

European Public Real Estate Association

Investor Outreach Study

Update 2008

Correlations of Property Stocks with other Asset Classes

About the autors

Steffen Sebastian

Steffen Sebastian is Professor of Real Estate Finance and current head of IRE|BS International Real Estate Business School, University of IRE|Regensburg, Germany. He graduated in Business Administration at the University of Mannheim (Germany) and ESSEC (France). He holds a doctoral degree from the University of Mannheim (Germany) and a post-doctoral degree from the Goethe University of Frankfurt (Germany).

Among indirect real estate investments, his research focuses are real estate indices, real estate derivatives and asset allocation. He has contributed to a number of academic journals and is member of the Editorial Board of the *European Journal of Real Estate Research* and the *German Journal of Property Research*. He is member of the EPRA Academic Circle, academic member of INREV, and a member of the American Real Estate and Urban Economics Association as well as the German Real Estate Research Association.

Steffen Sebastian

Chair for Real Estate Finance

International Real Estate Business School (IREBS) University of Regensburg, Germany 93040 Email: Steffen.Sebastian@irebs.de Phone: +49 (941) 943-5081 Fax: +49 (941) 943-5082

Melanie Sturm

Melanie Sturm is a research assistant at the Chair of Real Estate Finance. She holds a graduate diploma in Business Administration from the University of Regensburg.

For any questions or feedback related to this survey, please contact:

Fraser Hughes *Research Director*

EPRA Schiphol Boulevard 283 1118 BH Schiphol Airport The Netherlands Email: f.hughes@epra.com Phone: +31 20 405 3832

CONTENTS

-

Table of Contents

1.	. Executive Summary		5
2.	Data	a Description	7
3.	Cori	relations of Property Stocks with other Asset Classes	9
	3.1	Correlations with Stocks	9
	3.2	Correlations with Bonds	17
	3.3	Correlations with Money / Treasury Bonds	25
	3.4	Correlations with Emerging Market Stocks	33
	3.5	Correlations with Direct Real Estate	41
	3.6	Correlations with Private Equity and Venture Capital	49
	3.7	Correlations with Hedge Funds	57

1. Executive Summary

Background

One good reason to invest in property stocks is profitability, an even better one is diversification. Various studies have shown that integrating property stocks increases significantly the risk-/return profile of a mixed asset portfolio - including the EPRA study by Shaun Bond of the University of Cambridge. Although, the application of complex optimisation unavoidably means that we have to make several assumptions about the markets and investors preferences. Those assumptions limit naturally the validity of the results for all types of investors and/or market conditions. Furthermore, the results, i.e. the weight of property companies in an investor's portfolio, might vary considerably depending on the design of the optimisation model. All in all, the results of complex optimisations models are difficult to communicate and easy to criticise.

EPRA/IRE|BS Study

EPRA and IREIBS decided to embark on a detailed study focused on the correlation of property stocks. Correlations are a measure of the degree of association between two variables. They can vary between -1 for a perfect negative relationship through zero for no relationship, to +1 for perfect positive relationship, therefore: the lower the correlation, the greater the diversification benefits. The EPRA/IREIBS Study of March 2007 gave first insight into the evolution of the diversification potential of property stocks. In this first update the study, data until Q1 2008 is included.

Methodology

Similar to the EPRA/IREIBS study 2007, we investigate rolling window correlations using periods of five years, analysing quarterly returns of FTSE EPRA/NAREIT Global Real Estate Index series against other asset classes.

The returns are defined like follows:

$$r_{i,a} = \ln(RI_{i;a}) - \ln(RI_{i;a-1})$$

With RI denoting the value of the Total Return Index, *i* denoting the asset class and *q* denoting the quarter.

Rolling window correlations are calculated using the quarterly returns of periods of five years. So a single correlation contains 24 observations, for example from the first quarter of 2002 until the fourth quarter of 2007. Altogether we calculated 54 correlations between each of the EPRA Country Indices and another asset class for the considered period.

The database still contain the FTSE EPRA/NAREIT Indices in local currency and compare national indices (local), because we are predominantly interested in the correlations of the FTSE EPRA/NAREIT Indices with the asset classes and not the foreign currency. Furthermore, we assume that the investor hedges against currency risk in a way which causes no premium payments, i.e. by taking out a zero-cost hedge. For the FTSE EPRA/NAREIT Global and Europe Indices we cannot build up a full hedge position because they consist of economies with different currencies.

Results

Correlations with stocks

There is a sharp decrease in correlations with stocks in the periods ending in 2007, meaning increased diversification benefits. But there is also a trend of rising correlations in the recent period, so it is advisable to observe the correlation's further development because probably there will be no everlasting lower correlation with stocks in future.

Correlations with bonds

Correlations with bonds showed some interesting evolution in our study, because they varied considerably in the past. This pattern can be confirmed by the actual update. After the decrease in correlations with bonds with the lowest characteristics, and consequently the best diversification potential around the period from IV/1996 till III/2001 (except for the FTSE EPRA/NAREIT Australia, where we can find the lowest characteristics about two years later) and the following climb,

the correlations continue increasing in the recent periods. For the FTSE EPRA/NAREIT Global, US, Netherlands and Sweden Indices the correlations actually reach (positive) levels which we observed in the periods before the sharp decrease in correlations. For the FTSE EPRA/NAREIT Europe, UK and France Indices, the correlation levels are still clearly lower than before the sharp decrease in correlations, adopting values around zero. Anyway, correlations with bonds are lower than 0.5 for each of the FTSE EPRA/NAREIT indices, thus indicating a clear diversification potential of property stocks.

Correlations with money/treasury bonds

All analysed FTSE EPRA/NAREIT Indices show slightly decreasing correlations with money in the recent periods, reaching only modest but mostly positive levels. Similar to the results for stocks, correlations with an investment in the money markets in US, UK and Germany converge over time, meaning that there is similar diversification potential of the several property indices for an investor in the US, UK or a member state of the European Currency Unit, respectively.

Correlations with emerging market stocks

Except for the FTSE EPRA/NAREIT Australia where correlations have never been that strong, correlations with emerging market stocks considerably decreased in the recent periods. While in the past they have reached levels over 0.5, they now adopt more moderate levels and they even reach values of zero for emerging market Asia.

Correlations with direct real estate

Comparing correlations between the FTSE EPRA/NAREIT Indices and the NPI with correlations between FTSE EPRA/NAREIT Indices and the IMMEX, we see some interesting patterns. For both we cannot make a clear declaration about the correlations, as they adopt positive and negative levels and thus the diversification potential of property stocks in regard to direct real estate varies considerably. Interestingly, in times when correlations with the NPI are rising, the correlations with the IMMEX are falling and vice versa. Recently, correlations with the NPI are positive, with the highest level for the FTSE EPRA/NAREIT Australia or almost zero (FTSE EPRA/NAREIT Europe, France, Netherlands, Sweden), respectively, while correlations with the IMMEX are negative. Thus, on average, the FTSE EPRA/NAREIT Australia seems to behave most like direct real estate.

Correlations with private equity and venture capital

We use the Datastream private equity indexes for the UK and the Datastream venture capital index for the US. This results on average display a slightly stronger correlation. The correlation is quite similar to the figures in the study 2007. In the recent periods, correlations were very stable, currently adopting positive values, except for the FTSE EPRA/NAREIT Sweden and France where correlations were falling.

Correlations with hedge funds

When comparing the correlations between the FTSE EPRA/NAREIT Indices and the Hedge Fund Index or different Hedge Funds sub strategies, respectively, we see that correlations with the overall Hedge Funds Index behave similar to correlations with the sub-strategy Event Driven. In the past, they were stronger compared against correlations with the sub-strategies Global Macro and Equity Market Neutral, reaching correlation levels of 0.5. After decreasing in the recent periods, they are still positive and slightly stronger compared against correlations with Global Macro and Equity Market Neutral which are around zero. So the diversification potential of property stocks in regard to Hedge Funds also increased.

Correlations with commodities

Correlations with commodities adopt values around zero in the recent periods, indicating that there is no relationship between property stocks and commodities either positive or negative. Again, Australian property stocks constitute an exception by being negatively correlated with commodities, and subsequently more appropriate for diversification purposes.

Conclusion

In the recent periods, correlations were especially volatile. In part, this may be due to the affects on the property market from the subprime crises; but the results from the study 2007 showed that correlations are not everlasting characters meaning that investors should regularly reallocate their assets. Most of the correlations between property stocks and other asset classes decreased recently, thus diversification potential of property stocks increased, or – when regarding the crises on the property market – volatile property (stock) returns could be diversified well by other asset classes. To what extent the volatile evolution of correlations is an attribute of the occurrences in the US subprime market remains to be seen. Therefore, investors should observe further developments for appropriately fitting their portfolios in regard to adopted risk.

Further conclusions concern the synchronous movements of the correlations, probably expressing the increasing globalisation. Correlations have been considered from the perspective of an American, British or European investor. Investments in several countries' property stocks lead to similar diversification potential in regard to other asset classes. Only the Australian property market seems to be a more segmented market, resulting in different correlation behaviour and thus partly providing different diversification potential.

Further research might include the diversification potential of property stocks for local investors. Furthermore, the differing results for correlations with various direct real estate indices cause us to take a closer look at the relationship between property stocks and direct real estate.

2. Data Description

Stocks

We use the stock market indices for the US, the UK and Germany provided by Morgan Stanley Capital International (MSCI Indices) to calculate total market returns. The MSCI-Indices exclude capital arrangements, especially dividend payments. According to MSCII the indices cover at least 60 per cent of the market capitalisation. The index currency is USD, GBP and EUR and respectively.

Source: DataStream DataStream Codes: MSCI USA - TOT RETURN IND - t MSUSAML(RI) MSCI UK - TOT RETURN IND - MSUTDKL (RI) MSCI GERMANY - TOT RETURN IND - t MSGERML(RI)

Bonds

The bonds indices are DataStream total all live government bond indices for Germany, US and UK. The indices include bonds with different liquidity to cover the development of the whole market, and are calculated following the recommendations of the European Federation of Financial Analysts Societies (EFFAS). So capital arrangements, especially dividend payments, are excluded. The DataStream indices are investable and replicable. Index currency is USD, GBP or EUR respectively.

Source: DataStream

DataStream Codes: BD TOTAL ALL LIVES DS GOVT. INDEX – TOT RETURN IND - ABDGVAL(RI) US TOTAL ALL LIVES DS GOVT. INDEX – TOT RETURN IND – AUSGVAL(RI) UK TOTAL ALL LIVES DS GOVT. INDEX – TOT RETURN IND – AUKGVAL(RI)

Money/Treasury bonds

As proxies for an investment in the money market we used 3-Month Interbank Rates for the US, the UK and Germany.

Source: DataStream DataStream Codes: US INTERBANK 3-MONTH (LDN:BBA) – OFFERED RATE – BBUSD3M UK INTERBANK 3-MONTH (LDN:BBA) – OFFERED RATE – BBGBP3M GERMANY INTERBANK 3-MONTH – OFFERED RATE – FIBOR3M

Emerging market stocks

The MSCI Emerging Markets Indices represent stocks of emerging markets. The indices are free-float adjusted market capitalisation indices that are designed to measure equity market performance in the global emerging markets. They exclude capital arrangements, especially dividend payments. According to MSCII the indices cover at least 60% of the market capitalisation. We use the MSCI-Total-Return Indices for Asia, Europe and Latin America.

