



20th Annual European Real Estate Society Conference

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Book of Abstracts

Bob Martens | Editor

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Bob Martens | Editor

Vienna | Austria
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INTERNATIONAL REAL ESTATE SOCIETY

20th Annual Conference of the European Real Estate Society

Book of Abstracts

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Editor

Bob Martens

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Vienna, 3-6 July 2013**

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Preface

Dear readers and delegates at ERES 2013,

it is a pleasure for us to present you with this Book of Abstracts, consisting of contributions accepted for publication at the 20th ERES conference. The ERES 2013 call for abstracts resulted in a large number of promising submissions, with the following topical distribution:

- Environmental Risks: 1,60%
- Performance and Risk Management: 1,60%
- Real Estate Education: 2,00%
- Tax and Legal Issues in Real Estate: 2,40%
- PPF, PPP & Infrastructures: 2,80%
- Marketing & Communication in Real Estate: 3,20%
- Corporate Real Estate: 4,00%
- Real Estate Portfolio Management: 4,00%
- Asset, Property & Facility Management: 4,40%
- Real Estate Valuation: 4,80%
- Real Estate Development: 5,60%
- International Real Estate: 7,60%
- Market Research, Analysis & Forecasting: 8,00%
- Real Estate Finance & Investment: 10,00%
- Real Estate & Urban Economics: 11,20%
- Green Buildings & Environmental Policies: 12,50%
- Housing Markets & Economics: 14,30%

The contributions to the conference - as indicated by the present Book of the Abstracts - are witness to the high quality and creativity of research and development efforts of the real estate community. Accordingly, we are looking forward to interesting conference presentations, lively discussions, and productive exchanges of ideas and experiences. We hope the conference will strengthen existing and foster future collaborations.

I would like to honor the support of Yener Coskun, acting as the Doctoral Session organizer. The Local Organising Committee (Veronika Lang – Co-chair; Wolfgang Feilmayr; Martina Hoffmann; Gunther Maier; Peter Sittler) served as “rock in the breaking waves”, as scheduling a large number of accepted submissions is doubtlessly a cumbersome task. Thanks also go to Paul Hechinger for his assistance during the editing stage and to Gunther Maier for maintaining the online submission-interface. Finally, I would also like to express our gratitude to the sponsors for their generous contributions.

Bob Martens, FRICS
Conference Chair

Welcome!

Dear ERES 2013 delegates,

it gives me great pleasure to welcome you to the magnificent city of Vienna with a fascinating history dating back to 500BC. There is a broad spectrum of sub – themes to discuss under at this conference and I want to particularly invite you to participate in the IRES panel discussion on Global Doctoral Programmes.

This is a global perspective put together for greater understanding of the educational structure and content of the various regions of the world, in line with the mission of the International Real Estate Society (IRES). The panelists who represent the various regions are experienced academics who will share valuable insights that can assist those intending to take positions abroad.

IRES is the umbrella body of the continental Real Estate Society bodies ... the African Real Estate Society, Asian Real Estate Society, American Real Estate Society, European Real Estate Society, Latin American Real Estate Society, Middle East and North African Real Estate Society and Pacific Rim Real Estate Society ... that promotes Real Estate Research and Education and promote high level of networking amongst academics and Real Estate practitioners globally.

A number of successes have been recorded in this mandate and specifically there is greater emphasis this year on academic and student exchange programs. It will be my delight if you will participate in any of the programs, in one form or the other. As a member of a Sister society you are a member of IRES and are welcome to volunteer your time and talent.

I would like to thank Bob Martens (representing the Local Organising Committee) and the leadership of the European Real Estate Society for hosting the meeting of the Board of Directors of the International Real Estate Society this year in the historic and wonderful city of Vienna.

I join the organisers to welcome you to Vienna, Austria.

Akinola Olawore FNIVS, FRICS
Lagos, Nigeria
President, International Real Estate Society, 2013

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Problematic Differentiation between Property Bonds and Leases in Healthcare Provision

Andrew Ellison, Graham Squires, Patrick Dempsey

Keywords: *Property development, Investment and finance, Real estate, Healthcare provision, Leases*

Investment into healthcare is now attracted by creating leases with guaranteed rental uplifts creating a property bond in all but name (Enever, N., Isaac, D., and Daley, M., 2010). Given the collapse of notable healthcare institutions, this research proposes more effective modelling of institutional investment for sustainable healthcare provision. Quantitative comparators are used to establish a differentiation between rental growth, care costs/charges and RPI. Qualitative data regarding the way in which advisers and investors view the security and value of these new instruments are gained via interviews with professionals in the market (Hardin, W., 1999). Findings consider the differentiation between rental growth defined by the balance of supply and demand, and indexed rental uplifts. This is in addition to a misunderstanding of the nature of the investment vehicles currently being marketed (Gilovich, T., Griffin, D. and Kahneman, D., Eds. 2002). As such, the new investment vehicles question the sustainability of modern private healthcare provision. Thus meaning that the dissemination of professional education will be required to create a market correction in the valuation and sale of these products.

State of the Art: New Ways of Working and the Contribution of Real Estate to Changed Working Conditions.

Maria Braunschweig, Andreas Pfnür

Keywords: *Workplace, Office design, Performance, Demographic change, Behavior*

Purpose - This paper aims to demonstrate the contribution of real estate on working performance due to new working environments. Until now working environments just have been considered from a business, human Resources, IT, architecture and a health and safety point of view.

Design/methodology/approach - Based on a comprehensive literature review, including journal papers, university papers and handbooks, office properties, workplace and office design will be analyzed with regard to working performance.

Findings - Literature shows an upcoming demographic change, which has to be taken into account for real estate buildings and office concepts. They have to meet several challenges, like the increasing use of technical equipment, flexible workplaces and work hours and the higher demand of employees for an appropriate work-live balance. Real Estate properties must not only handle the 'green building' claim, but also have to deal with 'blue building' demands. The office design also influences collaboration, communication, concentration, working- and environmental satisfaction. These components are some of the key factors for ability and willingness to perform and finally for performance. The strengthening links between those components and the corporate culture and organizational structure show how important it is to look at a bigger picture. Literature review appears inconsistent about the effect of those factors, but a rough trend shall be shown for performance of the employees.

Originality/value - Based on existing know-how about workplace design and performance: effective office building concepts can be developed for future.

Asset Management of Polish Universities

Malgorzata Rymarzak, Dariusz Trojanowski

Keywords: *Asset management, Determinants, Efficiency of universities, Poland*

In recent years higher education in Poland has been facing serious problems. Due to the demographic fall, fewer and fewer students continue their education at universities. On the other hand, competition between institutions is quite large, because in Poland there are now 470 of them (including 132 public universities and 338 private ones), which is the largest number of higher education institutions in Europe.

The decreasing number of students results in lowering the income from tuition fees, as well as a real reduction of state subsidies. At the same time labor costs, energy prices, the media, etc, are rising. Some of the universities with help from the EU have also invested in infrastructure, new buildings. Due to the smaller number of students, they remain unused, contributing to the worsening of the financial situation of many universities.

However, the problem does not only concern educational buildings. Many universities, in particular public ones, have significant assets in Poland also for other use (commercial, service, residential, etc), which is not well exploited and managed as well.

Undoubtedly, the asset management process involves making decisions regarding the formation of the rational structure of property, sources of financing, assessing the effectiveness of the use of individual assets and thus affects the economic situation of each university. Irrational management led to increase of operating cost, lowers budgetary incomes, disorganizes management process.

The general aim of the study is to provide insight into the principles of asset management of universities in Poland on the example of a public university - University of Gdansk.

Main problems faced by Polish universities will be presented in the field of asset management, asset management determinants of universities, as well as the attempt will be made to identify possible solutions to improve the efficiency of asset management universities in Poland.

Developing the answers to the above stated problem can contribute to the competitiveness and greater efficiency of the universities in making real estate decisions that determine higher education institution investment and development. The contribution of the project to a new knowledge area is, therefore, not only of theoretical nature, but has scientific and applicability values in the first place. The experience of the Polish market also may support development of asset management universities in other countries.

Shopping Centre Spatial Complexity, Management Efficiency and Tenant Mix Variety

Tony Shun-Te Yuo, Yu-Cheng Lin, Jou-Hsuan Wu, Kuan-Yu Huang

Keywords: *Mall configuration, Shoppers circulation, Space location, Allocation, Geography information system, Space syntax*

Spatial complexity is not only one of the crucial sources of wayfinding problem within a shopping facility; it is also a significant determinant for space usage efficiency. The distribution of total floor area for a shopping mall is basically finding the optimum solution for tenant location/allocation and pedestrian flow plans. Normally, with higher spatial complexity, shoppers are easier to get lost and generate higher shopping costs; however, space usage flexibility could also be increased. Therefore, a good measurement for spatial complexity for shopping areas is needed. This paper compares several measurements for spatial complexity. The intention is to tackle the spatial complexity issue through three dimensions: horizontal complexity, vertical movements and multiple-purposive users in mixed use environment. And the data is collected from the US, UK, Taiwan, Singapore, Hong Kong, Malaysia and Shanghai with more than 100 floorplans to explore the influential factors for spatial complexity within shopping centres. Using GIS, space syntax and other non-spatial techniques, this research suggests some interesting management issues and enhances the understanding of spatial complexity within a shopping environment.

