a. (still above inflation), any inward yield shift would push excess returns beneath the required risk premium. It is difficult to argue that there will be growth in Madrid above that already priced into yields. Rather, at current pricing, investors should display caution.

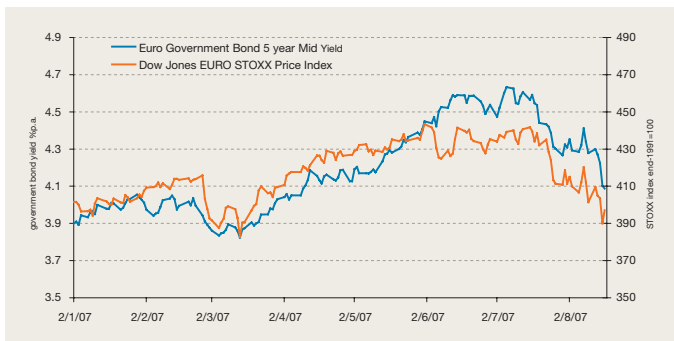
The intention of this article is not to call the top of the Madrid office market; we expect continued office rental growth through the remainder of 2007 and, as in any market, there may be pockets of value to be found for investors. However despite the seemingly strong indicators, in a pan-European context the risks to the Madrid real estate market remain firmly weighted to the downside; and it does not appear that economic and capital market risks are fully priced into the Madrid market. We believe there is better relative value to be found in markets with slightly lower growth prospects, but more attractive pricing.

Market Monitor: Re-pricing risk

What does European commercial real estate have to do with defaults on sub-prime residential mortgages in the United States? At first sight, the answer might seem to be “not much”; but this ignores three crucial factors. Firstly, it turns out that several European banks have taken direct exposure to this market. Secondly, even for those who haven't, the spreading of global risk through the use of ever more sophisticated derivatives means that some of this particular risk has ended up in the hands of European banks and investors - even if this is not readily apparent to its holders. Thirdly - and most importantly - it ignores the very considerable effects of confidence contagion across financial markets.

It is important to appreciate that what has happened is not a global crash in financial markets, but rather a re-rating of risk. The need to re-price sub-prime mortgage debt led investors to question whether they were paying correctly for other types of higher risk. But there has been no large-scale withdrawal of capital from global markets. Instead it has shifted into less risky corners of the market; and in particular into investment-grade bonds and (for ultra-bears) cash. Chart 1 shows how while equity markets have stalled, yields on government bonds in Europe have fallen (i.e. bond prices have risen) in almost a one-for-one relationship.

Chart 1: Stock prices and government bond yields



Source: Morgan Markets

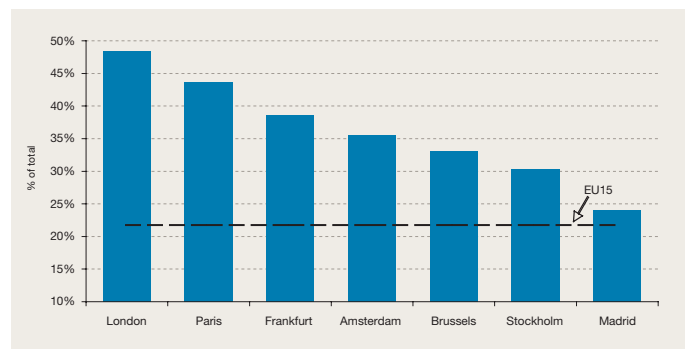
As is well known, real estate sits somewhere between bonds and equities on the risk curve. In fact core unleveraged real estate sits far closer to bonds than it does to equities. It seems unlikely, therefore, that it would suffer from this re-pricing; it may even benefit. Riskier investments may, however, see prices downwards - if, that is, the current re-pricing of risk turns out to be sustainable long enough for prices in real estate markets to move.

One immediate way in which risk re-pricing could affect real estate is through the cost of leverage. Early indications are that European banks are indeed likely to shade up the margins they charge on mortgage debt - although to what extent depends on the riskiness of the underlying assets.

From what we are seeing in the market, it looks as though the margin on debt for a moderate-risk asset with 60-65% leverage may rise by something like 15-20bps. At the same time, however, the bull market in bonds has meant that the typical base cost of debt has fallen. At the time of writing the five-year swap rate stood at around 4.55%, some 30bps off its peak immediately before the market correction. Overall therefore the cost of debt for low- to moderate-risk real estate investments has, so far at least, fallen. Again, the situation may be reversed higher up the risk curve

There is a third factor that needs to be taken into account, however, and that is the effect of the current turmoil on occupier markets. Other things being equal, lower stock prices tend to mean fewer jobs in financial services - as the last slowdown amply demonstrated. Although this should be mitigated to a degree by the corresponding upturn in lower-risk assets, the net effect on financial service employment is likely to be negative, since generally speaking a euro of lower-risk investment requires fewer resources to manage than a euro of higher-risk investment.

