

<b>Institution: University of Aberdeen</b>
<b>Unit of Assessment: UoA Architecture, Built Environment and Planning</b>
<b>Title of case study:</b> Index construction and property market transparency
<p><b>1. Summary of the impact</b></p> <p>Property market investors (from large institutional investors to potential home buyers) need to have confidence on the level of risk and returns associated with their transactions. Without such confidence, property markets will fail to operate efficiently.</p> <p>This case study reports on the development of a number of different property indices by Aberdeen-based researchers which have increased information on, and therefore the transparency of, specific markets. The commercial real estate and urban regeneration indices have been widely adopted by industry and influence investment portfolio decisions. The residential indices are used by surveyors, mortgage lenders and influence the housing choices of the general public.</p>
<p><b>2. Underpinning research</b></p> <p><b><u>Transaction-based commercial property indices</u></b></p> <p>Commercial property performance indices have historically been based on appraisals, with valuers combining a range of past and current information to reach an estimate of value. Research by <b>MacGregor</b> (Aberdeen) with international collaborators [Ref 1] explains how the results of this approach are problematic.</p> <p>Recognising the limitations of appraisal-based indices, in 2008 the Investment Property Databank (IPD) funded <b>Devaney</b> (while based at Aberdeen) to produce a complementary transaction-based index for the UK commercial property market using data held by the company as part of their primary business (property performance measurement). Using econometric methods, the first value-weighted indices of the UK commercial real estate market were derived. These revealed stronger growth in prices in the run up to the peak of the UK market in 2007 than suggested by appraisal-based indices. They also showed that returns are more volatile and less autocorrelated than previously suggested. The findings have been published in the form of an academic paper [Ref 2] and a consultation report, disseminated throughout the real estate industry (see section 4).</p> <p><b><u>Urban Regeneration Property Performance Index</u></b></p> <p>In 2003 <b>Hutchison</b> (Aberdeen) with colleagues from the Universities of Ulster and Glasgow completed a major ESRC, RICS and ODPM funded project on the investment performance of property in regeneration areas [Ref 3]. Prior to this, there was relatively little knowledge on the performance of properties in regeneration areas with most indices focussing instead on prime markets. The research showed that rental growth was similar for regeneration properties compared to the prime market but highlighted a higher yield in the short to medium term. Once a regeneration area becomes established and rental growth emerges, investor interest is stimulated resulting in increased competition and a shortening of yields. The research led to, amongst other things, the establishment of a new urban regeneration property performance index which was published on annual basis from 2005 to 2011 by IPD and Savills (see section 4).</p> <p><b><u>Local and national house price indices</u></b></p> <p>Most developed economies have at least one national house price index indicating house price movements over time. The indices vary in terms of how they are constructed. In this context, <b>Hoesli</b> (employed on a partial contract at Aberdeen throughout the REF period) conducted a series of research projects with international collaborators on the alternative methods of house price index construction [see, for example, Ref 4]. Findings showed that list price indices (such as the index employed exclusively by the Swiss National Bank until 2008) can exhibit a different price path compared to hedonic indices which control for the quality of properties. In particular, list price indices appear to overstate price changes in booming housing markets and understate price</p>

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movements in declining markets. As a result of the research, the Swiss National Bank has chosen to supplement its list price index with an hedonic index. The same hedonic index has recently been made available on the Swiss stock exchange (see section 4).

The development of sub-national house price indices is typically constrained by data limitations although the potential utility of such indices is clear. Researchers based at Aberdeen (**Owusu-Ansah, Roberts, Schulz and Wersing**) in collaboration with the Aberdeen Solicitor's Property Centre (ASPC) have developed a quality-controlled (hedonic) Aberdeen house price index. The index, launched in summer 2012, has replaced the information previously made available by the ASPC and Aberdeen City Council on house price movements in the region. Underlying research in this case has focussed on the extent to which practical issues (such as selection of attributes for the "standard" house, choice of housing market area, method of index weighting, and the length of the time periods used in the estimation process) can influence index values and thus the quality of information available on the market [Ref 5].

