PATRIZIA
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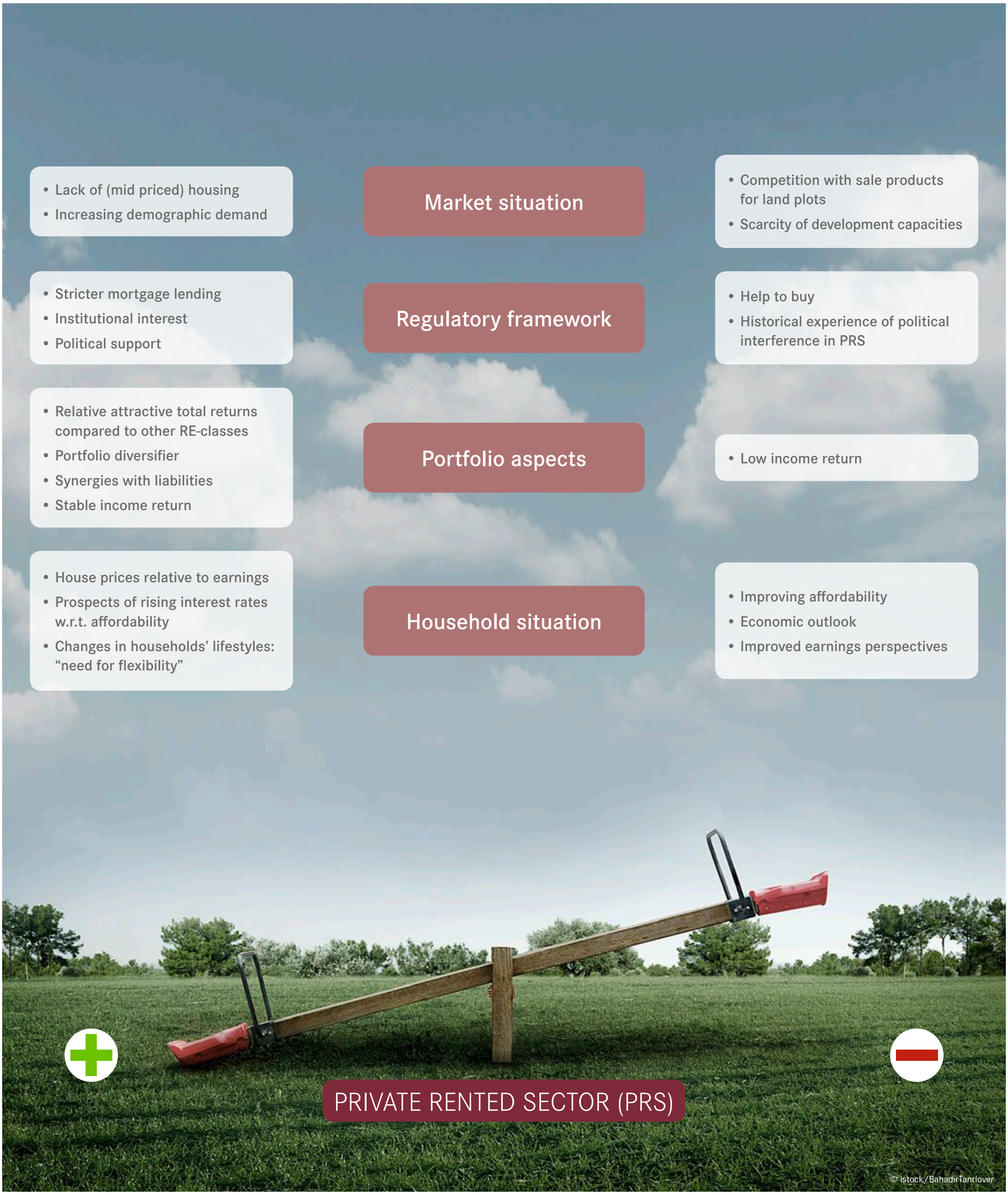