Source: DataStream DataStream Codes: MSCI EM ASIA U\$ - TOT RETURN IND - MSEMFA\$(RI) MSCI EM EUROPE U\$ - PRICE INDEX - MSEEUR\$ (RI) MSCI EM LATIN AMERICAU\$ - PRICE INDEX - MSEFLA\$ (RI)

Direct real estate

The NPI (NCREIF Property Index) represents an investment in US Real Estate. The index includes cash flows and estimated changes in value of aggregated US Funds portfolios. Estimations are updated at least once a year. The index value is reported quarterly. Source: National Council of Real Estate Investment Fiduciaries – NPI National Returns (www.ncreif.com)

The IMMEX is based on the performance of open end funds which are mainly invested in German commercial real estate. The redemption price of the open end fund shares as foundation of the return series is based on the fund assets' inventory value, and is ascertained daily, whereby the funds' real estate are appraised at least once a year.

Reference: MAURER, R.; REINER, F.; SEBASTIAN, S. (2004): "Characteristics of German Real Estate Return Distributions", *Journal of Real Estate Portfolio Management*, 2004, Jg. 10, S. 59-76.

Private equity

Because the database used in the previous study was not available any more, we go back to a private equity index for the UK and a venture capital index for the US provided by Datastream.

Source: DataStream DataStream Codes: UK-DS INV.TRUSTS PRIVATE EQUITY – PRICE INDEX – ITVCAPT POST VENTURE CAPITAL INDEX – PRICE INDEX – PVCINDX

Hedge funds

The HFRX Global Hedge Fund Index represents an investment in hedge funds. Index currency is USD. According to HFR the index is designed to be representative of the overall composition of the hedge fund universe. It is comprised of 8 strategies (convertible arbitrage, merger arbitrage, equity hedge, equity market neutral, relative value arbitrage, event driven, distressed securities and macro). The strategies are asset-weighted based on the distribution of assets in the hedge fund industry.

Funds that stop reporting or shut down are included in the database, so according to the provider there is no survivorship bias.

Source: DataStream

DataStream Codes: CS/TREMONT HEDGE FUND - NET ASSET VALUE - CSTHEDG CS/TREMONT HEDGE GLOBAL MACRO - NET ASSET VALUE - CSTGLMH CS/TREMONT HEDGE EVENT DRIVEN - NET ASSET VALUE - CSTEVDH CS/TREMONT HEDGE EQUITY MKT.NTRL. - NET ASSET VALUE - CSTEMNH

Commodities

The Reuter's Commodity Price Index is an arithmetic average of commodity futures prices with monthly rebalancing. According to the provider, the Reuter's Commodity Price Index is designed to provide timely and accurate representation of a long-only, broadly diversified investment in commodities.

Source: DataStream DataStream Codes: Reuters Commodities Index – PRICE INDEX – RECMDTY(PI)

3. Correlations of Property Stocks with other Asset Classes

3.1 Correlations with Stocks





period	Stocks USA	Stocks UK	Stocks Germany
11/90 - 1/95	0.579	0.815	0.780
II/91 - I/96	0.209	0.678	0.711
11/92 - 1/97	0.296	0.669	0.711
11/93 - 1/98	0.306	0.657	0.539
11/94 - 1/99	0.682	0.755	0.521
11/95 - 1/00	0.697	0.682	0.558
II/96 - I/01	0.519	0.616	0.458
11/97 - 1/02	0.600	0.669	0.593
11/98 - 1/03	0.674	0.730	0.676
11/99 - 1/04	0.693	0.669	0.708
11/00 - 1/05	0.635	0.646	0.674
II/01 - I/06	0.690	0.700	0.726
III/01-II/06	0.678	0.709	0.723
IV/01-III/06	0.593	0.648	0.644
I/02 - IV/06	0.588	0.643	0.637
11/02-1/07	0.592	0.645	0.637
111/02-11/07	0.445	0.523	0.489
IV/02-III/07	0.200	0.340	0.274
I/03-IV/07	0.386	0.424	0.277
11/03-1/08	0.500	0.537	0.392
mean of correlation	0.544	0.677	0.623
standard deviation of correlation	0.165	0.081	0.117
coefficient of variation of correlation	0.302	0.120	0.187

3.1.2 FTSE EPRA/NAREIT Europe Total Return Index

1



penou		JIUCKS UK	Stocks Germany
11/90 - 1/95	0.421	0.676	0.705
II/91 - I/96	0.140	0.556	0.602
11/92 - 1/97	0.150	0.485	0.777
11/93 - 1/98	0.197	0.657	0.738
11/94 - 1/99	0.526	0.767	0.797
11/95 - 1/00	0.479	0.652	0.563
II/96 - I/01	0.308	0.543	0.397
11/97 - 1/02	0.430	0.589	0.527
11/98 - 1/03	0.506	0.646	0.636
11/99 - 1/04	0.629	0.709	0.687
11/00 - 1/05	0.735	0.796	0.813
II/01 - I/06	0.764	0.826	0.830
III/01-II/06	0.765	0.819	0.826
IV/01-III/06	0.712	0.780	0.779
I/02 - IV/06	0.746	0.792	0.810
11/02-1/07	0.756	0.791	0.800
111/02-11/07	0.627	0.664	0.611
IV/02-III/07	0.462	0.601	0.472
I/03-IV/07	0.540	0.610	0.451
11/03-1/08	0.486	0.492	0.356
mean of correlation	0.463	0.665	0.674
standard deviation of correlation	0.213	0.101	0.131
coefficient of variation of correlation	0.459	0.152	0.195

3.1.3 FTSE EPRA/NAREIT United States Total Return Index



period	Stocks USA	Stocks UK	Stocks Germany
11/90 - 1/95	0.758	0.511	0.439
II/91 - I/96	0.399	-0.022	-0.213
11/92 - 1/97	0.300	-0.013	-0.047
11/93 - 1/98	0.242	0.052	-0.023
11/94 - 1/99	0.337	0.400	0.356
11/95 - 1/00	0.408	0.415	0.342
II/96 - I/01	0.211	0.328	0.184
11/97 - 1/02	0.272	0.373	0.317
11/98 - 1/03	0.300	0.391	0.409
11/99 - 1/04	0.558	0.606	0.534
11/00 - 1/05	0.601	0.589	0.588
II/01 - I/06	0.630	0.596	0.626
III/01-II/06	0.622	0.615	0.631
IV/01-III/06	0.568	0.563	0.574
I/02 - IV/06	0.591	0.576	0.598
11/02-1/07	0.598	0.576	0.593
111/02-11/07	0.551	0.521	0.472
IV/02-III/07	0.379	0.327	0.244
I/03-IV/07	0.511	0.394	0.248
11/03-1/08	0.468	0.355	0.232
mean of correlation	0.432	0.373	0.307
standard deviation of correlation	0.164	0.200	0.249
coefficient of variation of correlation	0.380	0.535	0.811

3.1.4 FTSE EPRA/NAREIT Australia Total Return Index



period	Stocks USA	Stocks UK	Stocks Germany
II/90 - I/95	0.460	0.324	0.290
II/91 - I/96	0.485	0.279	0.319
11/92 - 1/97	0.400	0.556	0.450
11/93 - 1/98	0.687	0.741	0.476
11/94 - 1/99	0.498	0.462	0.098
11/95 - 1/00	0.387	0.409	0.023
II/96 - I/01	0.487	0.484	0.127
11/97 - 1/02	0.413	0.411	0.096
11/98 - 1/03	0.271	0.227	0.025
11/99 - 1/04	0.311	0.285	0.186
11/00 - 1/05	0.411	0.348	0.223
II/01 - I/06	0.338	0.305	0.253
III/01-II/06	0.317	0.309	0.243
IV/01-III/06	0.398	0.350	0.304
I/02 - IV/06	0.440	0.369	0.346
11/02-1/07	0.426	0.353	0.328
111/02-11/07	0.382	0.302	0.268
IV/02-III/07	0.271	0.122	0.080
I/03-IV/07	0.409	0.218	0.110
11/03-1/08	0.620	0.580	0.460
mean of correlation	0.435	0.396	0.212
standard deviation of correlation	0.096	0.123	0.145
coefficient of variation of correlation	0.221	0.312	0.682

3.1.5 FTSE EPRA/NAREIT United Kingdom Total Return Index



period	Stocks USA	Stocks UK	Stocks Germany
11/90 - 1/95	0.494	0.701	0.546
II/91 - I/96	0.322	0.683	0.339
11/92 - 1/97	0.192	0.597	0.494
11/93 - 1/98	0.187	0.647	0.431
11/94 - 1/99	0.193	0.485	0.253
11/95 - 1/00	0.078	0.342	0.023
II/96 - I/01	-0.156	0.197	-0.185
11/97 - 1/02	0.012	0.272	0.067
11/98 - 1/03	0.153	0.371	0.317
11/99 - 1/04	0.470	0.629	0.541
11/00 - 1/05	0.675	0.769	0.761
II/01 - I/06	0.752	0.804	0.816
III/01-II/06	0.765	0.802	0.819
IV/01-III/06	0.733	0.772	0.792
1/02 - IV/06	0.785	0.798	0.843
11/02-1/07	0.782	0.778	0.809
111/02-11/07	0.704	0.692	0.651
IV/02-III/07	0.579	0.631	0.525
I/03-IV/07	0.642	0.645	0.508
11/03-1/08	0.543	0.477	0.370
mean of correlation	0.330	0.561	0.400
standard deviation of correlation	0.280	0.195	0.288
coefficient of variation of correlation	0.849	0.348	0.720

3.1.6 FTSE EPRA/NAREIT France Total Return Index

1



period	Stocks USA	Stocks UK	Stocks Germany
11/90 - 1/95	0.357	0.637	0.649
II/91 - I/96	0.086	0.519	0.553
11/92 - 1/97	0.097	0.425	0.692
11/93 - 1/98	0.080	0.548	0.779
11/94 - 1/99	0.264	0.491	0.700
11/95 - 1/00	0.143	0.327	0.423
II/96 - I/01	0.158	0.340	0.388
11/97 - 1/02	0.353	0.468	0.501
11/98 - 1/03	0.487	0.529	0.589
11/99 - 1/04	0.551	0.601	0.584
11/00 - 1/05	0.697	0.730	0.742
II/01 - I/06	0.600	0.679	0.658
III/01-II/06	0.590	0.666	0.646
IV/01-III/06	0.500	0.587	0.552
1/02 - IV/06	0.538	0.609	0.589
11/02-1/07	0.534	0.610	0.594
111/02-11/07	0.465	0.538	0.453
IV/02-III/07	0.361	0.534	0.364
I/03-IV/07	0.424	0.545	0.366
11/03-1/08	0.307	0.342	0.190
mean of correlation	0.324	0.519	0.591
standard deviation of correlation	0.234	0.121	0.116
coefficient of variation of correlation	0.722	0.233	0.197