Effective Buildings Condition Assessment: A Part of Common Valuation Procedure or Self-Sufficient Agent

Kaarel Sahk

Keywords: *Appraisal, Buildings condition, Assessment, Standardization, Investigation*

Real estate appraisal as a procedure has a quite strongly and solidly built up activities for the all environment of the appraisal procedure. In this case, linked to the nature of edited standards presenting 4 component natures of properties, the considerable attention is addressed to the real estate. Exactly real estate is the phenomenon that incorporates into one integer the personal property, entrepreneurship and the financial interests. Motivating the grounding role of real estate is notional how the estate is constituted and in which conditions is the essential part of it – buildings. Returning to the appraisal procedure is available to underline two similar and at the same time distinct interpretations of the buildings condition assessment. The first one is a part of the common appraisal operation whereby the appraiser is giving a short and presumptive statement about the conditions, that commonly is a result of walk through survey and do not include the special engagement of civil engineers. It is an unsophisticated one, though therefore exist a number of special standards dedicated to the process management. The second approach of the building condition assessment is special procedure that is supporting the founding appraisal report or is provided for solving of the listed by the walk through survey problems up till the independently formed report. This sort of report is based on the sophisticated activities arranged by civil engineers and includes the non-destructive and destructive investigation of the building and its components. The implemented examination of interested parties and the current legal situation raise a clear need for standardization of the buildings condition assessment that will insure the two channel assessment, a separate procedure and the procedures supporting the existing real estate appraisal function by linkage with the already established standards.

Property & Asset Management in United Kingdom: The REMark study

Bob Thompson, Steph Yates

Keywords: *Property management, Process change, Collection performance, Asset management, Facilities management, Operational performance*

The objective of this paper is to look at the performance of Property and Asset Management (PAM) in the UK over the past five years. This part of the property industry suffers from extreme cost pressure to the point where profitability is in question. The paper discusses different business models for PAM and uses a detail process model to pull out the key metrics for the industry. Using the REMark survey of property managers and funds it reports upon the performance of property and asset managers with respect to efficiency and collection performance over a five year period, drawing out key trends.

Customer Satisfaction with Luxury Hotel in Bangkok: The Influence of Housekeeping Services Quality

Pitinan Kawachart

Keywords: *Housekeeping, Luxury hotel, Lodging quality index, Customer satisfaction, Hotel service quality*

Purpose – The purpose of this study is to examine the service quality, to represent what factors of housekeeping-service quality make the greatest contribution to customer satisfaction in housekeeping services of luxury hotels in Bangkok. The items of these four dimensions were adapted and reworded based on the LQI model for investigating the specific context.

Design/methodology/approach – Data are collected from 200 Thai and foreign respondents who stayed in the luxury hotel located at CBD of Bangkok within six months. The housekeeping-service quality was measured using four LQI dimensions of Tangibility, Reliability, Responsiveness and Communication as a predictor toward customer satisfaction. Hypothesizing these four dimensions has direct effect on the customer satisfaction in housekeeping services. Data are examined by using exploratory factor analysis and multiple regression analysis.

Findings – The resulted indicated that two out of four original constructs had direct effects on customer satisfaction. However, this study found two new constructs, which are Understanding and Competency that had direct effect on customer satisfaction. The final model consisted of four constructs, namely Reliability, Responsiveness, Understanding, and Competency which had an influence on customer satisfaction directly. The final model has relatively good explanatory power with $R^2 = 40.6\%$. The Competency was the most significant in the final model.

Implications – The hotel managers of luxury class hotels should recognize the important of “Competency” and “Understanding” in performing the housekeeping services in order to enhance customer satisfaction by training the housekeeping to work efficiently and have friendly manner and effort to anticipating customer’s need.

Originality/value – This study particularly identified the important factors of housekeeping-services quality, which helped the hotelier to improve the housekeeping services in the right point, thus this helps minimizing cost and time investment. This paper is one of rare study that attentively focused on the context of housekeeping services that has not been developed or operationalized.

Added Value of Hospitality Management in the Evolution of Property and Facility Management

Pieter Le Roux, Desiree Dongelmans

Keywords: *Strategic identity, Facility management, Business alignment, User-experience, Hospitality management*

Research on business alignment in FM emphasizes the need for evidence-based reasoning regarding the added value of FM to organizational effectiveness in strengthening the strategic identity of FM (Price, 2002; Chotipanich, 2004; Chotipanich and Nut, 2008; Mak 2011).

In the Netherlands, recent developments in new ways of working, and the requirements thereof in terms of FM products and services, have proven the ability of FM to evolve. In meeting the needs of new ways of working, Hospitality Management (HM) has become an integral part of the overall strategic identity of FM (Reijngoud, 2011).

The current study reflects on the above-mentioned statements, and uses a case study approach to present evidence-based proof of the added value of HM in the evolution of property and facility management. The case study of Eneco – a large Dutch energy provider – traces the effects of a vision on overall sustainability that was adopted in 2008. This vision was translated and physically embodied in a new building and a new workplace concept with 1530 typologically diverse workplaces for 2300 employees (0.67 workplaces/employee). Bringing it all together is an integrated FM/HM strategy closely aligned to the organizational objectives in terms of sustainability, HRM, ICT and CRM (Customer Relation Management). Implementation of this strategy is recognized through its focus on three specific aspects: (i) user-behaviour, (ii) products and environment, and (iii) Facility services.

By translating general and FM trends regarding these focus areas to a vision on the role and potential added value of HM in FM, an integrated approach that transcends the level of mere product provision and service delivery, was realized. Crucial in formulating this integrated approach were considerations regarding (i) the development of new FM and service delivery competencies, and (ii) the financial implications of the envisioned service contracts and products. As a result, these were benchmarked with current facility costs (NEN 2748, currently known as EN-15221) and integrated with three anticipated levels of experience on which the organization wants to accommodate all client (internal) and customer (external) needs and requirements.

Knowledge of this case study contributes to a body of epistemological knowledge in FM education regarding the continued evolution of FM and the dynamic nature of its alignment with organizational objectives.

More-Space: Strategies and Methods to Improve Corporate Real Estate Management

Alexandra Kovacs, Dietmar Wiegand, Stefan Emrich

Keywords: *Corporate real estate management, Facility management, Corporate social responsibility, Economical efficiency, Ecological efficiency*

The development of corporate buildings and the structure of workplaces changed dramatically during the last number of decades. Studies show that the utilization of e.g. office space lies at 5% over its lifecycle – so we need to rethink the design & the management of corporate facilities. In fact buildings which are heated, cooled and maintained but remain largely unused over time are economically & ecologically inefficient! Our built environment is identified as a crucial area for the realisation of the EU climate goals but the potential to reduce energy-demand and CO₂-Emissions remain widely unused. Beside the opportunity to save a lot of (real estate and company/organisational) money through an optimized FM - the mentioned arguments above illustrate, that the improvement of space-utilization is also part of Corporate Social Responsibility. More-Space analyses saving potentials of e.g. flexible workplace management. Know-How from real estate development, facility management and mathematical modelling and simulation are brought together to improve and optimize space-utilisation. On going studies show impressive saving potentials up to 50% of the current workplaces and an optimised utilisation up to 80% within companies. Other studies within school buildings showed that up to 40% of the classrooms could be used for other purposes through improved space-management. These evaluations add up to massive saving potentials of user costs of buildings and tons of CO₂-Emissions per year. The More-Space Tool is able to demonstrate each company its maximum benefit, as the model is customizable and supports rapid prototyping – a relevant characteristic for decision makers as managing directors, facility managers and others. The More-Space approach underlines that a successful achievement of the FM-potentials needs interaction between at least four competences: 1.Organisational development – necessary changes of processes and organizational structures; 2.Space Management - potentials e.g. within intelligent distribution of fixed-term rights of utilization but also within spontaneous occupancy; 3.Real Estate Planning/Development – Developers and designers must be able to create built infrastructures, which support dynamic usage of buildings and 4.Simulation – the high potentials for more efficient utilization often remain undetected until dynamic event-based computer-simulations facilitate, as the complexity of dynamic viewing of utilisation is extremely high.

Adaptability - How to Accommodate Changing User Preferences

Hilde Remy, Theo van der Voordt

Keywords: *Office market, Vacancy, User preferences, Property characteristics*

Financial and real estate crises and 'new ways of working' reduce the need for office space. As a consequence office markets have become replacement markets without a quantitative need for new office buildings: New buildings drive out bad buildings. In the Netherlands, currently 15% of the office space is vacant, of which 60% is structurally vacant.