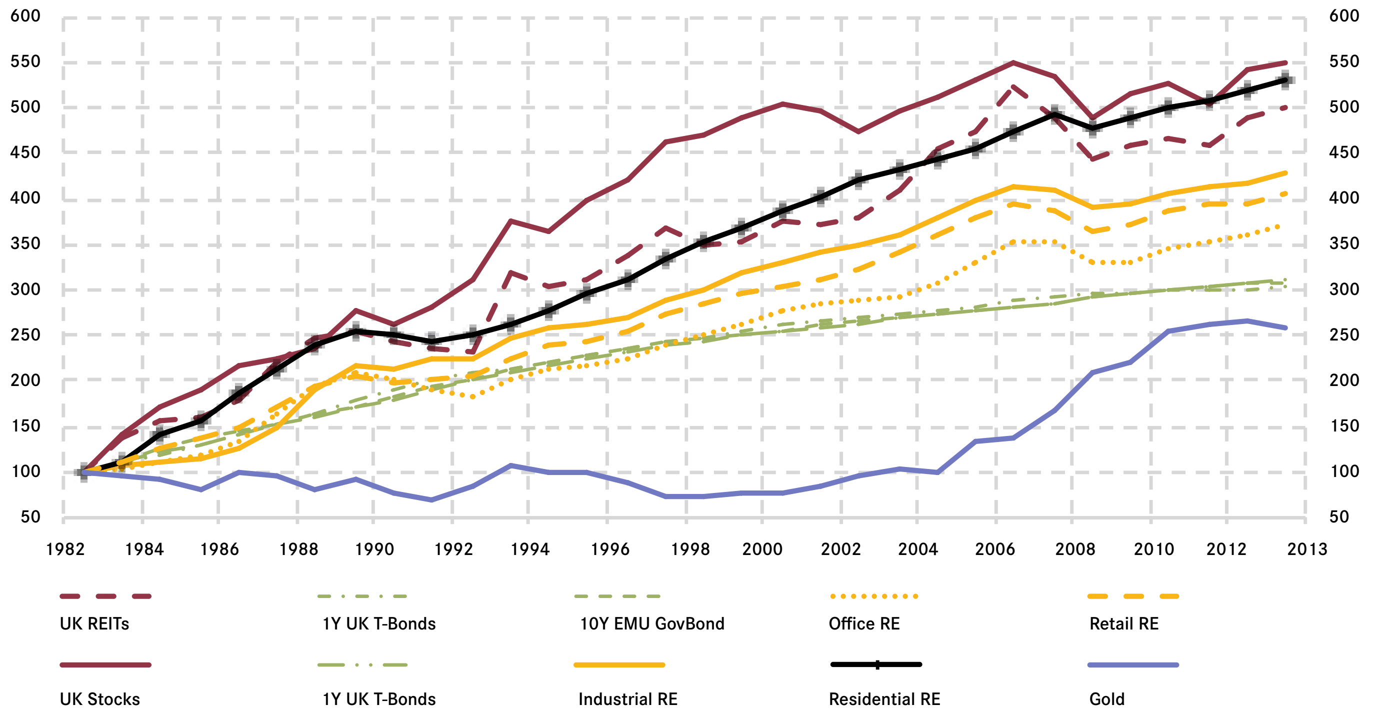
PATRIZIA INVESTMENT COMPASS