3.1.7 FTSE EPRA/NAREIT Netherlands Total Return Index



period	Stocks USA	Stocks UK	Stocks Germany
II/90 - I/95	0.146	0.392	0.509
II/91 - I/96	0.192	0.491	0.669
11/92 - 1/97	0.136	0.417	0.818
11/93 - 1/98	0.158	0.372	0.703
11/94 - 1/99	0.538	0.542	0.801
11/95 - 1/00	0.621	0.554	0.648
II/96 - I/01	0.347	0.400	0.365
11/97 - 1/02	0.407	0.456	0.393
11/98 - 1/03	0.485	0.560	0.460
11/99 - 1/04	0.491	0.515	0.422
11/00 - 1/05	0.580	0.558	0.565
II/01 - I/06	0.634	0.642	0.636
III/01-II/06	0.623	0.630	0.624
IV/01-III/06	0.550	0.554	0.539
1/02 - IV/06	0.590	0.579	0.580
11/02-1/07	0.611	0.591	0.587
111/02-11/07	0.511	0.496	0.445
IV/02-III/07	0.357	0.393	0.281
I/03-IV/07	0.411	0.418	0.293
11/03-1/08	0.373	0.374	0.276
mean of correlation	0.408	0.491	0.570
standard deviation of correlation	0.170	0.081	0.154
coefficient of variation of correlation	0.416	0.165	0.270

3.1.8 FTSE EPRA/NAREIT Sweden Total Return Index



period	Stocks USA	Stocks UK	Stocks Germany
11/90 - 1/95	0.216	0.378	0.485
II/91 - I/96	0.029	0.269	0.437
11/92 - 1/97	0.113	0.279	0.439
11/93 - 1/98	-0.011	0.208	0.178
11/94 - 1/99	0.288	0.617	0.514
11/95 - 1/00	0.333	0.546	0.474
II/96 - I/01	0.239	0.511	0.418
11/97 - 1/02	0.439	0.595	0.677
11/98 - 1/03	0.593	0.723	0.791
11/99 - 1/04	0.753	0.865	0.840
11/00 - 1/05	0.752	0.881	0.855
II/01 - I/06	0.695	0.763	0.765
III/01-II/06	0.683	0.748	0.749
IV/01-III/06	0.615	0.705	0.695
I/02 - IV/06	0.617	0.704	0.697
II/02-I/07	0.621	0.706	0.699
111/02-11/07	0.551	0.632	0.557
IV/02-III/07	0.301	0.456	0.312
I/03-IV/07	0.348	0.475	0.324
11/03-1/08	0.259	0.306	0.178
mean of correlation	0.376	0.553	0.562
standard deviation of correlation	0.264	0.207	0.205
coefficient of variation of correlation	0.702	0.374	0.364

3.2 Correlations with Bonds

3.2.1 FTSE EPRA/NAREIT Global Total Return Index



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	0.095	0.547	0.436
II/91 - I/96	0.010	0.487	0.329
11/92 - 1/97	0.062	0.499	0.351
11/93 - 1/98	0.106	0.506	0.369
11/94 - 1/99	-0.282	-0.036	-0.086
11/95 - 1/00	-0.404	-0.148	-0.147
II/96 - I/01	-0.465	-0.190	-0.253
11/97 - 1/02	-0.613	-0.320	-0.444
II/98 - I/03	-0.696	-0.517	-0.599
11/99 - 1/04	-0.544	-0.476	-0.420
II/00 - I/05	-0.403	-0.526	-0.396
II/01 - I/06	-0.387	-0.337	-0.294
III/01-II/06	-0.338	-0.212	-0.193
IV/01-III/06	-0.115	-0.036	-0.049
I/02 - IV/06	-0.093	-0.050	-0.071
11/02-1/07	-0.079	-0.041	-0.057
111/02-11/07	0.076	0.176	0.138
IV/02-III/07	0.390	0.413	0.375
I/03-IV/07	0.141	0.144	0.349
II/03-I/08	-0.041	0.118	0.231
mean of correlation	-0.249	-0.016	-0.064
standard deviation of correlation	0.306	0.407	0.361
coefficient of variation of correlation	-1.227	-25.044	-5.632

3.2.2 FTSE EPRA/NAREIT Europe Total Return Index

1



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	0.089	0.418	0.331
II/91 - I/96	0.049	0.340	0.237
11/92 - 1/97	0.055	0.330	0.288
11/93 - 1/98	0.239	0.509	0.388
11/94 - 1/99	-0.181	-0.029	-0.038
11/95 - 1/00	-0.316	-0.318	-0.155
II/96 - I/01	-0.449	-0.403	-0.250
11/97 - 1/02	-0.588	-0.474	-0.500
11/98 - 1/03	-0.684	-0.711	-0.679
11/99 - 1/04	-0.507	-0.569	-0.433
11/00 - 1/05	-0.485	-0.510	-0.441
II/01 - I/06	-0.465	-0.397	-0.377
III/01-II/06	-0.434	-0.340	-0.310
IV/01-III/06	-0.253	-0.204	-0.193
I/02 - IV/06	-0.265	-0.249	-0.245
11/02-1/07	-0.246	-0.192	-0.201
111/02-11/07	-0.104	0.064	0.027
IV/02-III/07	0.071	0.172	0.183
I/03-IV/07	-0.100	-0.032	0.147
11/03-1/08	-0.151	-0.030	0.157
mean of correlation	-0.253	-0.138	-0.123
standard deviation of correlation	0.302	0.406	0.342
coefficient of variation of correlation	-1.195	-2.933	-2.777

3.2.3 FTSE EPRA/NAREIT United States Total Return Index



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	0.449	0.248	0.425
II/91 - I/96	0.550	0.175	0.333
11/92 - 1/97	0.387	0.135	0.345
11/93 - 1/98	0.305	0.067	0.109
11/94 - 1/99	0.079	-0.055	0.014
11/95 - 1/00	0.040	0.019	0.094
II/96 - I/01	0.029	-0.028	-0.001
11/97 - 1/02	-0.250	-0.283	-0.358
11/98 - 1/03	-0.436	-0.536	-0.469
11/99 - 1/04	-0.432	-0.421	-0.281
11/00 - 1/05	-0.224	-0.298	-0.255
II/01 - I/06	-0.220	-0.252	-0.200
III/01-II/06	-0.178	-0.131	-0.112
IV/01-III/06	-0.021	-0.014	-0.013
I/02 - IV/06	-0.025	-0.036	-0.039
11/02-1/07	-0.007	-0.001	-0.007
111/02-11/07	0.070	0.177	0.149
IV/02-III/07	0.413	0.451	0.408
I/03-IV/07	0.158	0.172	0.359
II/03-I/08	0.119	0.171	0.344
mean of correlation	0.033	-0.076	0.001
standard deviation of correlation	0.307	0.251	0.276
coefficient of variation of correlation	9.305	-3.319	272.072

3.2.4 FTSE EPRA/NAREIT Australia Total Return Index



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	0.522	0.514	0.576
II/91 - I/96	0.601	0.528	0.581
11/92 - 1/97	0.572	0.712	0.665
11/93 - 1/98	0.596	0.723	0.633
11/94 - 1/99	0.477	0.711	0.541
11/95 - 1/00	0.411	0.707	0.482
II/96 - I/01	0.265	0.722	0.421
11/97 - 1/02	0.245	0.628	0.387
11/98 - 1/03	0.076	0.416	0.206
11/99 - 1/04	0.049	0.166	0.097
11/00 - 1/05	-0.053	0.096	0.008
II/01 - I/06	0.041	0.168	0.106
III/01-II/06	0.061	0.239	0.134
IV/01-III/06	0.126	0.270	0.183
1/02 - IV/06	0.081	0.136	0.047
11/02-1/07	0.018	0.147	0.021
111/02-11/07	0.091	0.222	0.095
IV/02-III/07	0.337	0.432	0.263
I/03-IV/07	-0.011	0.028	0.172
11/03-1/08	-0.245	-0.009	-0.035
mean of correlation	0.289	0.465	0.353
standard deviation of correlation	0.253	0.244	0.237
coefficient of variation of correlation	0.875	0.526	0.671

3.2.5 FTSE EPRA/NAREIT United Kingdom Total Return Index



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	0.356	0.543	0.412
II/91 - I/96	0.295	0.517	0.329
11/92 - 1/97	0.289	0.561	0.517
11/93 - 1/98	0.444	0.602	0.494
11/94 - 1/99	0.060	-0.072	0.010
11/95 - 1/00	0.009	-0.140	-0.005
II/96 - I/01	-0.031	-0.167	-0.044
11/97 - 1/02	-0.235	-0.298	-0.313
11/98 - 1/03	-0.434	-0.576	-0.499
11/99 - 1/04	-0.374	-0.473	-0.328
11/00 - 1/05	-0.379	-0.362	-0.371
II/01 - I/06	-0.439	-0.349	-0.416
III/01-II/06	-0.422	-0.326	-0.370
IV/01-III/06	-0.289	-0.224	-0.285
I/02 - IV/06	-0.314	-0.275	-0.337
11/02-1/07	-0.293	-0.184	-0.273
111/02-11/07	-0.178	0.041	-0.064
IV/02-III/07	0.023	0.198	0.110
I/03-IV/07	-0.120	0.016	0.090
II/03-I/08	-0.145	0.023	0.117
mean of correlation	-0.052	-0.023	-0.025
standard deviation of correlation	0.313	0.413	0.343
coefficient of variation of correlation	-6.002	-18.196	-13.503

3.2.6 FTSE EPRA/NAREIT France Total Return Index

1



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	0.225	0.518	0.501
II/91 - I/96	0.184	0.427	0.425
11/92 - 1/97	0.125	0.329	0.372
11/93 - 1/98	0.068	0.363	0.309
11/94 - 1/99	-0.042	0.172	0.132
11/95 - 1/00	-0.237	-0.263	-0.140
II/96 - I/01	-0.415	-0.304	-0.202
11/97 - 1/02	-0.515	-0.357	-0.358
11/98 - 1/03	-0.532	-0.537	-0.515
11/99 - 1/04	-0.496	-0.586	-0.403
II/00 - I/05	-0.448	-0.405	-0.282
II/01 - I/06	-0.385	-0.348	-0.259
III/01-II/06	-0.331	-0.243	-0.159
IV/01-III/06	-0.104	-0.074	-0.005
I/02 - IV/06	-0.120	-0.112	-0.050
11/02-1/07	-0.130	-0.143	-0.076
111/02-11/07	-0.037	0.076	0.106
IV/02-III/07	0.108	0.171	0.234
I/03-IV/07	-0.048	-0.010	0.187
11/03-1/08	-0.053	-0.002	0.232
mean of correlation	-0.186	-0.072	-0.019
standard deviation of correlation	0.283	0.362	0.326
coefficient of variation of correlation	-1.524	-5.029	-16.918