When relocating, office organisations consider buildings and locations within geographically defined markets that optimally facilitate their main processes and support image and financial yield. Sustainable office space is important for image, status and possible expansion. Hitherto, new office developments were the response to this demand. Meanwhile, public opinion and governmental awareness oppose new office construction in locations with high vacancy. New ideas are needed to realise sustainable office space while limiting new developments. Redesign and upgrade of the existing building stock could be the egg of Columbus.

Knowledge of user preferences is important to understand relocations. In former research the relationship between property characteristics and office user preferences was revealed. This paper aims at answering the questions: which property characteristics are important for office relocations? To which extent are accommodation preferences changing?

To answer these questions, interviews were held with decision makers of large-scale office organisations and accommodation experts, discussing the triggers for relocations. Henceforth, surveys were held among creative office organisations, representing new user preferences.

This study is part of an on-going study on changes of office user preferences and the effect of these changes on the office market and the built environment.

Hidden Vacancy: Friend or Foe?

Hilde Remy, Joelle Lokhorst, Philip Koppels

Keywords: *Office market, User preferences, Hidden vacancy, Vacancy*

Financial and real estate crises and 'the new way of working' reduce the need for office space, and office markets become replacement markets without a quantitative need for new office buildings: In the Netherlands, currently 15% of the office space is vacant, of which 60% is structurally vacant, without perspective of future tenancy.

Despite the high vacancy, real estate advisors and office market experts expect the vacancy to continue rising: while new office buildings are still constructed, the take up of new space slows down and existing companies are expected to get rid of superfluous office space at their next contract agreement. However, other experts expect the hidden vacancy to reverse the trend of decreasing floor space to worker ratio.

This paper aims to investigate and quantify the occurrence of 'hidden vacancy' and estimate the effect of 'hidden vacancy' on the office market, answering the following research questions: to which extent does hidden vacancy exist in the Dutch office market? How does it affect the office user in specific and the office market in general?

To answer these questions, a survey was held among office organisations that intend to make accommodation decisions within the next 5 years. Henceforth, interviews were held with decision makers of large-scale corporate organisations and accommodation experts, discussing in-depth the influence of (hidden) vacancy on accommodation decisions.

This study is part of an on-going study on changes of office user preferences and the effect of these changes on the office market and the built environment.

Corporate Real Estate Holdings and Firm Returns of Shariah Compliant Firms

Omokolade Akinsomi, Seow Eng Ong, Muhammad Faishal Ibrahim

Keywords: *Firm Returns, Firm Performance, Corporate real estate ownership, Shariah Compliance, Dow Jones Islamic Index, United States*

In this paper we examine corporate real estate ownership of Shariah Compliant firms in the United States. We investigate the constituents of the Dow Jones Islamic Market Index (DJIM) which conform to Shariah principles particularly non-real estate firms which are listed on the New York Stock Exchange (NYSE) and the National Association of Securities Dealers Automated Quotations (NASDAQ) and their corporate real estate ownership characteristics from 1996 to 2009. In our analysis we investigate over 1,000 US Shariah compliant companies and their corporate real estate ownership structure from 1996 to 2009.

We find a strong correlation with Shariah restricted variables and corporate real estate ownership of Shariah compliant firms. Leverage is significantly positively correlated with corporate real estate ownership (CREO) while Cash + interest bearing securities are negatively correlated with CREO. We do not find any significant correlation with accounts receivables and CREO.

Furthermore we attempt to understand the role of corporate real estate ownership in firm performance particularly systematic risk and idiosyncratic component of return. We find in line with previous studies that a negative relationship between systematic risk and CREO in Shariah compliant firms, however this result is inconsistent when we examine our results based on industry classification. In addition, we find that the CREO of Shariah compliant firms do not explain the idiosyncratic return of Shariah compliant firms as we find a flat relationship between the idiosyncratic component of return (alpha) and corporate real estate ownership.

Our results that CREO do not play any role in explaining the firm returns in Shariah compliant firms are robust even when we control for Shariah restrictive variables.

How CREM Can Measure Added Value of Building Design: Knowledge Sharing in Research Buildings

Rianne Appel-Meulenbroek, Bauke de Vries, Mathieu Weggeman

Keywords: *Corporate real estate management, Added value, Knowledge sharing, Spatial network analysis, Building design*

Purpose - In present day society, focused on innovation, knowledge sharing (KS) is essential. CREM needs to provide accommodation designed for people to meet more often and share both tacit and explicit knowledge. Most workplace descriptions do not provide quantitative information on how the design actually stimulates KS. They cannot be implemented straight into a design nor convince general management in budget discussions. This paper tests the suitability of spatial network methodologies to provide this proof.

Design/methodology/approach - After developing a conceptual model from literature, the model is tested with a case-study of one large research driven organisation in the Netherlands. For each possible dyad between 138 employees (= 9453 dyads), several KS indicators and workplace aspects are studied with statistical analyses.

Findings - KS is clearly related to the allocation of people to the rooms and workplaces in a research building. Bumping into each other does not appear the reason for this relation. Up to distances of 22 meters dyads share average or higher amounts of knowledge. It is ambiguous whether the spatial network analysis methodology is relevant for measuring added value of the workplace for KS.

Originality/value - This paper provides empirical evidence on a 'softer' added value of the workplace, which is scarce. Previous studies relied mainly on qualitative descriptions of the workplace, while this paper tests a methodology to quantify the workplace in measurable aspects and correlate them statistically to organisational outcome measures.

Corporate Real Estate Incorporating Sustainability

Colin Elliott

Keywords: *Corporate, Strategy, Sustainability, Model, CSR*

Corporate real estate is now established as a significant component and contributor to major organisations; whether private, public or charity. However real estate also has a vital part to play in the creation of the 'sustainable organisation'. CSR and sustainability management requires the full acknowledgement of and input from the real estate resource in order for real long term sustainability and resilience to be deliverable.

The paper will present a conceptual model of how the three entities of real estate, corporate management and CSR can work in a synchronised manner that will bring about a real estate led sustainable portfolio strategy and support informed decisions

There is little opportunity for organisations to make integrated property portfolio decisions as much of the sustainability focus is compartmentalised into the CSR unit of the organisation. The metrics of CSR are classically energy and water use, carbon and pollution emissions. It can be challenging for the CSR process to disaggregate real estate from other contributing factors.

Business activities, property and types will be mapped against resource inputs and outputs. This will involve understanding the dynamics of property use. Ultimately, energy and resource use is heavily dependent on how people and goods interact with a range of properties. Systems mapping can establish where significant 'flows' are likely to occur; both endogenous and exogenous to the organisation.

Systems science based and will allow corporate property decisions and scenarios to be modelled for overall environmental and social impacts. Systems modelling is used extensively in sustainable development research and is a useful frame-work to evaluate impact.

The modelling would identify resource inputs and outputs. Ultimately, a whole system map will be produced and allow for effective dialogue across CSR, property and corporate management delivering a more sustainable real estate strategy.

Best Practice, Best Fit, Best Model? Strategic Configurations of Corporate Real Estate Management in Europe

Annette Kämpf-Dern, Andreas Pfnür

Keywords: *Real estate management model, CREM concept, Design parameters, Configuration, Qualitative data analysis*

Purpose - The purpose of this study is to team broadly accepted general management concepts with the specific situation of corporate real estate, and suggest a holistic configurations framework for CREM that takes into account the highly diverse context parameters.

Design/methodology/approach - Based on general management concepts and research on CREM issues a CRE management model – the 'CREM map' - is suggested that guides a study on which parameters drive CREM and how they are integrated. A qualitative approach is used that collects data from large European corporates. Analyses are performed through computer-assisted qualitative data analysis (QDA).

Findings - Multiple parameters form heterogeneous context constellations that make it necessary to individually configure a CREM system. While some 'general principles' regarding CREM objectives, strategy, organization, and control systems can be identified as 'best practices', the key finding is that a holistic concept for CREM needs to be guided by 'best fit'-considerations, resulting in at least several, context-specific designs of CREM concepts.

Practical implications - The CREM-map and CREM principles provide orientation in the process of design, implementation, and running of the CRE management system and its alignment to corporates' context and business needs. Connected line diagrams illustrate how 'best fit' concepts can look like.

Originality/value - First study that takes a holistic view on the organization of the CREM function regarding its alignment with the business strategy and including why different designs are chosen. This can assist to improve the performance of CREM, and sets the stage for further research on CREM configurations.

Corporate Real Estate Management: A Survey of the Largest French Companies Regarding their Head Office Management Strategies

Ingrid Nappi-Choulet, Delphine Dubart

Keywords: *Corporate real estate management, CAC40 Index, Head offices, France*

Over the past years, there has been a growing attention of the business world and of the academic research for corporate real estate management. It has been notably pointed out that real estate is a significant but under managed part of total corporate assets and that it could be source of value for companies.