Residential UK

10|2014



CUMULATIVE RETURNS OF UK ASSET CLASSES 1982=100



Source: PATRIZIA own calculations, Reuters. Real estate series unsmoothed via Geltner's AR-procedure.

Maximum asset diversification or active selection management? – The role of residential real estate in a UK mixed Portfolio

Looking at total return indices in the UK market, the residential property sector is considered as (one of) the best performing asset classes when compared to stocks, bonds, commodities and other property sectors. Nevertheless, in order to invest in the market it is important for national and especially for foreign institutional investors to evaluate the performance indicators of direct (rented) residential property in comparison with alternative investment opportunities. In this context, a minimum variance portfolio based on the Markowitz approach is a suitable model that provides first insights of the benefits of residential real estate as an asset class as well as the diversification benefits in an institutional mixed portfolio.

RESIDENTIAL IS DIFFERENT ...

The observed opportunity set consists of times series for stocks, REITs, commodities, government bonds and gilts and four serially unsmoothed property return series for industrial, office, residential and retail properties in the UK. When looking at the cumulative annual returns in the following chart, the opportunity set from 1982 until 2013 reveals the extraordinary development of the UK stock and REIT market, but especially the strong performance of residential real estate. The opportunity set also indicates that office, retail and industrial real estate indices present a common market development with a performance below stocks, REITs and surprisingly residential investments over a period of 21 years.

From 1982 until 2013, the UK stock market and residential assets recorded the highest annualised total returns of more than 14% with a volatility of 22% and 10% respectively. The UK REIT market has developed in a similar way with a return of around 12% p.a., however, with the highest observed volatility of 26% of the different assets under

DESCRIPTIVE STATISTICS AND CORRELATION FOR THE UK'S OPPORTUNITY SET 1982-2012

Selected Assets		Mean Return	Volati-lity	Sharpe Ratio rank in ()		Asset Correlation									
						1	2	3	4	5	6	7	8	9	10
UK Stocks	1	14.34%	22.4%	0.64	(8)	1.00	0.71	-0.21	0.18	0.22	0.24	0.41	0.35	0.30	0.49
UK REITs	2	12.0%	25.8%	0.47	(9)		1.00	-0.20	0.03	0.01	0.00	0.88	0.60	0.35	0.68
Gold	3	5.2%	16.0%	0.33	(10)			1.00	-0.42	-0.32	-0.29	-0.31	-0.22	-0.32	-0.31
1Y UK T-Bonds	4	6.9%	4.0%	1.73	(3)				1.00	0.89	0.84	0.26	-0.12	0.30	-0.18
20Y UK Gilts	5	7.2%	3.1%	2.32	(1)					1.00	0.98	0.07	-0.01	0.21	0.15
10Y EMU GovBond	6	7.2%	3.4%	2.12	(2)						1.00	0.02	-0.05	-0.16	0.11
Industrial Real Estate	7	10.5%	10.5%	1.00	(6)							1.00	0.88	0.55	0.84
Office Real Estate	8	8.9%	11.2%	0.79	(7)								1.00	0.71	0.84
Residential Real Estate	9	14.31%	10.1%	1.42	(4)									1.00	0.65
Retail Real Estate	10	10.1%	9.4%	1.07	(5)										1.00

Source: PATRIZIA own calculations

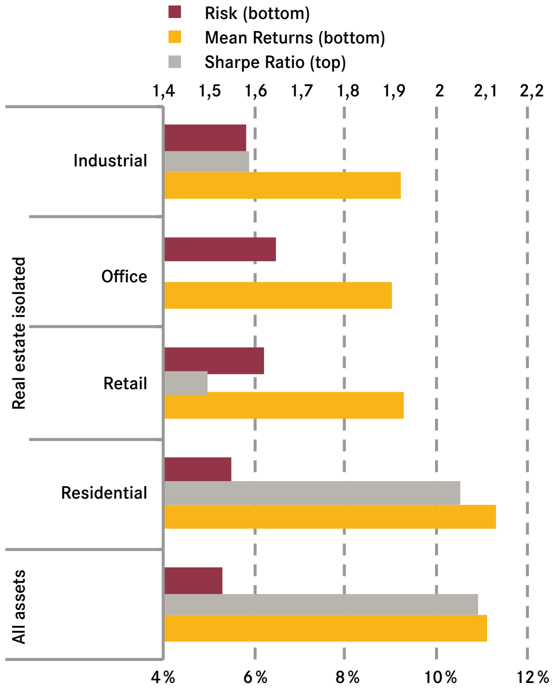
consideration. When considering the Sharpe ratio as an information criterion, government bonds and gilts show the highest return for a unit of risk, followed by residential property with a Sharpe ratio of 1.42 in comparison to UK stocks with a very low return of 0.64 per unit of risk. While the correlation between stocks and UK REITs is about 71%, government bonds, as expected, correlate highly with each other. The correlation between the four direct property sectors provides first insight into their diversification properties within a multi-asset portfolio: the residential sector correlates with the overall UK real estate market by about 60%, whereas all other property sectors correlate with the overall market by about 80%. This implies that market movements in the UK residential sector are not highly dependent on activities in the office, retail or industrial markets and are driven by other fundamental factors, making it beneficial to include the residential sector in a multi-asset portfolio as a risk-diversifier.