Chart 2: EU consumer confidence indicator



Source: Experian, Bundesamt für Arbeit

Chart 2 shows the proportion of total employment that is dedicated to financial and business services in several of Europe's major cities. As can be seen this proportion varies significantly, from nearly 50% in London to less than 25% in Madrid (for the EU as a whole, this figure is around 22%). Other things being equal, we would expect those cities to the left of this chart to be more heavily hit by any retrenchment by banks and those who serve them - something which London could probably do without, given that central London offices are the only sector currently showing positive capital growth in the IPD monthly index.

What remains to be seen is whether current financial market uncertainty tips over into a more generalised slowdown in the global macroeconomy. So far there is little sign of this; indeed the underlying economy of Europe in particular looks robust. If there were a period of weaker economic growth however, it would come at an unfortunate point in the real estate supply cycle.

European snapshot

Standard office lease terms

Country	Term length years	Break rights	Transfer tax (approx)	Other notes	Invested stock € billion
UK	10-15	Rare	4.0%	5-yr upward-only review; tenant right to renew	797
Germany	10	Every 5 years	3.5%	Annual indexation	601
France	9	Every 3 years	4.8%	Annual or 3-yr indexation; tenant right to renew	296
Italy	12	Every 6 years	4%	Annual indexation (75% of index)	187
Netherlands	5-10	No	6%	Annual indexation	131
Switzerland	5-10	No	3%	Annual indexation; renewable for a further 5 years	99
Spain	3-5	No	3%	Annual indexation	83
Sweden	3-5	No	3%	Annual indexation; tenant right to renew	80
Portugal	5	No	6.5%	Annual indexation	61
Austria	5-10	No	4.5%	Annual indexation	60
Belgium	12	Every 3 years	12.5%	Annual indexation	59

Major cities – market size

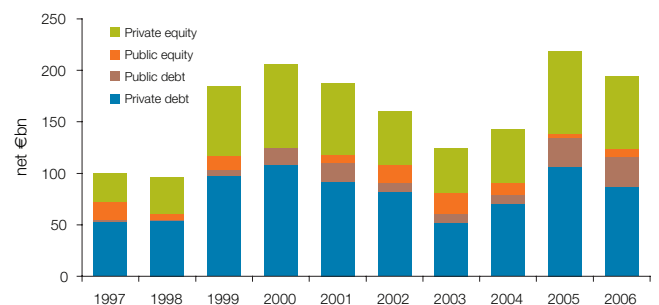
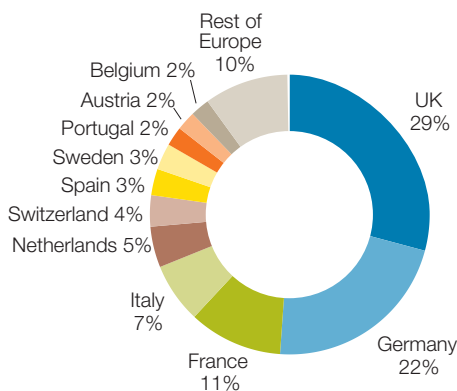
Yields

Rents

Country	City	Market size € billion	% of country	Prime initial yield % pa		Prime rental level €/m ² /year			
				office	retail	office	2007	retail	2007
UK	London	275	34.6	4.25	3.75	1425	↗	8234	↔
	Birmingham	56	7.0	4.75	4.25	451	↔	5146	↔
	Manchester	47	5.9	4.75	4.00	451	↔	4829	↔
Germany	Frankfurt	102	17.0	4.25	4.00	432	↔	2592	↔
	Munich	68	11.2	4.50	4.15	360	↔	3024	↔
	Hamburg	52	8.7	4.70	4.70	276	↔	2280	↔
	Berlin	53	8.9	4.25	4.25	276	↔	2100	↔
France	Paris	201	68.0	4.00	4.00	760	↗	7350	↔
	Lyon	7	2.5	6.00	6.75	220	↔	1820	↔
Italy	Rome	42	22.5	5.30	5.10	400	↔	2200	↔
	Milan	42	22.7	5.15	5.00	490	↔	2400	↔
Netherlands	Amsterdam	19	14.8	5.50	4.95	330	↔	2000	↗
Switzerland	Zurich	32	32.7	5.25	4.50	560	↔	2467	↗
Spain	Madrid	27	32.7	4.25	5.00	360	↗	1800	↗
	Barcelona	11	14.0	4.25	5.00	305	↗	1750	↔
Sweden	Stockholm	51	63.6	4.60	4.60	439	↗	1446	↔
Portugal	Lisbon	30	48.9	6.50	7.00	240	↔	1020	↔
Austria	Vienna	30	50.7	5.50	4.50	258	↔	2640	↔
Belgium	Brussels	30	50.0	5.50	5.00	295	↔	1350	↔

Invested stock as % of Europe

Net real estate Capital flows € bn



Sources: DTZ Research, IPD, JPMorgan Asset Management estimates and calculations