More than half of France's largest firms have restructured their management of corporate real estate expenditures over the past three years as part of a broader strategy to offset rising costs. The Corporate Management Director has emerged as an actor of increasing importance for French firms.

To better understand this transformation, we have addressed members of the French Real Estate Directors Association (l'Association des directeurs immobiliers, ADI) and collected the testimonies of 74 Real Estate Directors of large French companies – including 23 CAC40 Index listed companies (the 40 largest stocks trading on Euronext Paris) – who together represent some 2 million m² of headquarters space and 68 000 sites throughout France, totaling over 78 million m² in real estate properties overall.

This paper reports on the results of this original survey, carried out at the end 2012, which is the first survey to be performed on corporate real estate management in France, especially on the largest companies head office real estate management. Using this pool sample, an exploratory analysis has been run to identify some key factors which can explain the size, the structure and the strategy of corporate real estate units within these companies. To confirm the results observed in the first analysis, statistical hypothesis testing has been then applied.

Management of Complex, Dynamic, Open Systems

Dietmar Wiegand

Keywords: *Management, Complexity, Real options, Behaviour*

Project organisations are complex, dynamic, open socio-technical systems, in the domain of building construction designed to complete another, in many cases very complex system – a building. Two research projects in Austria dealt in these two senses with the 'management of complexity':

Within the project 'Cost-Benefits of the Integrated Planning' (co-be) sequential and integrated planning processes of a complex building have been compared. A planning experiment with 200 probands showed, that the early integration of experts for building services e.g. increases the job satisfaction and reduces the period needed for the project development, but the quality of results and necessary manpower needed remains more or less identical.

'Interdisziplinäre Forschung zur Energieoptimierung in Fertigungsbetrieben' aims at the integrated optimization of building, machinery and building services. Three strategies dealing with the increasing complexity of integrated optimization have been developed and will be presented.

Recent Trends in International CREM

Christoph Zimmer, Thomas Botond

Keywords: *Corporate real estate management, Facility management, Multinational corporates, Business models, Trends*

Purpose - This paper discusses the most recent and future developments in corporate real estate management (CREM) for multinational corporates - focussing on organization structures and role definitions. The main purpose of the analysis is to show best practice business models based on business cases. Varying degrees of vertical integration of real estate management functions (portfolio, asset, property and facility management) are presented and analysed with regard to the generated value added and leverage opportunities.

Approach - The presented CREM business models are based on ICME Management Consultants' project experience and on acknowledged business standards. The most important trends in international CREM were deduced from a recent survey among CREM executives conducted by ICME.

Findings - The challenge of an increasing internationalization of core businesses will be the main driver for the future trends in CREM and corporate FM. CREM will mainly be organized as a global center of excellence providing a global strategic network of CREM entities. Pressure on companies and on efficiency of real estate management increases further in the course of globalization of core business activities and increasing user requirements. For this reason, the separation of owner functions (CREM) and operation functions (FM) cannot longer be maintained. It is expected that CREM and corporate FM in globally operating companies will increasingly merge together in future. The main challenges in managing corporate real estate are increasing quality demands and space requirements of users, indicating a need for focusing on corporate FM services. The most important leverage in CREM activities will be the divestment of company sites in order to enhance core business yields by releasing real estate capital.

Value of research - It is anticipated that the outcomes of the paper will assist senior executives and CREM responsables in the definition of appropriate CREM strategies. Further, optimization potentials with regard to CREM business models can be identified.

Modeling Sustainability Maturity in Corporate Real Estate

Rasita Masalskyte, Mia Andelin, Anna-Liisa Sarasoja

Keywords: *Sustainability, Maturity model, Corporate real estate, Sustainable practices*

Purpose - Sustainability in Corporate Real Estate has lately become a concurrent part of almost every enterprise. However the extent of activity may extremely differ in various industries. Sustainable Real Estate Practices have been broadly analyzed in the recent studies, but the holistic approach to the issue is missing. The purpose of this paper is to summarize and systematize the current activities and propose a generic Sustainability Maturity Model in Corporate Real Estate.

Methodology - The theoretical model is created based on findings from literature review. It consists of Sustainable Real Estate Practices which are divided into 6 dimensions: resources, processes, governance, communication, finance and strategy. Throughout the practices the role of Real Estate at each of the five Sustainability Maturity levels is explained.

It is assumed that the highest proficiency of Sustainability is mastered by the most sustainable companies and enterprises. Therefore, the reliability of the model is tested in interview sessions with the field leaders in Finland. The results are analyzed using qualitative research methods.

Findings - Over 10 interviews with Finnish companies were conducted to find out what Sustainable Practices are possessed at different maturity levels. Based on these results, the theoretical model is tested and developed further and as a result generic Sustainability Maturity Model for Corporate Real Estate is suggested.

Originality/value - This model provides a holistic and systematic approach to the present Sustainable Practices and demonstrates how Corporate Real Estate contributes to Company's Sustainability.

Attributes of Alignment of Facilities Management to Business Needs: an international comparative analysis

Danny Then Shiem-shin, Per Anker Jensen, Rogerio Fonseca Santovito

Keywords: *Facilities management, Alignment, Core business, International, Survey*

Purpose - The purpose of this paper is to present a model for Real Estate/Facility Management alignment, and to validate it based on questionnaire surveys carried out in a number of countries around the world.

Design/methodology/approach - The model for FM alignment is inspired by the work of the fathers of the Balanced Scorecard in their book "Alignment" (Kaplan and Norton, 2006). The model includes a number of criteria for alignment between business needs, facility solutions, FM services and FM resources. Three multi-year questionnaire surveys were conducted using the same methodology, in different languages: English, Portuguese and Danish. Respondents were senior professionals in the area of Real Estate/Property/Facility Management, mostly working at strategic levels, and representing countries in Asia, Australia, Europe, North America, and South America. The results of the surveys were combined and then analysed, using both discourse analysis and statistical tests to validate them. Differences in the priorities of the alignment criteria are described and analyzed.

Findings - A main result of the surveys is that all of the alignment criteria were seen as relevant and useful in near all countries, but the priorities accorded to the different criteria varied a lot for some of the alignment variables in the different countries. The highest degree of agreement was on capacity, being the most important criteria for the alignment between supply and demand of facility solutions in relation to business needs. One of the main differences was between the importance of strategy versus cost in the alignment between facility solutions and FM services.

Research limitations/implications - The validity and value of the model was evaluated positive in all countries, but by far most positive in USA and least positive Europe. Although the survey results might be limited in terms of a broader generalization, this was not the main purpose of the research, but rather the test of hypotheses about alignment criteria and their validation by professionals, thus enabling further developments of the framework.

Originality/value - Alignment to business needs is an essential management task of great importance for Facilities Management in order to create added value to the core business. Moreover, as companies go increasingly global, an international comparative study of these priorities becomes more relevant. However, there has been limited research into such alignment.

The Concept of Latvian Industrial Property Market Development Model in Context of Strategic Planning

Tatjana Staube, Ineta Geipele

Keywords: *Ensembles, Regional specialization in Latvia, Industrial location, Strategic planning, Modelling*

The purpose of the Article is to introduce the worked out model on the Latvian industrial real estate market development forecasting for the professional auditorium. The originality/value of the Paper is that the proposed model anticipates the high quality (A class) industrial property stock and the manufacturing branch potential capacity applying the projections of the European climate change data. The research is supplemented with the results from the industrial regional specialization analysis recently made for the Baltics. The main findings are that the model predicts the manufacturing value added dynamics planned in the Latvian National Program until 2020 conforming the impetuous development scenario that is too ambitious at the current industrial market development stage of an extremely low regional specialisation level in Latvia. Although the weighted average scenario's projected manufacturing capacity of 1.01 compound average annual growth rate corresponds to 1.72 times larger A class industrial property stock in 2020 in Latvia that expects the sufficient capital inflows and increase of the multinational enterprises business activity. The use of the ENSEMBLES project's complex data results, logical approach and comparisons, the system and dynamic row's analyses, calculations of the Gini coefficient on regional specialization supported by the empirical evidence on the scientific and business literature review is a complex of the methods applied in the research.