... AND SIGNIFICANT

The five opportunity sets selected for the portfolio optimisation include in a first stage all asset classes and in a second stage one of the direct real estate assets sectors independently in order to assess the single benefits of the asset classes within investors' portfolio. The portfolio estimations provide a useful insight into the contribution of different asset classes in regard to risk and return, especially in the case of the residential sector. The results of the minimum variance portfolios shown in the following table present the optimum asset allocations of a conservative investor (by means of minimum variance), as well as the portfolio returns, volatilities and Sharpe ratios. The portfolio including all assets of the opportunity set (column I) shows high allocation levels in commodities, residential real estate and stocks. Its mean return is 11.1% with a risk of approximately 5% resulting in 2.09 units of return per unit of risk. When looking at the portfolio optimisation for each single property sector (columns II to V), the results show that the portfolio with the highest achievable return and lowest risk should include around 41.1% residential properties as a risk diversifier and return optimizer at the same time. Thus, portfolios including retail, office or industrial properties respectively generate either a lower (mean) return or increase the risk of the portfolio as shown by the declining Sharpe Ratios.

OPPORTUNITY SETS FOR PORTFOLIO OPTIMISATION

Asset allocation of the respective asset		I	II	III	IV	V
		All Assets	Real estate included on an individual basis			
			Residential	Retail	Office	Industrial
Asset Allocation in Minimum Variance Portfolio	UK Stocks	16.9%	21.7%	22.5%	26.4%	18.9%
	UK REITs	5.5%	/	/	/	/
	S&P GSCI Gold	8.5%	7.2%	17.2%	18.5%	16.3%
	1Y UK TBill	10.0%	10.0%	10.0%	10.0%	10.0%
	20Y UK Gilts	10.0%	10.0%	10.0%	10.0%	10.0%
	10Y EMU Bond	10.0%	10.0%	5.0%	5.0%	5.0%
	Residential	38.6%	41.1%			
	Retail	0.0%		35.3%		
	Office	0.0%			30.1%	
	Industrial	0.5%				39.8%
Portfolio Performance	Mean Return	11.1%	11.3%	9.3%	9.0%	9.2%
	Risk	5.3%	5.5%	6.2%	6.5%	5.8%
	Sharpe Ratio	2.09	2.05	1.50	1.38	1.59



Source: PATRIZIA own calculations. Portfolio optimization via Markowitz with bonds and Gilts restricted to 10%.

In view of the ongoing developments in the residential market in the UK – especially the private rented sector – the optimisation results confirm that residential properties enjoy unique characteristics, distinguishing them substantially from office, retail or industrial properties. As an example, the low correlations together with the comparatively higher returns in relation to the risks incurred show the strong stability of investments in residential assets on the long-run. Based on these findings the importance and significance of residential properties within a multi-asset portfolio are straightforward. The results highlight further that residential real estate as an own asset class acts as a risk diversifier enhancing at the same time the portfolio return.

For the UK rented sector, the results make a strong statement for what to do in the medium-term. The current momentum towards residential investments of institutional investors inside and outside the UK must be used to establish a substantial investment market. Based on the institutional product which is traded there, investors will be provided with market data and key information they demand in order to invest in a low yielding but stable investment asset class like rented apartments. The positive demographic and the accelerating economic growth in the UK, especially in regional cities, will then be directly transferred in a self-reinforcing interest of institutional investors, which will increase consequently the supply of investable product.

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