3.2.7 FTSE EPRA/NAREIT Netherlands Total Return Index



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	-0.077	0.239	0.358
II/91 - I/96	0.031	0.297	0.245
11/92 - 1/97	-0.117	0.222	0.123
11/93 - 1/98	-0.045	0.262	0.169
11/94 - 1/99	-0.338	-0.188	-0.188
11/95 - 1/00	-0.483	-0.276	-0.204
II/96 - I/01	-0.522	-0.212	-0.145
11/97 - 1/02	-0.577	-0.336	-0.333
II/98 - I/03	-0.640	-0.472	-0.429
11/99 - 1/04	-0.419	-0.280	-0.159
11/00 - 1/05	-0.358	-0.319	-0.244
II/01 - I/06	-0.287	-0.268	-0.172
III/01-II/06	-0.238	-0.164	-0.076
IV/01-III/06	-0.020	-0.003	0.071
I/02 - IV/06	-0.037	-0.035	0.034
11/02-1/07	0.003	0.008	0.087
111/02-11/07	0.118	0.205	0.254
IV/02-III/07	0.306	0.307	0.410
I/03-IV/07	0.174	0.161	0.376
II/03-I/08	0.144	0.161	0.363
mean of correlation	-0.265	-0.079	-0.043
standard deviation of correlation	0.261	0.277	0.251
coefficient of variation of correlation	-0.986	-3.497	-5.803

3.2.8 FTSE EPRA/NAREIT Sweden Total Return Index

1



period	Bonds USA	Bonds UK	Bonds Germany
11/90 - 1/95	-0.305	0.070	0.121
II/91 - I/96	-0.282	0.025	0.095
11/92 - 1/97	-0.196	0.064	0.141
11/93 - 1/98	0.211	0.189	0.222
11/94 - 1/99	0.029	0.296	0.285
11/95 - 1/00	-0.104	0.017	0.121
II/96 - I/01	-0.147	-0.202	-0.062
11/97 - 1/02	-0.514	-0.390	-0.478
11/98 - 1/03	-0.612	-0.570	-0.598
11/99 - 1/04	-0.608	-0.516	-0.506
11/00 - 1/05	-0.551	-0.523	-0.472
II/01 - I/06	-0.419	-0.317	-0.285
III/01-II/06	-0.367	-0.216	-0.187
IV/01-III/06	-0.221	-0.094	-0.090
I/02 - IV/06	-0.208	-0.113	-0.115
11/02-1/07	-0.191	-0.108	-0.103
111/02-11/07	-0.091	0.098	0.077
IV/02-III/07	0.239	0.381	0.356
I/03-IV/07	0.123	0.236	0.323
11/03-1/08	0.105	0.254	0.360
mean of correlation	-0.257	-0.127	-0.101
standard deviation of correlation	0.249	0.275	0.297
coefficient of variation of correlation	-0.968	-2.170	-2.954

3.3 Correlations with Money / Treasury Bonds



3.3.1 FTSE EPRA/NAREIT Global Total Return Index

neriod	Money US	Money IIK	Money Germany
1/90 - 1/95	-0.112	-0 / 19	-0 327
11/91 - 1/96	-0.017	-0.378	-0.418
11/92 - 1/97	-0.218	-0.285	-0.207
11/93 - 1/98	-0.496	-0.330	-0.271
11/9/ - 1/99	-0.221	-0.190	-0.288
1/95 - 1/00	-0.0/49	-0.117	-0.38/
1/96 - 1/01	0.049	-0.06/	-0.188
11/97 - 1/02	0.055	0.020	0.013
11/98 - 1/03	0.190	0.040	0.158
1/99 - 1/04	0.150	0.040	0.150
11/00 - 1/05	0.272	0.421	0.310
1/00 1/05	0.134	0.422	0.330
II/01 I/06	0.272	0.345	0.350
IV/01-III/06	0.304	0.000	0.259
10/01-11/06	0.039	0.092	0.090
1/02 - 10/00	0.130	0.215	0.174
11/02-1/07	0.124	0.217	0.171
111/02-11/07	0.081	0.096	0.111
1/02-11/07	0.041	-0.082	-0.011
I/03-IV/07	0.071	0.097	-0.041
11/03-1/08	0.352	0.000	-0.132
mean of correlation	0.004	-0.041	-0.075
standard deviation of correlation	0.227	0.280	0.259
coefficient of variation of correlation	59.243	-6.797	-3.430

3.3.2 FTSE EPRA/NAREIT Europe Total Return Index

1



period	Money US	Money UK	Money Germany
II/90 - I/95	0.141	-0.320	-0.439
II/91 - I/96	0.209	-0.248	-0.486
11/92 - 1/97	-0.022	-0.138	-0.124
11/93 - 1/98	-0.543	-0.197	0.012
11/94 - 1/99	-0.237	-0.006	0.066
11/95 - 1/00	0.180	0.028	-0.263
II/96 - I/01	0.141	0.021	-0.107
11/97 - 1/02	0.345	0.181	0.188
11/98 - 1/03	0.211	0.242	0.239
11/99 - 1/04	0.228	0.528	0.123
11/00 - 1/05	0.299	0.647	0.319
II/01 - I/06	0.348	0.557	0.352
III/01-II/06	0.329	0.512	0.276
IV/01-III/06	0.118	0.385	0.151
I/02 - IV/06	0.087	0.439	0.198
11/02-1/07	0.090	0.409	0.171
111/02-11/07	0.081	0.238	0.083
IV/02-III/07	0.066	0.040	-0.115
I/03-IV/07	0.225	0.189	-0.035
11/03-1/08	0.214	0.030	-0.198
mean of correlation	0.114	0.112	-0.009
standard deviation of correlation	0.247	0.306	0.245
coefficient of variation of correlation	2.172	2.729	-28.676

CORRELATIONS WITH MONEY / TREASURY BONDS

3.3.3 FTSE EPRA/NAREIT United States Total Return Index



period	Money US	Money UK	Money Germany
11/90 - 1/95	-0.439	-0.384	-0.158
II/91 - I/96	-0.493	-0.346	-0.096
11/92 - 1/97	-0.363	-0.184	-0.024
11/93 - 1/98	-0.227	0.315	0.127
11/94 - 1/99	0.035	0.430	0.072
11/95 - 1/00	-0.021	0.343	-0.206
II/96 - I/01	0.140	0.350	0.055
11/97 - 1/02	0.107	0.255	0.180
II/98 - I/03	0.051	0.172	0.159
11/99 - 1/04	0.157	0.228	-0.001
11/00 - 1/05	0.096	0.280	0.240
II/01 - I/06	0.080	0.206	0.155
III/01-II/06	0.130	0.213	0.111
IV/01-III/06	-0.055	0.067	0.002
I/02 - IV/06	-0.072	0.095	0.029
11/02-1/07	-0.073	0.082	0.013
111/02-11/07	-0.043	-0.026	-0.049
IV/02-III/07	-0.108	-0.208	-0.149
I/03-IV/07	-0.020	-0.005	-0.129
11/03-1/08	0.031	-0.062	-0.188
mean of correlation	-0.080	0.112	0.026
standard deviation of correlation	0.225	0.259	0.120
coefficient of variation of correlation	-2.822	2.320	4.678

3.3.4 FTSE EPRA/NAREIT Australia Total Return Index

1



period	Money US	Money UK	Money Germany
11/90 - 1/95	-0.519	-0.148	-0.150
II/91 - I/96	-0.507	-0.084	-0.074
11/92 - 1/97	-0.428	-0.105	-0.096
11/93 - 1/98	-0.634	0.078	0.052
11/94 - 1/99	-0.547	0.000	0.111
11/95 - 1/00	-0.415	0.120	0.096
II/96 - I/01	0.135	0.155	0.114
11/97 - 1/02	0.009	0.058	0.091
11/98 - 1/03	-0.128	-0.151	0.134
11/99 - 1/04	-0.119	0.226	0.162
11/00 - 1/05	0.213	0.209	0.118
II/01 - I/06	0.101	0.098	0.043
III/01-II/06	0.170	0.132	0.059
IV/01-III/06	0.191	0.290	0.211
I/02 - IV/06	0.119	0.336	0.279
11/02-1/07	0.156	0.267	0.262
111/02-11/07	0.131	0.221	0.243
IV/02-III/07	0.088	0.149	0.216
I/03-IV/07	0.282	0.330	0.260
11/03-1/08	0.644	0.323	0.225
mean of correlation	-0.195	0.060	0.071
standard deviation of correlation	0.318	0.149	0.115
coefficient of variation of correlation	-1.630	2.469	1.626

3.3.5 FTSE EPRA/NAREIT United Kingdom Total Return Index



period	Money US	Money UK	Money Germany
11/90 - 1/95	0.022	-0.423	-0.398
II/91 - I/96	0.058	-0.398	-0.430
11/92 - 1/97	-0.177	-0.437	-0.331
11/93 - 1/98	-0.479	-0.186	-0.225
11/94 - 1/99	-0.092	0.124	-0.031
11/95 - 1/00	0.084	0.004	-0.312
II/96 - I/01	0.100	-0.040	-0.031
11/97 - 1/02	0.308	0.154	0.241
II/98 - I/03	0.157	0.175	0.242
11/99 - 1/04	0.192	0.377	0.051
11/00 - 1/05	0.290	0.566	0.319
II/01 - I/06	0.326	0.545	0.365
III/01-II/06	0.293	0.500	0.296
IV/01-III/06	0.139	0.416	0.205
I/02 - IV/06	0.073	0.441	0.233
11/02-1/07	0.085	0.380	0.186
111/02-11/07	0.091	0.228	0.103
IV/02-III/07	0.066	0.036	-0.074
I/03-IV/07	0.200	0.167	-0.013
II/03-I/08	0.139	-0.003	-0.177
mean of correlation	0.074	0.054	-0.035
standard deviation of correlation	0.219	0.336	0.254
coefficient of variation of correlation	2.963	6.264	-7.162

3.3.6 FTSE EPRA/NAREIT France Total Return Index

1



period	Money US	Money UK	Money Germany
11/90 - 1/95	-0.082	-0.393	-0.333
II/91 - I/96	-0.097	-0.354	-0.334
11/92 - 1/97	-0.255	-0.228	-0.036
11/93 - 1/98	-0.447	-0.273	0.076
11/94 - 1/99	-0.373	-0.114	0.195
11/95 - 1/00	0.112	-0.087	-0.095
II/96 - I/01	0.151	-0.067	-0.057
11/97 - 1/02	0.276	0.093	0.129
II/98 - I/03	0.152	0.394	0.170
11/99 - 1/04	0.166	0.568	0.058
II/00 - I/05	0.314	0.678	0.247
II/01 - I/06	0.309	0.471	0.301
III/01-II/06	0.277	0.405	0.195
IV/01-III/06	0.046	0.275	0.095
I/02 - IV/06	0.011	0.310	0.127
II/02-I/07	0.006	0.321	0.142
111/02-11/07	0.034	0.171	0.058
IV/02-III/07	0.017	0.038	-0.068
I/03-IV/07	0.234	0.177	0.057
11/03-1/08	0.118	0.001	-0.100
mean of correlation	0.032	0.062	0.018
standard deviation of correlation	0.249	0.346	0.182
coefficient of variation of correlation	7.731	5.557	10.112