Actor Network Theory as a tool to understand the sustainable use of the historic built environment for the provision of commercial hospitality property

Tanya Rountree, Ian Elsmore

Keywords: *Sustainable management, Hospitality, Historic built environment, Actor-network-theory*

The relationship between buildings and the people that inhabit and utilise them is complex and multifaceted. This complexity is dependent on a number of interconnected factors such as; the nature of the building, the building's status and its use, all of which affect the perception of the building and its contribution to the local environment. The purpose of this paper is to consider what happens when a particular set of these factors combine. Hospitality and the built environment are interdependent upon one another and have been so ever since the inception of civilisation (O'Gorman 2010). The commercialisation of hospitality has been accompanied over the centuries by a combination of the development of specific buildings and the adaptation of existing buildings for hospitality purposes. This has led to the adaptation, revitalisation and rejuvenation of post-industrial buildings for commercial hospitality purposes as a key means to achieve the continued and sustainable use of the historic built environment (Mc Neill, 2008, Bell, 2005). This creation of hospitality outlets in character buildings can be seen as a 'lightest touch' option allowing the implementation of conservation and planning legislation, an option that also provides the possibility of income generation and employment creation with continued public access and therefore fulfils their obligation not only to preserve such buildings but also to achieve sustainable development (PCPAct, 2004). While adaption can result in operational and financial challenges (Ransley and Ingram, 2004) these can be countered by opportunities for brand management. Current UK Government advice is that developers and policy makers should see the historic built environment as an asset, with economically viable reuse being encouraged as a means of achieving sustainable development (DCLG 2012). But in order to achieve successful adaptation an understanding of the relationship between buildings, people, operations and legislation is necessary. The alternative ontological perspective offered by Actor-Network Theory (Law, 1999, Latour, 2005), bridges the traditional social-physical divide and provides a tool for allowing the relationship between hospitality and the built environment to be understood.

Factors Influencing Customer Satisfaction with Chain Budget Hotels in Bangkok

Paphada Cherdchamadol, Pitinan Kawachart

Keywords: *Chain budget hotel, Satisfaction, Ecotangible, Green, Bangkok*

The budget hotels in Thailand are likely to grow by the growth of low cost airline. Since cheaper airline ticket, middle management employees and their families including tourists travel more and more. Other than that, budget hotel business requires low investment but good return. Not surprisingly, the giant public company in Thailand hotel business, CENTEL, has been planned to expand new brand of 2 star hotel chain to serve the number of increasing travelers for AEC in 2015. However, IBIS Bangkok, there still wonders that ecotangible is the factor which significantly impact on customer satisfaction or not.

Consequently, This paper proposes and tests a framework explaining the factors influencing customer satisfaction (SAT) with chain budget hotel in Bangkok especially the factor, ecotangible.

Data was collected from both customers who were staying at the time we collected and customers were recently experienced within 6 months. Five hypotheses are :

H1 : hotel image has a positive and direct effect on SAT.

H2 : Ecotangible has a positive and direct effect on SAT.

H3 : Physical quality has a positive and direct effect on SAT.

H4 : Service quality has a positive and direct effect on SAT.

H5 : Value for money has a positive and direct effect on SAT.

The reliability and dimensionality of customer satisfaction are assessed by using exploratory factor analysis and multiple regression analysis which is employed to test aboved hypothesized relationships. The result shows that there are six factors which directly positive impact on customer satisfaction. The six factors are hotel image, ecotangible, room quality, room facility, service quality and value for money. The results of this study will provide developers in chain budget hotel to increase customer satisfaction and indeed, overall performance. Moreover, developers effectively allocate limited resources on appropriate factors to meet the customer satisfaction.

A Framework for Sustainable Real Estate Decision-Making and Assessment

Pernille Christensen

Keywords: *Delphi method, Phenomenography, Sustainability criteria, Sustainability indicators, Sustainability measures, Sustainability drivers*

Since the 1970s, we have seen a significant change in the attitudes of the society, governments and the business community toward sustainability measures and regulations. Most recently, the real estate industry has struggled through the mortgage crisis and the global financial crisis resulting in the emergence of a new period in which the real estate industry is addressing sustainability issues using a more holistic, systems approach. Companies are no longer adopting sustainability concerns solely for reasons related to "social good"; instead, they are focusing on how to "prove" to their stakeholders that they are focused on sustainable property performance and management - and that sustainability-related initiatives are positively impacting their bottom-line.

Current market conditions have forced companies to address market uncertainties, and industry leaders are using sustainability initiatives as a means of managing risks and meeting the requirements of a market in transition. Companies are increasingly judged not only by the corporate social responsibility values, as reflected in their CSR statements, but also by the actions through which those values are actualized and how these actions impact their financial stability. This also extends to how companies make decisions about sustainability initiatives for their real estate assets. These market changes have resulted in new strategies for decision-making and assessment of both specific sustainability initiatives and sustainable real estate. Simons, Slob, Holswilder and Tukker noted that "more complex and more integrated strategies will be needed to deal with the new societal challenges now associated with sustainability".

The Investment Value of Green Buildings in Japan

Franz Fuerst, Chihiro Shimizu, Jiro Yoshida

Keywords: *Eco-labels, Hedonic pricing, Green building investment, Japanese housing market*

This paper aims to extend the existing evidence on the investment value of green buildings to international markets, specifically the residential real estate market in Japan. Using a unique transaction database of condominiums in the Tokyo metropolitan area and a hedonic analytical framework, we find that green buildings command a small but significant premium on both asking and transaction prices. The magnitude of this premium is found to fluctuate depending on market conditions. This finding is consistent with findings from other countries. As far as we are aware, this is also the first hedonic study of green value that incorporates detailed buyer characteristics.

What Drives and What Hinders Energetic Building Refurbishments in Germany?

Ralph Henger

Keywords: *Energy efficiency, Building refurbishment, Policy instruments, Heating costs, Refurbishment measures*

Two-third of the residential building stock in Germany is older than 35 years and bears a lot of potential for energy savings. The German Federal Government has therefore committed itself to reduce the primary energy in the building sector down to 80 percent by 2050. This ambitious target requires doubling the energetic building refurbishment rate from its current 1-percent level of the building stock per year. The national strategy basically contains two key elements: stronger building requirements and subsidies on building refurbishment. This paper analyses how these programs affect the incentives and the profitability of retrofit investments and discusses the main drivers and barriers that affect the investment decisions made by the owners and landlords. Based on several datasets we show how initial returns depend on influencing factors like saving measure, renovation scope, building type, building age, housing conditions, rents and market situation.

All Euros of Energy Savings are Not Equal: Energy Mix, Expected Future Prices and Prices Volatility Importance

Philippe Bélanger

Keywords: *Energy savings, Energy mix, Discount rate, Future prices, Price volatility*

Energy efficiency is one of the more economically sound ways to sustainability. Real Estate accounts for 30% of energy consumption in most developed countries. It also accounts for more than 30% of GHG emission. In the last several years many research have been looking to energy efficiency technology. Very few of them include the future energy price forecast in their valuation. Very few of them include the fact that different energy source savings may have different value. This paper demonstrates that one euro of annual energy savings in different source has a very different value when we account for expected future cost. It also underlines the fact that energy source prices are more or less volatile depending on sources. This should imply different discount rate for investment in technology that involves savings of those energy sources with high prices volatility. Following this demonstration the paper support the idea that whoever assesses the value of energy efficiency have to make assumption on energy source saved, future energy prices, appropriate discount rate and maturity of the investment. When researchers and professionals omit to do those assumptions explicitly they do it implicitly.

Hedonic models have been widely used by researcher to assess the value of buildings properties. We use forecast at the moment of the transaction to underline the integration of energy efficiency value in building valuation with hedonic models. We use a US database to investigate the relationship between building energy consumption and building value. We also investigate this relationship with rent. Results suggest that the energy consumption that impacts the rent value is different from those who impact transaction price. It appears that overall energy cost impact the rent value, but not the transaction price.

In conclusion, the economic sustainability assessment of an energy savings investment must take into account energy sources and future price.

Economy Meets Environment: An Integrated Life Cycle Approach

Helmut Floegl, Christina Ipser, Susanne Geissler, Hildegund Mötzl, Ulrike Radosch

Keywords: *Life cycle costs, Life cycle assessment, Environmental and economic building optimization, Consistent life cycle model architecture*

The objective of the research project LEKOECON is to quantify the environmental and economic resources consumed by a building during planning, construction and in the utilisation and operation stage. The complexity of the utilisation process over the long life span requires a calculation model with well-orchestrated normative definitions and idealisations.

The presented environmental-economical model is based on the life cycle costs model LEKOS, developed by the Danube University Krems, and the environmental assessment software ECOSOFT by IBO. A new consistent model architecture was built up in order to synchronise the different characters of the environmental and economic resources of the building along its life cycle. This new architecture enabled a holistic consideration of the consumption of the environmental resources from elements as well as from services over the whole life span.

Purpose of the system integration is a combined economic and ecological life cycle model for buildings, realised in an easy-to-use tool for the evaluation of life span resource consumptions at different stages of the design process. In addition specific life cycle resource consumption parameters are defined. This allows to compare the environmental and economic impact of different building types of different sizes and of different planning variants.