### 3. References to the research (all outputs listed available on request from HEI)

- [Ref 1] Geltner, D., **MacGregor, B.D.** and Schwann, G. (2003) Appraisal Smoothing and Price Discovery in Real Estate Markets, *Urban Studies*, 40, 5-6, 1047-1064.
- [Ref 2] **Devaney, S.** and Martinez-Diaz, R. (2011). 'Transaction based indices for the UK commercial real estate market: an exploration using IPD transaction data', *Journal of Property Research*, vol 28, no. 4, pp. 269-289.
- [Ref 3] Adair, A., Berry, J. **Hutchison, N.E.**, McGreal, S. Poon, J., Watkins, C. and Gibb, K. (2005). Investment Performance within Urban Regeneration Locations, *Journal of Property Investment and Finance*, 23, 1, pp. 7-21.
- [Ref 4] Bourassa, S.C., **Hoesli, M.**, Scognamiglio, D. and Sormani, P., 2008 "Constant-quality house price indexes for Switzerland", *Swiss Journal of Economics and Statistics*, Vol. 144, pp. 561-575.
- [Ref 5] **Owusu-Ansah, A., Roberts, D., Schulz, R. and Wersing, M.** 2013. Developing a local house price index: The case of Aberdeen, Scotland. *University of Aberdeen Business School Working Paper 2013-03* [http://www.abdn.ac.uk/business/documents/ASPC\\_Index\\_1\\_Nov\\_2013.pdf](http://www.abdn.ac.uk/business/documents/ASPC_Index_1_Nov_2013.pdf)

### 4. Details of the impact

Research at Aberdeen on indices has led to the development of new resources which enhance professional practice influencing, for example, the decisions of institutional investors and, in turn the performance of their investment portfolios. The urban regeneration index has shaped public policy in relation to regeneration schemes and planning while the residential indices have influenced decisions made by mortgage lenders and the housing choices of the general public.

#### **Transaction-based commercial property indices**

Research on appraisal-based indices [Ref 1] has impacted commercial property markets by making investors more aware of the limitations of appraisal-based indices, through the generation of a new transaction-based UK index [Ref 2] and more widely, by showing the potential for such indices. The approach adopted by Aberdeen-based researchers has been extended within the REF period to European real estate data by the Investment Property Databank, an independent company that provides real estate performance analysis and indices for investors, managers, lenders and advisors [Source A]. Provisional UK and European transaction-based indices are cited in a major report by IPD on real estate volatility and capital adequacy requirements in relation to real estate portfolios under the Solvency II regulatory framework [Source B]. In early 2012 the European Central Bank recommended that, in order to improve market efficiency and transparency, EU members should provide information on their real estate markets in the form of transaction-based indices. For the period during which member states move towards this goal, the IPD European transaction-based indices (based on the index construction approach developed in Aberdeen) are being used by the European Central Bank and the central banks of individual member states.

### **Urban regeneration property Index**

Building on research on regeneration areas [Ref 3], Aberdeen-based researchers working with colleagues from the University of Ulster and Glasgow developed a prototype Urban Regeneration Property Performance Index in 2003. This was launched in 2005 and the index was produced annually thereafter by researchers based in IPD and Savills until 2011 [Source C]. The IPD/Savills Regeneration Index is now an established barometer for those involved in urban regeneration markets. For example, the development manager of Aviva's Igloo Regeneration Fund, quoted the index in response to a request for written submissions from the Communities and Local Government Select Committee in 2011 [Source D]. The index research was also referenced in a report published by the Scottish Government on town centre regeneration in 2011 [Source E]. More generally, the index provides information on the effectiveness of regeneration policy mechanisms, some of which include sizeable financial support.