3.3.7 FTSE EPRA/NAREIT Netherlands Total Return Index



period	Money US	Money UK	Money Germany
11/90 - 1/95	0.010	-0.374	-0.544
II/91 - I/96	-0.029	-0.359	-0.445
11/92 - 1/97	-0.079	-0.255	0.022
11/93 - 1/98	-0.435	-0.379	-0.022
11/94 - 1/99	-0.197	-0.172	-0.031
11/95 - 1/00	-0.012	-0.129	-0.435
II/96 - I/01	-0.033	-0.149	-0.290
11/97 - 1/02	0.109	-0.026	-0.119
11/98 - 1/03	0.039	0.022	-0.103
11/99 - 1/04	0.016	0.201	-0.185
11/00 - 1/05	0.173	0.425	0.168
II/01 - I/06	0.217	0.343	0.126
III/01-II/06	0.183	0.281	0.033
IV/01-III/06	-0.038	0.152	-0.061
I/02 - IV/06	-0.092	0.158	-0.048
11/02-1/07	-0.104	0.159	-0.069
111/02-11/07	-0.107	0.038	-0.123
IV/02-III/07	-0.122	-0.142	-0.287
I/03-IV/07	0.015	-0.025	-0.218
11/03-1/08	0.041	-0.068	-0.272
mean of correlation	-0.021	-0.068	-0.160
standard deviation of correlation	0.166	0.248	0.178
coefficient of variation of correlation	-7.877	-3.651	-1.111

3.3.8 FTSE EPRA/NAREIT Sweden Total Return Index

1



period	Money US	Money UK	Money Germany
11/90 - 1/95	0.427	-0.173	-0.283
II/91 - I/96	0.504	-0.099	-0.319
11/92 - 1/97	0.384	-0.028	-0.064
11/93 - 1/98	-0.188	0.198	0.057
11/94 - 1/99	-0.236	0.144	0.083
11/95 - 1/00	0.134	0.328	-0.007
II/96 - I/01	0.233	0.329	0.117
11/97 - 1/02	0.334	0.343	0.384
II/98 - I/03	0.175	0.442	0.348
11/99 - 1/04	0.218	0.575	0.270
II/00 - I/05	0.320	0.555	0.321
II/01 - I/06	0.268	0.450	0.269
III/01-II/06	0.241	0.390	0.170
IV/01-III/06	0.035	0.213	0.000
I/02 - IV/06	0.095	0.322	0.070
II/02-I/07	0.084	0.329	0.069
111/02-11/07	0.095	0.187	0.000
IV/02-III/07	0.046	-0.002	-0.144
I/03-IV/07	0.209	0.097	-0.057
11/03-1/08	0.127	-0.080	-0.219
mean of correlation	0.202	0.234	0.088
standard deviation of correlation	0.190	0.243	0.219
coefficient of variation of correlation	0.940	1.042	2.473

3.4 Correlations with Emerging Market Stocks





period	Emerging Markets Europe	Emerging Markets Asia	Emerging Markets Latin America
11/90 - 1/95	0.635	0.803	0.493
II/91 - I/96	0.612	0.663	0.255
11/92 - 1/97	0.630	0.697	0.384
11/93 - 1/98	0.478	0.756	0.425
11/94 - 1/99	0.631	0.681	0.672
11/95 - 1/00	0.627	0.735	0.832
II/96 - I/01	0.541	0.565	0.748
11/97 - 1/02	0.633	0.624	0.812
11/98 - 1/03	0.723	0.652	0.786
11/99 - 1/04	0.622	0.567	0.682
11/00 - 1/05	0.650	0.517	0.645
II/01 - I/06	0.759	0.760	0.699
III/01-II/06	0.773	0.784	0.708
IV/01-III/06	0.642	0.707	0.575
1/02 - IV/06	0.652	0.741	0.580
11/02-1/07	0.640	0.743	0.573
111/02-11/07	0.585	0.542	0.421
IV/02-III/07	0.524	0.308	0.229
I/03-IV/07	0.444	0.340	0.313
11/03-1/08	0.538	0.457	0.383
mean of correlation	0.624	0.657	0.596
standard deviation of correlation	0.067	0.105	0.188
coefficient of variation of correlation	0.107	0.160	0.316

3.4.2 FTSE EPRA/NAREIT Europe Total Return Index



period	Emerging Markets	Emerging Markets	Emerging Markets
	Europe	Asia	Latin America
11/90 - 1/95	0.559	0.544	0.310
II/91 - I/96	0.622	0.354	0.110
11/92 - 1/97	0.685	0.376	0.371
II/93 - I/98	0.555	0.473	0.261
11/94 - 1/99	0.600	0.309	0.418
11/95 - 1/00	0.559	0.416	0.577
II/96 - I/01	0.435	0.268	0.475
11/97 - 1/02	0.490	0.409	0.573
11/98 - 1/03	0.510	0.455	0.635
11/99 - 1/04	0.482	0.543	0.615
11/00 - 1/05	0.564	0.564	0.732
II/01 - I/06	0.641	0.704	0.740
III/01-II/06	0.652	0.709	0.750
IV/01-III/06	0.507	0.627	0.650
I/02 - IV/06	0.603	0.768	0.687
11/02-1/07	0.614	0.766	0.685
111/02-11/07	0.557	0.520	0.519
IV/02-III/07	0.464	0.177	0.331
I/03-IV/07	0.391	0.243	0.349
11/03-1/08	0.359	0.186	0.312
mean of correlation	0.552	0.457	0.489
standard deviation of correlation	0.077	0.142	0.195
coefficient of variation of correlation	0.139	0.310	0.399

3.4.3 FTSE EPRA/NAREIT United States Total Return Index



period	Emerging Markets Europe	Emerging Markets Asia	Emerging Markets Latin America
11/90 - 1/95	0.165	0.306	0.189
II/91 - I/96	-0.090	-0.256	-0.106
11/92 - 1/97	-0.202	-0.298	-0.126
11/93 - 1/98	-0.133	-0.359	-0.156
11/94 - 1/99	0.380	0.050	0.326
11/95 - 1/00	0.313	0.155	0.418
II/96 - I/01	0.182	-0.002	0.294
11/97 - 1/02	0.302	0.152	0.431
11/98 - 1/03	0.262	0.274	0.437
11/99 - 1/04	0.312	0.410	0.506
11/00 - 1/05	0.474	0.427	0.605
II/01 - I/06	0.570	0.617	0.633
III/01-II/06	0.590	0.652	0.644
IV/01-III/06	0.490	0.596	0.568
1/02 - IV/06	0.559	0.702	0.581
11/02-1/07	0.562	0.703	0.577
111/02-11/07	0.552	0.532	0.482
IV/02-III/07	0.488	0.335	0.317
I/03-IV/07	0.404	0.367	0.367
11/03-1/08	0.381	0.339	0.358
mean of correlation	0.262	0.179	0.309
standard deviation of correlation	0.223	0.299	0.252
coefficient of variation of correlation	0.852	1.674	0.818

3.4.4 FTSE EPRA/NAREIT Australia Total Return Index

1



period	Emerging Markets Europe	Emerging Markets Asia	Emerging Markets Latin America
11/90 - 1/95	0.601	0.367	0.023
II/91 - I/96	0.475	0.301	-0.077
11/92 - 1/97	0.455	0.270	-0.063
11/93 - 1/98	0.247	0.258	-0.061
11/94 - 1/99	-0.020	0.200	-0.097
11/95 - 1/00	-0.125	0.065	0.072
II/96 - I/01	0.015	0.084	0.096
11/97 - 1/02	0.012	0.016	0.072
II/98 - I/03	-0.051	-0.016	-0.061
11/99 - 1/04	0.061	-0.184	0.055
11/00 - 1/05	0.120	0.026	0.227
II/01 - I/06	0.050	0.074	0.236
III/01-II/06	0.039	0.082	0.215
IV/01-III/06	0.031	0.146	0.245
I/02 - IV/06	0.128	0.273	0.345
11/02-1/07	0.176	0.380	0.389
111/02-11/07	0.137	0.301	0.333
IV/02-III/07	0.054	0.188	0.221
I/03-IV/07	0.013	0.259	0.247
11/03-1/08	0.332	0.543	0.415
mean of correlation	0.155	0.142	0.063
standard deviation of correlation	0.238	0.155	0.145
coefficient of variation of correlation	1.540	1.093	2.320





period	Emerging Markets Europe	Emerging Markets Asia	Emerging Markets Latin America
11/90 - 1/95	0.284	0.421	0.043
II/91 - I/96	0.476	0.283	-0.067
11/92 - 1/97	0.527	0.496	0.281
11/93 - 1/98	0.582	0.530	0.172
11/94 - 1/99	0.373	0.174	0.344
11/95 - 1/00	0.195	0.169	0.317
II/96 - I/01	-0.049	-0.062	0.131
11/97 - 1/02	0.110	0.128	0.298
11/98 - 1/03	0.129	0.243	0.380
11/99 - 1/04	0.248	0.397	0.434
11/00 - 1/05	0.401	0.467	0.645
II/01 - I/06	0.533	0.664	0.714
III/01-II/06	0.549	0.668	0.730
IV/01-III/06	0.437	0.613	0.672
I/02 - IV/06	0.563	0.795	0.719
11/02-1/07	0.582	0.788	0.709
111/02-11/07	0.551	0.581	0.582
IV/02-III/07	0.467	0.276	0.413
I/03-IV/07	0.410	0.325	0.430
11/03-1/08	0.341	0.221	0.368
mean of correlation	0.335	0.347	0.321
standard deviation of correlation	0.195	0.214	0.240
coefficient of variation of correlation	0.582	0.615	0.747

3.4.6 FTSE EPRA/NAREIT France Total Return Index

1



period	Emerging Markets Europe	Emerging Markets Asia	Emerging Markets Latin America
11/90 - 1/95	0.407	0.446	0.373
II/91 - I/96	0.414	0.274	0.201
11/92 - 1/97	0.575	0.312	0.305
11/93 - 1/98	0.408	0.365	0.122
11/94 - 1/99	0.249	0.120	-0.058
11/95 - 1/00	0.214	0.257	0.044
II/96 - I/01	0.193	0.230	0.047
11/97 - 1/02	0.248	0.354	0.170
II/98 - I/03	0.395	0.346	0.395
11/99 - 1/04	0.515	0.531	0.578
II/00 - I/05	0.605	0.574	0.751
II/01 - I/06	0.589	0.527	0.651
III/01-II/06	0.600	0.535	0.661
IV/01-III/06	0.415	0.407	0.516
I/02 - IV/06	0.505	0.522	0.551
11/02-1/07	0.486	0.544	0.551
111/02-11/07	0.472	0.357	0.438
IV/02-III/07	0.411	0.129	0.323
I/03-IV/07	0.359	0.210	0.324
11/03-1/08	0.263	0.077	0.238
mean of correlation	0.403	0.366	0.323
standard deviation of correlation	0.135	0.130	0.226
coefficient of variation of correlation	0.335	0.356	0.701