Energy Labelling and Residential House Prices: Some Evidence from the United Kingdom

Franz Fuerst, Patrick McAllister, Anupam Nanda, Peter Wyatt

Keywords: *Energy labels, House prices, Hedonic model, Energy, Performance, Certificates*

Following the EU Energy Performance of Buildings Directive requiring all buildings at construction, sale or rent (or every ten years) to have certificates providing information about their energy performance through a rating of CO₂ emissions, Energy Performance Certificates (EPCs) and the Display Energy Certificates (DECs) were introduced in the UK in 2008. An EPC consists of an asset rating which is intended to inform potential buyers or occupiers about the intrinsic energy performance of a building. In the same vein as consumer products, buildings are rated on a scale A to G with A being the most efficient. This paper outlines the results of the first large-scale empirical analysis of their effects on residential property prices in England and Wales. It draws upon a sample of approximately 400,000 dwellings in England and Wales that had sold in the period from 1995 to 2011. To enable repeat-sales analysis, the sample included a large proportion of dwellings that had sold more than once. The hedonic model specifications reveal that compared to dwellings EPC rated G, dwellings with better EPC ratings have sold at a significant price premium. This willingness to pay for superior EPC ratings are robust and consistent across several model specifications and samples.

The Green Behaviour: Experimental Economics and Sustainable Real Estate

Sven Bienert

Keywords: *Game theory, Tenant behavior, Experimental and behavioural economics, Consumer behavior, Sustainable real estate*

The importance of lowering the ecological footprint of human kind to a sustainable level is meanwhile unquestionable. The number of green products is increasing, but the product itself is not sufficient to reduce the ecological imbalance. Since life-cycle-assessments and life-cycle-cost approaches in real estate investments became common, it is known that not just the construction but the sustainable operation of a building leads to the most ecological benefit. Therefore, consumer behaviour is the key to enable and push a sustainable development. By now, the real estate industry focused mainly on the property side rather than on the user and his behaviour. Addressing this issue, the research idea of the study is to introduce experimental and behavioural economics as well as aspects of game theory within sustainable real estate in order to reveal the triggers of individual user behaviour. The paper combines subsequently three disciplines: Game theory/ experimental economics, real estate and sustainability. Theoretical and practical findings of this study should enable companies to address the 'right' issues and to develop adequate incentive schemes for their employees in order to trigger 'green behaviour' and finally limit resource use to reduce operating expenses. Furthermore, efficient strategies to increase personal involvement for climate protection are developed and detailed insights regarding user behaviour are given.

Analysing Sustainability in Real Estate through Obsolescence

Yona Kamelgarn

Keywords: *Sustainable buildings, Obsolescence, Refurbishment*

Literature on 'green value' shows that certified office buildings have higher rents than conventional buildings. However, more recent works indicate that this rental premium diminishes with the expanding supply of certified buildings. Some authors suggest that this premium for certified buildings could evolve into a depreciation of buildings with poor environmental performance. As certified buildings become the rule for new office developments, buildings with poor environmental performance would no longer meet tenants' functional requirements and would become obsolete.

This paper analyses sustainability features as a new factor of obsolescence. First part proposes a theoretical model to account for sustainability in refurbishment decision-making. In particular, we assume that refurbishment cycles are planned over a building's life to counter obsolescence and physical deterioration. Second part consists in an empirical study based on the French market. It analyses which are the sustainability characteristics sought after by real estate managers beyond the brand of the environmental labels. This paper contributes to research on 'green value' through a focus on obsolescence. The results could be used by investors to better evaluate sustainability in their investment decisions.

Life Cycle Optimization of Energy Efficient Industrial Facility

Iva Kovacic, Linus Waltenberger

Keywords: *Industrial building, Life cycle assessment, Energy efficient industrial facility, Decision-support tools, Life cycle costs*

The minimal investment cost, flexibility and expandability of the built structure were the highest priority planning aims in the development and planning of industrial facilities and production halls. With the sharpening of the building codes and upcoming of European policies on climate protection and energy efficiency – such as the plus-energy buildings, the life cycle optimization is starting to gain importance with industrial investors. Optimized, highly efficient building hull and building services play crucial role in the realization of over-all energy-concept of modern industrial facility.

In the case study of energy efficient industrial facility within the research project INFO (Interdisciplinary Research for Energy efficient Production) a tool for calculation of life cycle costs and emissions of the building hull was developed. For the proposed building model of industrial facility three different façade-typologies (metal sheets, metal-sandwich panels, wood panels) were simulated and calculated by the tool.

In terms of ecology (CO₂ emissions) the wood-based façade features the best performance, however is most costly in the initial costs, which would have been a knock-out criterion when planning an industrial facility in the past. However, the life-cycle cost related findings imply that even though the examined typologies feature large differences in the initial cost, after a period of 50 years of life-time all three façade-types sum up to the same amount of life-cycle costs.

We argue that for achievement of sustainability aims therefore a long term view is necessary, as well as further development of planning tools which support decision-making process in the early design phases.

The Diffusion of Green Buildings in the United States: A Spatial View

Thomas Braun, Marcelo Cajias, Sven Bienert

Keywords: *Diffusion of innovations, Green buildings, Prime properties, Spatial analysis*

As the real estate industry is responsible for about 40% of the economy's end energy consumption, its potential to contribute to a sustainable development is accordingly high. In terms of climate change mitigation, the response of the property sector is apparent by the diffusion of green buildings. Considering green buildings as a new product in the real estate market, it is necessary to analyze its diffusion pattern in order to conclude from aggregated data to the actors' behavior behind several stages of adoption. By now, the focus of the green building diffusion literature lies more on the temporal than on the spatial dimension. However, the popular quotation 'labeled properties = prime properties', as one might assume a CSR and image driven demand of international institutional investors, has never been analyzed in detail. The question is what leads the players of the real estate industry to adopt the green innovation in their investment decisions in terms of constructing, renting or investing in certain locations. This paper provides evidence of the factors determining the spatial diffusion of green buildings in the US market by gathering real estate and macroeconomic data. Our contribution to research literature is to identify barriers for a politically intended innovation and delivers a basis for future decisions by policy-makers and investors.

Renovation and Sustainable Housing

Gerard Booij

Keywords: *Sustainable housing, Existing housing, Renovation, Building quality, Green building*

As for sustainability, the focus should not only be on new building realization but foremost on existing houses. Renovating houses is more environmentally friendly (e.g. concerning materials and energy usage) and cheaper in the end. In the Netherlands up to about 50% of the existing houses have some kind of sustainable quality like insulation, double glazing or energy reducing installations. The first step in any renovation building project should be to measure and document the quality of the houses in detail. Air quality, ventilation, moisture and condensation in the construction, thermal bridges, heat leakage, energy usage etc. should be measured by e.g. blower door tests, smoke detection tests, infrared imaging, monitoring occupants' behavior and modeling (calculations) in order to investigate each problem in relation to the others. Based upon these measurements causes and solutions of the detected problems should be considered. Solving one isolated aspect, however, will frequently result in increasing other problems. Moreover, from the beginning of the project all building partners should operate as a team in order to be able to realize integrated renovation design. Building Information Management tools are recommended to share information and knowledge during realization by the contractors. All partners should be responsible for the quality of the end result, also after delivery of the project. In renovation projects, detecting and solving current problems should precede the application of new advanced sustainable technology, although it can be done simultaneously.

Energy Efficiency and Market Efficiency in Belgium: Are More Energy Efficient Homes Rewarded in the Property Market?

Ronan Lyons

Keywords: *Energy efficiency, Building energy ratings, Hedonic valuation, Belgium*

Residential buildings account for a significant proportion of all emissions of greenhouse gases. It is the aim of EU policy to reduce emissions by up to 95% by 2050. This means that the energy efficiency of the stock of residential property will need to improve dramatically. But will such improvements be rewarded in the property market?

Using a dataset of Belgian property listings from 2012, this research explores the extent to which energy efficiency is rewarded in the various sales and lettings segments of the Belgian property market. The study further investigates whether the premium to energy efficiency varies across Flanders, Wallonia and Brussels. Lastly, the detailed nature of the CPEB energy efficiency rating and large dataset allow an investigation of non-linearities in the energy efficiency premium, a heretofore unexplored aspect of the relationship between energy efficiency and accommodation costs.

Climate Mitigation and Adaptation in Land Management: Discrepancies between Objective and Realisation of Urban Development on Local Planning Levels

Christoph Janosch Stankiewicz, Hans Joachim Linke, Andreas Pfnür

Keywords: *Land management, Zone development planning, Climate mitigation, Climate adaptation, Decision-making process*

By means of urban land use planning and readjustment, land management serves to control the development of settlements in cities. It also provides long-term planning foundations to meet the challenges of climate change. Not least due to these long-term decisions, land management will form the basis for investment in real estate, as real estate has to fulfil climate-relevant demands. Derived from higher-level guidelines, municipalities create individualised approaches towards climate change. These approaches interpret the principles of urban development according to specific starting positions. The article's focus is on to what extent higher-level requirements are met on the binding planning level, which impact these measures have on climate change, and how the underlying decision-making processes work.