### **Local and national house price indices**

The hedonic index approach proposed by an Aberdeen-based researcher and colleagues [Ref 4] has been adopted since 2008 by the Swiss National Bank (SNB) [Source F]. The national and regional house price information is used by the SNB to determine mortgage lending policies, in their estimation of household wealth, and in assessing the risks of a housing bubble which would have a significant impact on monetary policy.

With the aim of eventually replicating the real estate residential property derivatives which exist in the US, the hedonic indices have also been available, since 2008, on the Swiss Stock Exchange [Source G] thus substantially improving the reliability and (as shown in the underlying research) the quality of information on the Swiss housing market to potential investors.

Since summer 2012, the Aberdeen house price index has been produced by Aberdeen-based researchers each quarter. It is published on the ASPC website [Source H] (which typically hosts more than 50,000 searches each day) and Aberdeen University's Centre for Real Estate Research website, and is regularly quoted by local media and recently in the national press. It is used by a wide range of beneficiaries including the local council (to inform residential planning decisions), surveyors, Council of Mortgage Lenders members (i.e. banks and Building Societies) and potential house buyers and sellers in North East Scotland. Local housing associations have referred to the index in setting rental levels, as the rents they charge have to be justified in relation to market within which they operate.

## **5. Sources to corroborate the impact**

1. [Source A] IPD European Transaction Linked Indices  
<http://www1.ipd.com/pages/dnnpage.aspx?desturl=http://www.ipd.com/sharepoint.aspx?tabid=3912>
2. [Source B] IPD Solvency Review II (2011): See: <http://www.ipd.com/sharepoint.aspx?tabid=3251>
3. [Source C] The Urban Regeneration Property Performance Index is published annually by IPD and Savills see:  
[http://www.bpf.org.uk/en/files/reita/reita\\_org\\_documents/analysis/Savills\\_IPD\\_-\\_regeneration-index-2011.pdf](http://www.bpf.org.uk/en/files/reita/reita_org_documents/analysis/Savills_IPD_-_regeneration-index-2011.pdf)
4. [Source D] House of Commons (2011). Regeneration, Sixth Report of Session 2010–12, The Stationery Office Limited, London.  
<http://www.publications.parliament.uk/pa/cm201012/cmselect/cmcomloc/1014/1014.pdf>
5. [Source E] Scottish Government Social Research. (2011). *Town Centre Regeneration: How Does it Work & What can be Achieved?* Edinburgh, Scotland.  
<http://www.scotland.gov.uk/Resource/Doc/358309/0121114.pdf>
6. [Source F] Swiss National Bank: Link to Real Estate Indices (section O):

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<http://www.snb.ch/en/iabout/stat/statpub/statmon/stats/statmon>

7. [Source G] Swiss Stock Exchange: Link to Real Estate indices:

[http://www.six-swiss-exchange.com/indices/other\\_en.html](http://www.six-swiss-exchange.com/indices/other_en.html)

8. [Source H] Aberdeen house price index : <https://www.aspc.co.uk/information/house-prices/>

**Corroborating statements available from the research users**

9. Advisory Director, Investment Property Databank /MSCI

Provides confirmation of Devaney's input into the Transaction-based commercial property indices and the contribution of Aberdeen-based researchers to the development of the urban regeneration property index.

10. Chairman, Aberdeen Solicitors' Property Centre

Provides confirmation of the development and production of the Aberdeen house price index by researchers based in the Centre for Real Estate Research at the University of Aberdeen, and its significance in terms of the quality of information available on the local market and the range of different beneficiaries.

**Notes:**

Professors **Hutchison**, **MacGregor** and Dr **Schulz** were full time members of staff in the Real Estate Group at Aberdeen throughout the REF period. Professor **Hoesli** was employed throughout the REF period on a 20% contract. Professor **Roberts** moved from a full time to 20% contract in 2013. Dr **Devaney** was employed on a full time contract from 2007 to 2012. Dr Wersing joined the group in 2012. **Owusu-Ansah** was a PhD student based in the Real Estate group between 2009 – 2012, gaining his doctorate in 2012.