3.4.7 FTSE EPRA/NAREIT Netherlands Total Return Index



period	Emerging Markets Europe	Emerging Markets Asia	Emerging Markets Latin America
11/90 - 1/95	0.623	0.504	0.378
II/91 - I/96	0.676	0.522	0.282
11/92 - 1/97	0.694	0.408	0.369
11/93 - 1/98	0.598	0.506	0.367
11/94 - 1/99	0.662	0.345	0.460
11/95 - 1/00	0.609	0.456	0.658
II/96 - I/01	0.377	0.361	0.554
11/97 - 1/02	0.359	0.446	0.578
11/98 - 1/03	0.407	0.447	0.608
11/99 - 1/04	0.312	0.491	0.563
11/00 - 1/05	0.441	0.531	0.629
II/01 - I/06	0.543	0.541	0.583
III/01-II/06	0.558	0.548	0.598
IV/01-III/06	0.384	0.440	0.457
1/02 - IV/06	0.479	0.566	0.487
11/02-1/07	0.479	0.537	0.476
111/02-11/07	0.441	0.346	0.346
IV/02-III/07	0.358	0.036	0.164
I/03-IV/07	0.330	0.100	0.180
11/03-1/08	0.308	0.095	0.175
mean of correlation	0.509	0.450	0.484
standard deviation of correlation	0.134	0.103	0.140
coefficient of variation of correlation	0.263	0.229	0.289

3.4.8 FTSE EPRA/NAREIT Sweden Total Return Index



period	Emerging Markets Europe	Emerging Markets Asia	Emerging Markets Latin America
11/90 - 1/95	0.405	0.252	0.284
II/91 - I/96	0.316	0.058	0.108
11/92 - 1/97	0.197	-0.073	0.251
11/93 - 1/98	-0.027	-0.224	0.037
11/94 - 1/99	0.145	-0.034	0.094
11/95 - 1/00	0.200	0.117	0.361
II/96 - I/01	0.243	-0.005	0.283
11/97 - 1/02	0.504	0.320	0.539
11/98 - 1/03	0.504	0.360	0.602
11/99 - 1/04	0.549	0.500	0.694
11/00 - 1/05	0.571	0.555	0.747
II/01 - I/06	0.470	0.658	0.597
III/01-II/06	0.489	0.660	0.610
IV/01-III/06	0.337	0.578	0.502
I/02 - IV/06	0.336	0.620	0.513
11/02-1/07	0.320	0.607	0.501
111/02-11/07	0.309	0.423	0.389
IV/02-III/07	0.188	0.115	0.140
I/03-IV/07	0.170	0.175	0.150
11/03-1/08	0.103	0.070	0.077
mean of correlation	0.316	0.221	0.384
standard deviation of correlation	0.192	0.284	0.228
coefficient of variation of correlation	0.607	1.287	0.594

3.5 Correlations with Direct Real Estate



3.5.1 FTSE EPRA/NAREIT Global Total Return Index

period	NPI	IMMEX
11/90 - 1/95	-0.089	0.193
II/91 - I/96	0.047	0.056
11/92 - 1/97	-0.141	0.168
11/93 - 1/98	-0.424	0.236
11/94 - 1/99	-0.318	0.068
11/95 - 1/00	-0.526	0.001
II/96 - I/01	-0.539	-0.004
11/97 - 1/02	-0.309	-0.143
11/98 - 1/03	-0.031	-0.117
11/99 - 1/04	0.248	-0.246
11/00 - 1/05	0.255	-0.181
II/01 - I/06	0.428	-0.449
III/01-II/06	0.372	-0.566
IV/01-III/06	0.348	-0.392
1/02 - IV/06	0.458	-0.463
11/02-1/07	0.495	-0.398
111/02-11/07	0.335	-0.486
IV/02-III/07	0.247	-0.422
I/03-IV/07	0.188	-0.521
11/03-1/08	0.098	
mean of correlation	-0.060	-0.014
standard deviation of correlation	0.330	0.191
coefficient of variation of correlation	-5.463	-13.405

3.5.2 FTSE EPRA/NAREIT Europe Total Return Index

1



period	NPI	IMMEX
11/90 - 1/95	0.097	0.048
II/91 - I/96	0.266	-0.044
11/92 - 1/97	0.033	0.148
11/93 - 1/98	-0.092	0.279
11/94 - 1/99	0.079	-0.041
11/95 - 1/00	-0.223	-0.077
II/96 - I/01	-0.257	-0.073
11/97 - 1/02	-0.068	-0.252
11/98 - 1/03	-0.020	-0.248
11/99 - 1/04	0.205	-0.346
11/00 - 1/05	0.350	-0.367
II/01 - I/06	0.396	-0.512
III/01-II/06	0.334	-0.564
IV/01-III/06	0.305	-0.416
1/02 - IV/06	0.358	-0.395
11/02-1/07	0.396	-0.435
111/02-11/07	0.210	-0.554
IV/02-III/07	0.085	-0.556
I/03-IV/07	0.098	-0.656
II/03-I/08	-0.018	
mean of correlation	0.085	-0.113
standard deviation of correlation	0.208	0.231
coefficient of variation of correlation	2.450	-2.048

3.5.3 FTSE EPRA/NAREIT United States Total Return Index



period	NPI	IMMEX
11/90 - 1/95	-0.324	0.251
II/91 - I/96	-0.306	0.299
11/92 - 1/97	0.026	0.369
11/93 - 1/98	0.294	-0.069
11/94 - 1/99	-0.273	0.187
11/95 - 1/00	-0.327	0.205
II/96 - I/01	-0.243	0.135
11/97 - 1/02	-0.170	-0.084
11/98 - 1/03	-0.160	-0.080
11/99 - 1/04	0.186	-0.303
11/00 - 1/05	0.497	-0.189
II/01 - I/06	0.421	-0.278
III/01-II/06	0.388	-0.400
IV/01-III/06	0.366	-0.273
1/02 - IV/06	0.405	-0.279
11/02-1/07	0.439	-0.292
111/02-11/07	0.297	-0.431
IV/02-III/07	0.212	-0.329
I/03-IV/07	0.179	-0.456
11/03-1/08	0.143	
mean of correlation	-0.003	0.046
standard deviation of correlation	0.282	0.212
coefficient of variation of correlation	-91.792	4.634

3.5.4 FTSE EPRA/NAREIT Australia Total Return Index

1



Mean of correlation denotes the average correlation of property stocks and the other asset class in the entire considered period. The mean is obtained by dividing the sum of the correlations in the entire considered period by the number of correlations. Standard deviation of correlation is the average dispersion of the correlation from the mean in the entire considered period. The coefficient of variation denotes the ratio "standard deviation of correlation / mean of correlation". In other words, the coefficient of variation is the standard deviation expressed as a percentage of the mean. Consequently, it is a dimensionless number that allows comparison of the variation of populations with different mean values.

0.706

0.610

0.553

0.521

0.543

0.521

0.191

0.301

1.573

-0.173

-0.270

-0.274

-0.156

-0.395

0.202

0.235

1.163

I/02 - IV/06

11/02-1/07

111/02-11/07

IV/02-III/07

I/03-IV/07

11/03-1/08

mean of correlation

standard deviation of correlation

coefficient of variation of correlation

3.5.5 FTSE EPRA/NAREIT United Kingdom Total Return Index



period	NPI	IMMEX
11/90 - 1/95	-0.027	-0.033
II/91 - I/96	0.126	-0.022
11/92 - 1/97	-0.359	0.404
11/93 - 1/98	-0.183	0.222
11/94 - 1/99	-0.166	-0.096
11/95 - 1/00	-0.241	-0.080
II/96 - I/01	-0.170	-0.098
11/97 - 1/02	-0.098	-0.228
11/98 - 1/03	-0.068	-0.193
11/99 - 1/04	0.207	-0.337
11/00 - 1/05	0.509	-0.346
II/01 - I/06	0.478	-0.518
III/01-II/06	0.419	-0.547
IV/01-III/06	0.398	-0.446
I/02 - IV/06	0.429	-0.405
11/02-1/07	0.448	-0.505
111/02-11/07	0.285	-0.604
IV/02-III/07	0.170	-0.589
I/03-IV/07	0.182	-0.671
11/03-1/08	0.083	
mean of correlation	0.039	-0.114
standard deviation of correlation	0.261	0.238
coefficient of variation of correlation	6.657	-2.089

3.5.6 FTSE EPRA/NAREIT France Total Return Index

1



period	NPI	IMMEX
11/90 - 1/95	0.002	0.396
II/91 - I/96	0.120	0.289
11/92 - 1/97	0.004	0.279
11/93 - 1/98	-0.002	0.225
11/94 - 1/99	0.273	0.022
11/95 - 1/00	0.009	-0.118
II/96 - I/01	0.081	-0.131
11/97 - 1/02	0.196	-0.232
11/98 - 1/03	0.109	-0.264
11/99 - 1/04	0.107	-0.448
11/00 - 1/05	0.272	-0.488
II/01 - I/06	0.267	-0.437
III/01-II/06	0.183	-0.507
IV/01-III/06	0.149	-0.326
1/02 - IV/06	0.184	-0.312
11/02-1/07	0.183	-0.210
111/02-11/07	0.048	-0.383
IV/02-III/07	-0.043	-0.367
I/03-IV/07	0.003	-0.517
II/03-I/08	-0.121	
mean of correlation	0.103	-0.062
standard deviation of correlation	0.137	0.313
coefficient of variation of correlation	1.341	-5.089

3.5.7 FTSE EPRA/NAREIT Netherlands Total Return Index



period	NPI	IMMEX
11/90 - 1/95	-0.098	0.208
II/91 - I/96	-0.030	0.066
11/92 - 1/97	0.062	-0.036
11/93 - 1/98	-0.148	0.082
11/94 - 1/99	0.050	-0.167
11/95 - 1/00	-0.190	-0.089
II/96 - I/01	-0.281	-0.150
11/97 - 1/02	-0.144	-0.234
11/98 - 1/03	-0.066	-0.312
11/99 - 1/04	0.060	-0.337
11/00 - 1/05	0.309	-0.385
II/01 - I/06	0.314	-0.304
III/01-II/06	0.226	-0.375
IV/01-III/06	0.199	-0.191
I/02 - IV/06	0.215	-0.171
11/02-1/07	0.282	-0.186
111/02-11/07	0.134	-0.326
IV/02-III/07	0.025	-0.327
I/03-IV/07	0.054	-0.434
11/03-1/08	0.029	
mean of correlation	0.007	-0.137
standard deviation of correlation	0.173	0.197
coefficient of variation of correlation	25.533	-1.439

3.5.8 FTSE EPRA/NAREIT Sweden Total Return Index

1



period		
11/90 - 1/95	0.151	-0.036
II/91 - I/96	0.241	-0.102
11/92 - 1/97	0.078	0.051
11/93 - 1/98	0.042	0.368
11/94 - 1/99	0.083	0.245
11/95 - 1/00	-0.225	0.163
II/96 - I/01	-0.223	0.143
11/97 - 1/02	-0.154	-0.161
11/98 - 1/03	0.011	-0.145
11/99 - 1/04	0.202	-0.241
11/00 - 1/05	0.204	-0.383
II/01 - I/06	0.221	-0.468
III/01-II/06	0.145	-0.538
IV/01-III/06	0.087	-0.415
1/02 - IV/06	0.171	-0.465
11/02-1/07	0.208	-0.381
111/02-11/07	0.073	-0.504
IV/02-111/07	-0.071	-0.429
I/03-IV/07	-0.037	-0.527
II/03-I/08	-0.147	
mean of correlation	0.053	-0.025
standard deviation of correlation	0.181	0.243
coefficient of variation of correlation	3.419	-9.800

