

PERFORMANCE ATTRIBUTION

A CRITICAL LOOK AT PERFORMANCE ATTRIBUTION



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This paper critically reviews the adequacy and robustness of what we currently choose to use in UK property as industry standard definitions of "structure" and "stock" for performance attribution purposes.

IPD-based performance attribution is now a key part of the property fund manager's calendar, representing part "school report", part forensic examination of fund performance addressing key questions such as "how did we do, how did we do compared to others, and, significantly, how did we achieve what we did?".

Typically, the two components of attribution analysis that are provided, in property as elsewhere, are "structure" and "stock". "Structure" measures the extent to which an investor distributed capital towards segments of the market that performed above average and away from those that performed below average. "Stock", measures the extent to which, within pre-defined segments of the market, an investor was able to select and invest in assets that performed above the segment average and avoided assets that performed below the segment average.

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What do we mean by "structure"?

The main consideration for a structuring schema is defining one that explains statistically the most variance in individual property returns. The most useful divisions are those for which data exist to support analysis and forecasting, while following the ways investors invest in and think about the property market. Each segment or sub-division identified needs a sufficient number of properties, probably over 50, to ensure that the level of residual specific risk in each 'segment' is small.

The current IPD performance attribution schema defines structure using its Performance Analysis System (PAS) market segments. These seem to be a sensible combination of different land uses and geographic areas resulting from well intentioned empirical work by high quality researchers using very acceptable statistical techniques. They clearly meet the above criteria, but is this the most meaningful way to divide up the property market? Are contiguous land-use/geographical markets always the most relevant drivers of commercial property markets? More radically, can we

contemplate involving more dimensions to property performance measurement to better reflect the multi-faceted nature of the asset?

A Meaningful Performance Attribution Scheme

It was argued some time ago, (Morrell, 1995, McNamara and Morrell, 1994) that the old "regional geography - systematic geography" debate could be important to determining the best performance attribution schema for UK property. This debate reflected on the meaningfulness of describing the economic nature of geographically contiguous regions compared to that of identifying and describing locations that, though non-contiguous, had a great deal in common economically and socially. Clearly, these same considerations are important when thinking about what economic drivers influence property asset and market performance across the UK.

With this in mind, is it really better to lump different types of town, like Reading, Canterbury and Brighton together in a contiguous region when forming strategy or measuring the drivers of performance? Might it be better to organise and measure portfolios on the basis of different "town types" subject to similar demographic and economic processes, such as "sub-regional centres", "historic centres" or "sea-side resorts"? Is Canterbury really more like Reading than York?

Clearly, to operationalise a town type schema, an agreed classification of town types would need to be established and it would certainly be true that any such changeover would require a lot of knock-on work in terms of how we go about market analysis and strategy building. But data sources have developed to give more scope to attempt this now.

Structure and Stock - A Moveable Feast

In any performance attribution schema we also have to be content that we are working at a meaningful level of "granularity". Are sectors, sector-regions, sector-counties, or sector-district divisions the most appropriate for setting strategy? Similarly, should we use just a few land-use sectors, or the widest possible range of land-use sub-sectors?

Importantly, and this is not as widely recognised as it should be, the number of structural segments used in a performance attribution schema affects directly the outputs of the attribution analysis. If a performance attribution schema has only one market segment (i.e.



"the market") then all the differential performance observed between a fund and its benchmark will be attributed to stock. However, if every property is its own market segment, then all the observed differential performance between a fund and its benchmark will be attributed to structure. Table 1 illustrates this.

The data presented is from a hypothetical portfolio comprising two actual portfolios from the PRUPIM stable for 2004. We have applied an increasingly fine level of granularity to the fund and measured what happens to the structure-stock attribution balance. As can be seen, as one moves to an ever more fine-grained segmentation scheme, more and more of the observed performance from exactly the same set of properties is attributed to "structure".

Table 1: Combination Fund 2004 – performance attribution at different levels of granularity

Relative Performance +2.08%			
Nature of Structural Sub-Divisions	Number of Market Segments	Stock Score	Structure Score
All Property	1	+2.08	0.00
Sectors	4	+2.08	0.00
IPD PAS Market Segments	11	+2.21	-0.13
IPD Digest Segments	26	+1.87	+0.21
Every property as its own sector	196	0.00	+2.08

New Factors

Finally, we need to question whether land use type and geography are the natural drivers of property market performance anyway. Certainly, when investors are looking for security, as they have done in recent times, then lease length and income returns are the most important market drivers. As property market cycles roll through, asset lot size can be important with large lot sizes preferred in bull markets and shunned in bear markets. So, lot size might be another "structuring device" that could be used for performance attribution.

Table 2 shows our "combined fund" but this time using a sector/ lot size division (i.e. dividing each sector up into deciles using lot sizes and deeming this as the "structure").

Table 2: Attribution on "combined fund" using a sector, lot-size decile market segmentation

Year	Structure Score	Stock Score
2003	+0.39	+0.70
2004	+0.21	+1.86

Conclusion

Structure-stock attribution schemes are mathematical schemes that can be constructed using any variable. As such, it is crucial to develop a schema that best divides properties up into groups that, in themselves, perform similarly, but as a group perform differently to other groups. We need to be critical of the current market segment conventional format - it may no longer be the most meaningful - and we do need to give attention to the granularity of any schema we use, since the number of divisions we use will affect the apportionment of performance to "structure" and "stock". ■

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References

McNamara, P. F and Morrell, G. D (1994), Local Area Analysis and Portfolio Construction, *Society of Property Researchers, Technical Paper No 2*, Society of Property Researchers.

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A longer version of this paper can be made available on request.

— ABOUT PRUPIM —

PRUPIM is one of the leading real estate investment managers in the United Kingdom. We form part of the M&G Group of Companies which is the asset management arm of Prudential plc in the UK and Europe. We manage around US\$37 billion of real estate assets, of which US\$6 billion is invested internationally in North America, continental Europe and Asia Pacific. We are invested in over 1,000 properties with approximately 6,000 property occupiers. We manage real estate investments for a wide variety of clients, providing core services and expertise in fund management, asset management and property management. These services are offered individually, or on a fully integrated basis.

Our major activities are driven by powerful research, managed by the Global Property Research Team. Our considerable scale and diversified activities allow us to draw on our own multi-dimensional inputs which give us an unrivalled information advantage. We evaluate the macro-economic environment working as part of the global research capability of Prudential. We receive detailed property related data generated by our on-the-ground surveyors. This is fed into proprietary modelling systems which form the basis of our analysis. The 10-strong Global Property Research Team was formed in 1987 and is comprised of property economists and performance measurement analysts who work together to provide leading property analysis and commentary on the UK and international property markets.

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