The cities of Frankfurt, Munich and Stuttgart will be analysed on the basis of their hierarchical planning system according to the most similar case design. Their formal and informal objectives of plans and guidances will be compared to the binding values for the projects on the operational level. By means of a quantitative analysis of zone development plans, the different strategies of the cities can be revealed. The quantitative analysis also shows how the trends have changed and what guidelines have a real effect on the owners. Embedded in the Institutional Analysis framework by Elinor Ostrom, a qualitative document analysis and interviews with the municipalities uncover the processes that lead to the observed decisions and explain the motivation for the observed action.

Despite having the same objectives, the cities pursue different strategies and set their priorities. Our initial studies show a discrepancy between the goals defined at higher levels and what is actually practiced. It appears that in practice, climate concerns are not given the same importance as they are given on less detailed planning levels. Climate change measures are not used as an authoritative basis for justification of projects, but instead, they merely serve as a supplement which can be used strategically to influence developments.

The article outlines which measures of climate mitigation and adaptation from higher-level strategies are incorporated in actual projects and clarifies what status climate change has in local communities. In addition, decision-making processes and motivations which lead to commitment in climate change-specific land management will be revealed.

The Role of Stakeholder Awareness in the Sustainable Construction

Gunther Maier, Sabine Sedlacek

Keywords: *Real estate development, Principal agent problem, Sustainable building, Actors' perceptions, Interest conflicts*

When it comes to sustainable construction the question of quality comes into the discussion since sustainability can be defined as a quality criterion of a building. The real estate market is complex and shaped by different stakeholders (i.e. developers, investors, etc.) with their individual interests. Building performance assessment depends on those different interests who vary between economic performance as the prime focus of investors and comfort as well as health factors on the side of occupants which can be categorized as potential and actual performance (Cole 1998). Because of the number of actors being involved the sector seems to be fragmented which opens the door for principal-agent problems since decision making and information are dispersed. While the literature maintains that an agent is defined as a third party who acts for, on behalf of, or as representative of the principal will act in the best interest of the principal when the incentive structure is such that the agent is rewarded for outcomes favoring the principal (Arrow 1985) the question of defining the agents in a real estate transaction becomes crucial. This might be specifically important for sustainable constructions since we can find assumptions in the literature that designers and clients are active agents since certification standards are applied during the planning and design phases and decisions regarding green building practices are driven by clients' commitment to sustainability whereas constructors have been seen as passive agents. With new evidence about negative impacts of the construction phase on sustainability a shift towards a more active role of constructors happened. This goes hand in hand with the different actors' perceptions of sustainable construction and the level of knowledge about sustainable construction and its benefits. The argument follows the lines that environmental assessment requires more communication between the stakeholders throughout the whole process. Thus coordination to enhance trust, communication, commitment, and a clear understanding of roles becomes more relevant to manage the transition of the building sector to sustainability. Consequently new modes of governance are needed that take into account the long-term orientation, the uncertainties and complexities and the multitude of actors and interests involved. The paper is designed as a review of the literature including a few cases of green building certification projects.

Why Act 'Green'?

Philip Koppels, Fleur van der Erve

Keywords: *Sustainability, Energy efficiency, Offices, Ecological responsiveness*

Over the last couple of years, there has been a growing interest in the financial performance of "green" buildings. Past research results indicate that green buildings are able to realise higher rents and sustain higher occupancy rates compared to other (non-green) buildings. It is argued that these findings are explained by the (supposed) additional occupier benefits of green buildings, such as lower operating costs, improved employee productivity and image benefits. However, in many studies it remains unclear which motive primary drives office users to prefer green buildings. Furthermore, the reported results -- the percentage rent increase and occupancy rates -- deviate to a large extent, while comparable methods and data sets are used.

The aim of this research is two-folded. First, it strives to formulate a model of corporate real estate ecological responsiveness. What are the main motives of firms to lease or buy green buildings? Second, different hedonic model specifications and estimation techniques are compared to achieve insight in which hedonic model technique provides the most credible results regarding the price effects of green buildings. The relative large deviations, and sometimes implausible signs, in the reported results of the various hedonic price studies, might indicate that in some cases the models suffer from misspecification. Possibly resulting in an over- or underestimation of the rent price and occupancy effects related to green buildings.

This research combines various research methods to achieve both research aims. First, a meta-analysis of published green hedonic office price is performed. Whereby special attention is given to the model specification and estimation methods. Second, an hedonic office price study is performed for the Randstad agglomeration -- Amsterdam, Rotterdam, Utrecht and The Hague -- that compares different plausible model specifications. Finally, the hedonic study is followed up by interviewing office tenants to derive their motivation for choosing green buildings.

Climate Change: How to Explain Municipal Decisions in the Real Estate Sector: A Case Study Approach from Germany

Marina Hofmann, Hans Joachim Linke, Nikolas Müller, Andreas Pfnür

Keywords: *Climate change, Efficiency, Public policy, Decision-making criteria, Qualitative data analysis*

The German cities Frankfurt, Munich and Stuttgart approach their climate protection initiatives in the real estate sector with different measures although their goals are nearly the same. This paper examines the underlying efficiency understanding and further limitation factors in the municipal decision-making process. The focus is on the requirements and promotion of energy efficiency and greenhouse gas reduction in real estate.

As a part of a research group supported by the Deutsche Forschungsgemeinschaft (DFG) we have an interdisciplinary look at these cities and make use of the Institutional Analysis Framework by Elinor Ostrom (1990) to collect and to aggregate decision-making impacts. Therefore, qualitative as well as quantitative data analyses based on a document analysis and interviews with representatives from the municipalities and the real estate sector are used to model the exogenous constraints of a city as well as the local decision-making arena.

There seems to be evidence that cities take into account different efficiency approaches to legitimate their climate protection decisions. First results show that the decision-making process is characterized by an owner-, user-, or producer-oriented real estate management perspective. This fact heavily influences the measures taken, first and foremost the financial impact on the respective stakeholder.

This paper categorizes urban strategies to reduce greenhouse gas emissions in the real estate business by identifying influencing factors in the municipal decision-making process. These findings will help to make use of the enormous greenhouse gas reduction potential existing in the metropolitan real estate sector.

Who Pays Green Office Building Premiums in Sydney: Owners or Tenants?

Jeremy Gabe, Michael Rehm

Keywords: *Commercial, Office, Sustainability, Energy efficiency, Australia*

Preliminary studies on green multi-tenanted office buildings in the United States, Europe and Australia have widely reported the presence of price premiums for certified green or energy-efficient buildings. When researchers look at sales and rental premiums, it is generally concluded that both are present relative to uncertified office buildings. The scale employed in the vast majority of these studies is the building scale, not individual tenancies. Because of this, an alternative explanation for energy efficiency rental premiums is that they originate in the methodology used to calculate a single rental rate that represents the heterogeneous mix of rents within a single building. To test the robustness of rent premiums in Australia, we self-construct a dataset of lease transaction data covering all NABERS Energy-certified buildings in central Sydney directly from lease contracts. The characteristics of each transaction are placed in a hedonic regression model to explain annual base rent per square metre. We find neither significant premiums for highly rated buildings nor significant discounts for poorly rated buildings, implying that the alternative explanation of green rental premiums arising from the process of calculating a single rent for an entire building has merit. Incentives and net effective rent are also considered, to test if Sydney rents are shadow prices. We conclude that green building price premiums in Sydney are paid by owners, not tenants.

Economic Sustainability in Social Housing Interventions: The Impact of Operating Variables on Housing Costs of Temporary Dwelling

Luisa Ingaramo, Stefania Sabatino, Antonio Talarico

Keywords: *Social housing, Energetic performances, Income burdens, Energetic expenses, Housing costs*

The paper discusses the results emerging from a research carried out on a social housing intervention currently in progress in Turin, Northern Italy. The aim of the research relays in defining a model useful to control the building integrated sustainability, especially regarding some designing and operative variables such as plants typology, building technologies or inhabitants income burdens, all affecting housing cost components as well as the operating margin of the building manager.

The methodological approach is based on the application of a financial-economic and dynamic tool finalized to simulate cash flows scenarios depending on variations to be applied to different variables such as energetic performances of the building, average rents per type of dwelling, etc.

The emerging results evidence that it is effectively possible to balance the housing costs components (rent rates and operating expenses) with the energetic performances of the building, reducing up to 60% the energetic expenses and up to 10% the 'housing cost' as a whole. The results highlight the added value acquirable by real estate promoters and developers in testing ex-ante technical, designing and managerial choices by means of flexible scenarios.

The value of the analysis lies in showing how to take into account architecture, plants and relative impacts on housing costs, in order to define the best mix of technical and operating inputs, to foresee and adjust the economic and social variables, also in relation to a specific urban location and a peculiar mixité of inhabitants.