3.6 Correlations with Private Equity, Venture Capital and Commodities

3.6.1 FTSE EPRA/NAREIT Global Total Return Index



period	Commodities	Private Equity UK	Venture Capital US
11/90 - 1/95	0.036	0.811	0.583
II/91 - I/96	-0.138	0.740	0.162
11/92 - 1/97	-0.233	0.719	0.166
11/93 - 1/98	-0.187	0.532	0.397
11/94 - 1/99	-0.016	0.563	0.620
11/95 - 1/00	0.442	0.562	0.605
II/96 - I/01	0.487	0.533	0.432
11/97 - 1/02	0.599	0.614	0.565
11/98 - 1/03	0.325	0.679	0.574
11/99 - 1/04	0.366	0.695	0.610
11/00 - 1/05	0.275	0.722	0.617
II/01 - I/06	0.256	0.702	0.724
III/01-II/06	0.318	0.722	0.716
IV/01-III/06	0.054	0.613	0.576
I/02 - IV/06	0.098	0.601	0.569
11/02-1/07	0.092	0.620	0.599
111/02-11/07	0.075	0.564	0.462
IV/02-III/07	0.049	0.425	0.291
I/03-IV/07	0.086	0.574	0.374
11/03-1/08	-0.065	0.609	0.517
mean of correlation	0.167	0.647	0.501
standard deviation of correlation	0.254	0.091	0.162
coefficient of variation of correlation	1.521	0.140	0.322

3.6.2 FTSE EPRA/NAREIT Europe Total Return Index

1



period	Commodities	Private Equity UK	Venture Capital US
11/90 - 1/95	0.067	0.827	0.482
II/91 - I/96	-0.069	0.778	0.205
11/92 - 1/97	-0.199	0.606	0.116
11/93 - 1/98	-0.433	0.558	0.216
11/94 - 1/99	-0.219	0.630	0.379
11/95 - 1/00	0.170	0.447	0.212
II/96 - I/01	0.184	0.451	0.153
11/97 - 1/02	0.343	0.551	0.343
11/98 - 1/03	0.147	0.671	0.349
11/99 - 1/04	0.267	0.654	0.438
11/00 - 1/05	0.178	0.819	0.584
II/01 - I/06	0.210	0.804	0.647
III/01-II/06	0.210	0.802	0.673
IV/01-III/06	-0.034	0.742	0.549
I/02 - IV/06	0.054	0.764	0.614
11/02-1/07	0.042	0.775	0.661
111/02-11/07	0.015	0.685	0.541
IV/02-III/07	-0.049	0.628	0.374
I/03-IV/07	-0.013	0.657	0.389
11/03-1/08	-0.046	0.607	0.393
mean of correlation	0.044	0.662	0.357
standard deviation of correlation	0.191	0.120	0.180
coefficient of variation of correlation	4.341	0.182	0.505

3.6.3 FTSE EPRA/NAREIT United States Total Return Index



period	Commodities	Private Equity UK	Venture Capital US
11/90 - 1/95	-0.025	0.356	0.715
II/91 - I/96	-0.296	-0.109	0.274
11/92 - 1/97	-0.283	-0.226	-0.007
11/93 - 1/98	-0.313	-0.347	0.122
11/94 - 1/99	0.102	0.221	0.099
11/95 - 1/00	0.198	0.127	0.068
II/96 - I/01	0.313	0.102	-0.038
11/97 - 1/02	0.483	0.207	0.134
11/98 - 1/03	0.376	0.326	0.130
11/99 - 1/04	0.322	0.420	0.353
11/00 - 1/05	0.176	0.581	0.542
II/01 - I/06	0.148	0.585	0.640
III/01-II/06	0.226	0.616	0.626
IV/01-III/06	0.060	0.552	0.549
I/02 - IV/06	0.093	0.573	0.596
11/02-1/07	0.085	0.585	0.634
111/02-11/07	0.057	0.541	0.602
IV/02-III/07	0.044	0.371	0.482
I/03-IV/07	0.077	0.478	0.516
11/03-1/08	0.051	0.502	0.476
mean of correlation	0.105	0.241	0.288
standard deviation of correlation	0.245	0.264	0.247
coefficient of variation of correlation	2.339	1.098	0.857

3.6.4 FTSE EPRA/NAREIT Australia Total Return Index

1



period	Commodities	Private Equity UK	Venture Capital US
II/90 - I/95	-0.296	0.306	0.284
II/91 - I/96	-0.296	0.237	0.205
11/92 - 1/97	-0.432	0.461	0.113
11/93 - 1/98	-0.478	0.269	0.581
11/94 - 1/99	-0.190	-0.084	0.334
11/95 - 1/00	0.089	-0.117	0.235
II/96 - I/01	0.170	0.057	0.362
11/97 - 1/02	0.105	0.041	0.318
11/98 - 1/03	0.133	0.081	0.268
11/99 - 1/04	0.049	0.175	0.305
11/00 - 1/05	-0.217	0.230	0.397
II/01 - I/06	-0.496	0.228	0.353
III/01-II/06	-0.465	0.237	0.314
IV/01-III/06	-0.482	0.325	0.374
I/02 - IV/06	-0.253	0.346	0.437
11/02-1/07	-0.225	0.251	0.380
111/02-11/07	-0.232	0.223	0.331
IV/02-III/07	-0.235	0.018	0.218
I/03-IV/07	-0.121	0.130	0.248
11/03-1/08	-0.302	0.329	0.512
mean of correlation	-0.156	0.154	0.321
standard deviation of correlation	0.212	0.165	0.092
coefficient of variation of correlation	-1.359	1.072	0.287

3.6.5 FTSE EPRA/NAREIT United Kingdom Total Return Index



period	Commodities	Private Equity UK	Venture Capital US
11/90 - 1/95	-0.028	0.765	0.474
II/91 - I/96	-0.105	0.785	0.298
11/92 - 1/97	-0.175	0.719	0.290
11/93 - 1/98	-0.431	0.613	0.427
11/94 - 1/99	-0.129	0.401	0.207
11/95 - 1/00	-0.147	0.016	-0.082
II/96 - I/01	-0.092	-0.019	-0.244
11/97 - 1/02	0.223	0.120	-0.097
11/98 - 1/03	0.057	0.366	-0.042
11/99 - 1/04	0.198	0.453	0.209
11/00 - 1/05	0.076	0.716	0.479
II/01 - I/06	0.158	0.775	0.622
III/01-II/06	0.137	0.774	0.666
IV/01-III/06	-0.052	0.746	0.597
I/02 - IV/06	0.038	0.788	0.692
11/02-1/07	0.025	0.766	0.727
111/02-11/07	0.001	0.695	0.661
IV/02-III/07	-0.054	0.624	0.528
I/03-IV/07	-0.022	0.668	0.538
11/03-1/08	-0.030	0.597	0.490
mean of correlation	-0.027	0.507	0.247
standard deviation of correlation	0.137	0.270	0.276
coefficient of variation of correlation	-5.021	0.532	1.118

3.6.6 FTSE EPRA/NAREIT France Total Return Index

1



period	Commodities	Private Equity UK	Venture Capital US
11/90 - 1/95	-0.121	0.549	0.469
II/91 - I/96	-0.163	0.390	0.234
11/92 - 1/97	-0.080	0.230	-0.010
11/93 - 1/98	-0.176	0.450	0.036
11/94 - 1/99	-0.108	0.351	0.139
11/95 - 1/00	0.356	0.232	-0.042
II/96 - I/01	0.243	0.291	0.057
11/97 - 1/02	0.187	0.490	0.352
11/98 - 1/03	0.162	0.624	0.376
11/99 - 1/04	0.267	0.636	0.442
11/00 - 1/05	0.252	0.824	0.596
II/01 - I/06	0.233	0.742	0.515
III/01-II/06	0.232	0.732	0.531
IV/01-III/06	-0.008	0.641	0.348
I/02 - IV/06	0.053	0.673	0.407
11/02-1/07	0.058	0.676	0.404
111/02-11/07	0.029	0.612	0.345
IV/02-III/07	-0.010	0.612	0.218
I/03-IV/07	0.014	0.607	0.227
11/03-1/08	0.025	0.502	0.177
mean of correlation	0.088	0.503	0.256
standard deviation of correlation	0.179	0.174	0.228
coefficient of variation of correlation	2.039	0.345	0.889

3.6.7 FTSE EPRA/NAREIT Netherlands Total Return Index



period	Commodities	Private Equity UK	Venture Capital US
11/90 - 1/95	0.143	0.655	0.210
II/91 - I/96	-0.045	0.611	0.217
11/92 - 1/97	-0.079	0.448	-0.109
11/93 - 1/98	-0.145	0.237	-0.082
11/94 - 1/99	-0.061	0.454	0.299
11/95 - 1/00	0.339	0.337	0.260
II/96 - I/01	0.229	0.152	0.038
11/97 - 1/02	0.286	0.239	0.194
11/98 - 1/03	0.211	0.356	0.247
11/99 - 1/04	0.194	0.314	0.252
11/00 - 1/05	0.082	0.540	0.427
II/01 - I/06	0.146	0.625	0.558
III/01-II/06	0.143	0.621	0.573
IV/01-III/06	-0.086	0.523	0.426
I/02 - IV/06	-0.038	0.560	0.493
11/02-1/07	-0.058	0.609	0.561
111/02-11/07	-0.073	0.551	0.468
IV/02-III/07	-0.128	0.489	0.326
I/03-IV/07	-0.105	0.513	0.338
11/03-1/08	-0.115	0.551	0.312
mean of correlation	0.081	0.432	0.234
standard deviation of correlation	0.160	0.153	0.188
coefficient of variation of correlation	1.985	0.355	0.806

3.6.8 FTSE EPRA/NAREIT Sweden Total Return Index

1



period	Commodities	Private Equity UK	Venture Capital US
II/90 - I/95	0.357	0.607	0.391
II/91 - I/96	0.212	0.578	0.294
11/92 - 1/97	0.007	0.467	0.412
11/93 - 1/98	-0.505	0.177	0.220
11/94 - 1/99	-0.427	0.437	0.301
11/95 - 1/00	-0.016	0.604	0.390
II/96 - I/01	0.357	0.514	0.254
11/97 - 1/02	0.654	0.670	0.478
11/98 - 1/03	0.322	0.782	0.472
11/99 - 1/04	0.421	0.793	0.584
11/00 - 1/05	0.356	0.838	0.568
II/01 - I/06	0.246	0.748	0.573
III/01-II/06	0.249	0.741	0.587
IV/01-III/06	0.041	0.675	0.464
I/02 - IV/06	0.088	0.673	0.467
11/02-1/07	0.080	0.700	0.499
111/02-11/07	0.052	0.640	0.436
IV/02-III/07	0.025	0.481	0.214
I/03-IV/07	0.038	0.494	0.222
11/03-1/08	0.038	0.391	0.190
mean of correlation	0.143	0.600	0.402
standard deviation of correlation	0.283	0.177	0.134
coefficient of variation of correlation	1.977	0.295	0.334

3.7 Correlations with Hedge Funds

3.7.1 FTSE EPRA/NAREIT Global Total Return Index



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.621	0.563	0.738	0.178
11/95 - 1/00	0.619	0.685	0.719	0.280
II/96 - I/01	0.566	0.752	0.680	0.220
11/97 - 1/02	0.519	0.622	0.636	0.164
11/98 - 1/03	0.544	0.551	0.708	0.131
11/99 - 1/04	0.526	0.234	0.631	0.322
II/00 - I/05	0.511	0.114	0.587	0.032
II/01 - I/06	0.496	-0.008	0.537	0.063
III/01-II/06	0.521	-0.110	0.528	0.061
IV/01-III/06	0.441	-0.227	0.475	-0.015
I/02 - IV/06	0.470	-0.195	0.492	-0.003
11/02-1/07	0.495	-0.170	0.499	-0.002
111/02-11/07	0.324	-0.170	0.301	-0.038
IV/02-III/07	0.229	-0.100	0.083	-0.008
I/03-IV/07	0.211	-0.190	0.187	-0.074
11/03-1/08	0.381	-0.216	0.437	-0.247
mean of correlation	0.516	0.331	0.599	0.135
standard deviation of correlation	0.098	0.357	0.148	0.126
coefficient of variation of correlation	0.191	1.080	0.247	0.930

3.7.2 FTSE EPRA/NAREIT Europe Total Return Index

1



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.684	0.580	0.777	0.394
11/95 - 1/00	0.509	0.580	0.808	0.343
II/96 - I/01	0.464	0.602	0.770	0.312
11/97 - 1/02	0.397	0.457	0.673	0.232
11/98 - 1/03	0.303	0.390	0.599	0.080
11/99 - 1/04	0.195	0.106	0.552	0.015
11/00 - 1/05	0.538	0.052	0.653	-0.035
II/01 - I/06	0.611	0.009	0.635	0.116
III/01-II/06	0.623	-0.065	0.624	0.128
IV/01-III/06	0.555	-0.151	0.576	0.056
I/02 - IV/06	0.598	-0.120	0.613	0.086
11/02-1/07	0.626	-0.109	0.599	0.088
111/02-11/07	0.396	-0.127	0.401	0.000
IV/02-III/07	0.331	-0.011	0.274	-0.006
I/03-IV/07	0.318	-0.082	0.344	-0.059
11/03-1/08	0.344	-0.165	0.394	-0.113
mean of correlation	0.456	0.258	0.646	0.151
standard deviation of correlation	0.160	0.300	0.126	0.172
coefficient of variation of correlation	0.350	1.164	0.194	1.139

3.7.3 FTSE EPRA/NAREIT United States Total Return Index



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.763	0.316	0.655	0.665
11/95 - 1/00	0.639	0.346	0.624	0.631
II/96 - I/01	0.489	0.427	0.526	0.536
11/97 - 1/02	0.403	0.310	0.494	0.468
11/98 - 1/03	0.332	0.265	0.491	0.364
11/99 - 1/04	0.183	0.041	0.437	0.194
11/00 - 1/05	0.548	0.158	0.557	0.038
II/01 - I/06	0.651	0.049	0.617	0.242
III/01-II/06	0.675	-0.041	0.616	0.234
IV/01-III/06	0.624	-0.101	0.573	0.178
I/02 - IV/06	0.620	-0.087	0.580	0.189
11/02-1/07	0.646	-0.072	0.574	0.191
111/02-11/07	0.458	-0.104	0.460	0.088
IV/02-III/07	0.371	-0.044	0.274	0.146
I/03-IV/07	0.338	-0.131	0.347	0.062
11/03-1/08	0.332	-0.156	0.332	0.025
mean of correlation	0.486	0.161	0.523	0.341
standard deviation of correlation	0.180	0.202	0.096	0.221
coefficient of variation of correlation	0.370	1.254	0.183	0.649

3.7.4 FTSE EPRA/NAREIT Australia Total Return Index

1



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.142	0.575	0.153	-0.010
11/95 - 1/00	0.033	0.264	-0.062	-0.019
II/96 - I/01	0.109	0.302	-0.042	-0.065
11/97 - 1/02	0.106	0.309	-0.061	-0.084
11/98 - 1/03	-0.203	-0.022	-0.271	-0.408
11/99 - 1/04	0.123	-0.203	-0.104	-0.115
11/00 - 1/05	0.268	-0.059	0.196	-0.441
II/01 - I/06	0.257	-0.021	0.270	-0.347
III/01-II/06	0.250	-0.032	0.265	-0.377
IV/01-III/06	0.212	-0.023	0.228	-0.451
I/02 - IV/06	0.352	0.026	0.335	-0.336
11/02-1/07	0.264	-0.117	0.242	-0.331
111/02-11/07	0.198	-0.110	0.157	-0.331
IV/02-III/07	0.102	-0.087	-0.043	-0.297
I/03-IV/07	0.107	-0.174	0.132	-0.291
11/03-1/08	0.396	-0.110	0.503	-0.468
mean of correlation	0.130	0.094	0.036	-0.210
standard deviation of correlation	0.147	0.233	0.160	0.171
coefficient of variation of correlation	1.133	2.487	4.493	-0.814

3.7.5 FTSE EPRA/NAREIT United Kingdom Total Return Index



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.436	0.335	0.545	0.272
11/95 - 1/00	0.145	0.281	0.452	0.133
II/96 - I/01	0.025	0.248	0.348	0.125
11/97 - 1/02	0.088	0.206	0.340	0.194
11/98 - 1/03	-0.033	0.143	0.288	0.011
11/99 - 1/04	-0.028	0.032	0.403	-0.058
II/00 - I/05	0.498	0.086	0.603	0.012
II/01 - I/06	0.656	0.080	0.644	0.156
III/01-II/06	0.667	0.020	0.640	0.173
IV/01-III/06	0.616	-0.037	0.599	0.119
I/02 - IV/06	0.654	-0.016	0.641	0.149
11/02-1/07	0.658	-0.030	0.591	0.148
111/02-11/07	0.450	-0.061	0.441	0.051
IV/02-III/07	0.382	0.047	0.295	0.065
I/03-IV/07	0.370	-0.023	0.357	0.011
11/03-1/08	0.357	-0.105	0.359	-0.014
mean of correlation	0.266	0.131	0.455	0.107
standard deviation of correlation	0.269	0.158	0.118	0.120
coefficient of variation of correlation	1.011	1.208	0.260	1.126

3.7.6 FTSE EPRA/NAREIT France Total Return Index

1



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.328	0.479	0.321	0.233
11/95 - 1/00	0.140	0.391	0.309	0.130
II/96 - I/01	0.198	0.394	0.353	0.151
11/97 - 1/02	0.168	0.361	0.371	0.061
11/98 - 1/03	0.141	0.348	0.344	-0.010
11/99 - 1/04	0.095	0.102	0.419	-0.103
11/00 - 1/05	0.493	0.053	0.526	-0.086
II/01 - I/06	0.576	0.160	0.533	0.189
III/01-II/06	0.590	0.034	0.511	0.198
IV/01-III/06	0.489	-0.041	0.425	0.086
I/02 - IV/06	0.518	-0.023	0.460	0.108
11/02-1/07	0.522	-0.018	0.463	0.107
111/02-11/07	0.324	-0.059	0.328	0.001
IV/02-III/07	0.274	0.016	0.238	0.003
I/03-IV/07	0.284	-0.042	0.313	-0.042
11/03-1/08	0.249	-0.129	0.286	-0.042
mean of correlation	0.284	0.214	0.392	0.061
standard deviation of correlation	0.160	0.214	0.076	0.119
coefficient of variation of correlation	0.562	1.004	0.195	1.941

3.7.7 FTSE EPRA/NAREIT Netherlands Total Return Index



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.571	0.679	0.687	0.277
11/95 - 1/00	0.502	0.569	0.632	0.386
II/96 - I/01	0.367	0.595	0.549	0.357
11/97 - 1/02	0.271	0.460	0.517	0.254
11/98 - 1/03	0.310	0.367	0.577	0.263
11/99 - 1/04	0.158	0.061	0.439	0.263
11/00 - 1/05	0.283	0.162	0.568	-0.126
II/01 - I/06	0.562	-0.139	0.615	0.146
III/01-II/06	0.576	-0.236	0.588	0.157
IV/01-III/06	0.475	-0.315	0.506	0.045
I/02 - IV/06	0.489	-0.304	0.525	0.063
11/02-1/07	0.550	-0.254	0.550	0.066
111/02-11/07	0.367	-0.260	0.392	-0.003
IV/02-III/07	0.313	-0.162	0.297	-0.009
I/03-IV/07	0.321	-0.195	0.349	-0.041
11/03-1/08	0.306	-0.215	0.314	-0.060
mean of correlation	0.371	0.224	0.539	0.189
standard deviation of correlation	0.151	0.370	0.092	0.153
coefficient of variation of correlation	0.406	1.650	0.170	0.811

3.7.8 FTSE EPRA/NAREIT Sweden Total Return Index

1



period	Hedge Fund	Hedge Equity Mkt. Ntrl.	Hedge Event Driven	Hedge Global Macro
11/90 - 1/95				
II/91 - I/96				
11/92 - 1/97				
11/93 - 1/98				
11/94 - 1/99	0.547	0.268	0.483	0.398
11/95 - 1/00	0.616	0.156	0.538	0.462
II/96 - I/01	0.520	0.337	0.496	0.366
11/97 - 1/02	0.509	0.238	0.450	0.351
11/98 - 1/03	0.445	0.165	0.449	0.227
11/99 - 1/04	0.389	0.015	0.490	0.134
11/00 - 1/05	0.518	-0.030	0.562	-0.049
II/01 - I/06	0.349	-0.098	0.485	-0.141
III/01-II/06	0.376	-0.195	0.467	-0.118
IV/01-III/06	0.301	-0.291	0.421	-0.158
I/02 - IV/06	0.339	-0.260	0.442	-0.142
11/02-1/07	0.371	-0.221	0.458	-0.141
111/02-11/07	0.200	-0.236	0.321	-0.208
IV/02-III/07	0.060	-0.172	0.050	-0.190
I/03-IV/07	0.082	-0.200	0.117	-0.211
11/03-1/08	0.077	-0.292	0.140	-0.218
mean of correlation	0.434	0.052	0.458	0.146
standard deviation of correlation	0.132	0.211	0.103	0.249
coefficient of variation of correlation	0.305	4.025	0.225	1.708



Boulevard de la Woluwe 62 Woluwelaan 1200 Brussels Belgium

T +32 (0)2 739 1010 F +32 (0)2 739 1020 www.epra.com