A Case Study: Transforming a 120 Year Old Building in Use to a Green Building

Hermann Lebherz, Annelie Stumpp

Keywords: *Green building, BREEAM in use, Revitalisation under use, District heating ducts, Waste incineration plant, Water saving fixtures*

An case Study - an 120 year old single-tenant building - an former railway head quarter had to be transformed under use – into a multi-tenant building to give another lease of live. Up to recently the consumption of energy could not be metered and billed to the tenants. It was decided to split up the building into letable areas of 400 sqm each. Infrastructure shafts, for water, sewage, heating and electricity had to be broken through on going rented spaces. New district heating ducts – with energy form a waste incineration plant - were implemented with better insulation. The plant rooms were totally new laid out with new variably adjusted heating pumps, to reduce the carbon footprint. A whole new efficient low temperature water heating system was built in. All energy consumption is being metered to save the utmost energy. Water saving fixtures and urinals are introduced to save water. Water retaining artificial trenches under a car park were introduced to retain more water from the partly new turfed roofs. New cables for electricity and new meters were introduced. To save further energy presence detectors for the energy saving lighting fixtures were introduced. Highly insulated windows were implemented, to save energy, yet to get thermal gain, through the window openings. The transformation of the building structure is accompanied with of the first German BREEAM in use and BREEAM.de certification.

A 'Planning Grid' to Support Environment-Friendly and Sustainable Social Housing Initiatives

Luisa Ingaramo, Stefania Sabatino, Francesca Bodano

Keywords: *sustainability performances, social housing, certification protocols, life-cycle analysis, environment-friendly*

The paper aims at developing a 'planning grid' to address sustainable social housing interventions. The purpose lies in acquiring integrated competences to support, develop and monitor residential proposals, from the pre-feasibility up to the on-going phase, covering multi-dimensional impacts on housing costs, investment sustainability, energetic performances as well as on the quality-of-life level induced in the neighborhood surroundings.

The methodological approach is based on the analysis of 30 tools currently widespread in the international building sector to assess environmental and energetic performances. Among them an in-depth analysis extrapolated 7 main certification protocols (LEED, ITACA, CASAClima, BREEAM, LiderA', Audis, SB100) and selected 132 indicators (out of the total 448), specifically pertaining to social housing.

The selected indicators, useful to measure the environmental and energetic performances beyond the minimum mandatory levels requested by the Italian building sector, have been grouped together into new classes and sub-classes. Furthermore, each sub-class has then been analysed according to the macro-categories defined by the CEN TC 350 standard in order to integrate and uniform the check-list of requirements, purposes and goals coming from the different protocols. The synthetic 'planning grid' obtained, covering the whole life-cycle of a social housing intervention, considers, at the same time, the economic, social and environmental impacts on the building and its context, housing costs, life quality and the users' awareness of the housing resources consumption.

The study represents a first attempt in the Italian context to organise a grid of fundamental minimum requirements to develop sustainable social housing initiatives. The set of 7 classes of indicators is out of doubt a strategic 'planning grid' useful to guide public and private decision making in defining design and management priorities, also within the field of public announcements.

A Demonstration of Sustainability Arguments Using House Price Data

Tom Kauko

Keywords: *House prices, Budapest, The self-organizing map, Urban sustainability*

Real estate is today seen through the widespread sustainability discourse where buildings and land use occupies a core position. Land and buildings are also subject to sustainability evaluations along environmental, social, cultural and economic dimensions. In this paper cross-sectional data on house prices and sales volumes from Budapest, Hungary, for the period 2000-09 are analysed using time-windows generated by the self-organizing map (SOM) algorithms. In particular, upper-market cases are related to sustainable innovations insofar as such exist, which is examined using interviews and field inspection. The results however suggest that such features are largely absent in the period of data collection, although future markets are likely to be different in this respect.

Technological Development of Energy-Efficient Construction and Effect on Project Profitability

Agnieszka (Agnes) Zalejska-Jonsson, Hans Lind

Keywords: *Energy-efficiency, Innovation, Technological change, Green buildings, Cost*

Energy-efficiency has received much attention from policy makers and the issue of reducing energy consumption in buildings has faced a true challenge in balancing incitements, restrictions and cost-effectiveness for required changes. The literature shows that technological change and technology diffusion is an important factor in overcoming cost barriers. On the other hand, before adaptation process begins the new technology must show possibility for profit and return on costs. This paper aims at discussing technological change in building construction in context of diffusion and adaptation of very low-energy technological solutions. We are tracing technological development in three aspects: wall construction, windows energy-efficiency improvement and mechanical ventilation, solutions used preliminary in construction of passive houses. We examine how those technological changes influenced cost-effectiveness and profitability of low-energy building projects. The investigation is approached by analysis of market and policy incentives and the role those factors had on diffusion of new energy-efficient technologies.

Incorporating GBFIs into Commercial Property Valuation

Saul Nurick, Karen Le Jeune, Emma Dawber, Ryan Flowers, Jennifer Wilkinson

Keywords: *Green Building Council of South Africa (GBCSA), Green building features and initiatives (GBFIs), Green building valuation, South African valuers*

The widespread international acceptance of green buildings has led to rapid awareness of green building features and initiatives (GBFIs) in the South African property and construction industry, however among valuers it seems the awareness is still in its infancy. It is essential to be able to establish the effects of these GBFIs on the market value of commercial property.

Three research methods were implemented in order to gather data; semi-structured interviews were conducted with valuers of varying degrees of experience in Cape Town, on-line surveys were completed by a sample of South African valuers, and a valuation simulation was conducted to determine the quantitative impact of GBFIs.

The findings present evidence that even though South African valuers have limited knowledge of green buildings, they recognise the importance of incorporating the GBFIs in the valuation process. Energy efficiency was highlighted as the most important GBFI to take into account in South Africa, due to the volatility associated with increasing energy costs. The inclusion of GBFIs in valuations in practice was seen to be hindered by the lack of sufficient transactional data in the market. Furthermore, valuers experienced difficulty in quantifying and justifying the impact of GBFIs on the value of commercial green property.

Rebuilding Business Premises Versus Firm Relocation

Erik Louw

Keywords: *Rebuilding, Relocation, Commercial real estate, Expansion on site*

One way to make land use more sustainable is to re-use vacant buildings. These building can be renovated and used again or converted to another use type. It would even more sustainable if these buildings never became vacant, which means that firms stay longer in their building. The literature suggest that the main reason why firms relocate is to expand rather than rationalise their operations. The same literature also suggest that firms hardly relocate because of characteristics of their location but foremost due to factors related to their premises. The hypothesis is therefor that renovation and/or expansion of buildings on site (together called rebuilding) may prevent firms from moving to new greenfield sites.

To investigate this hypothesis we use a survey among 17,000 firms in two regions in het Netherlands which was conducted by the Chamber of Commerce. The response rate was 31%. The results of the survey show that 7% of the firm had plans to renovate their premises, whereas 9% had plans to relocate.

The analysis of the survey confirms previous research on factors influencing relocations, but also show that firm with can expand their premises on site, more often have rebuilding plans than firms which cannot expand on site. On the other hand firms with relocation plans have significantly less possibilities to expand on site. About half of the firms with rebuilding plans prefer rebuilding over relocation because it is cheaper or quicker to realise than a relocation.

Overall the results of the analysis show that rebuilding can be seen as an alternative to relocation if certain conditions are met. Two important planning related conditions are the physical possibilities to expand on site and land use plans that allow rebuilding. Another conditions is the type of industry; retail and manufacturing firms are more inclined to rebuild their premises than firms in other sectors.

Energy Labels in the Housing Market: Matching Predictions and Realizations

Erdal Aydin, Dirk Brounen, Nils Kok

Keywords: *Residential energy, Energy labels, Housing market, Rebound effect, Residential heating*

Energy labels have proven to be an effective means for nudging households to make sustainable choices. The label information regarding future energy use has inspired consumers around the world to opt for more energy efficient cars to commute to work and to select more efficient appliances at home. But regarding the home itself, energy labels have been less successful, or so it seems. In order to have an effect on consumer choice, energy labels need to meet three conditions, they need to be available, understandable, and reliable. In this paper, we examine the extent to which these criteria are met using a unique, detailed microeconomic dataset that contains information regarding the home, utility bills and energy labels for 779,383 addresses in the Dutch housing market. Since 2008, energy labels are available in this market, since 2010 these energy labels are understandable to consumers, and our results show that these labels are 81% reliable when compared to subsequent energy bills.

The Green Arbitrage Pricing Game

Juerg Bernet, Maarten Vermeulen

Keywords: *Investment, Property, Green, Strategy, Game*

The 'Green Arbitrage Pricing Game' is a behavioral approach to the dynamics of property pricing under changing environmental regulation, social responsibility and economic expectations. Investors, asset managers, developers and occupiers of buildings find themselves in a situation, where each has a dominant strategy with the negative side effect to increase greenhouse gas emissions. But the resulting economic outcome for all is worse than using their dominated strategies to incorporate environmental externalities.

A real world business case is simulating this dilemma based on the economic and social concepts of game theory. The laboratory setting in the structure of an extensive collective-action game with imperfect information is delivering experimental evidence of practical management solutions. In their roles of property investors and fund managers the players learn to understand the dynamics of the green property dilemma and to make viable strategic choices for resolving it. The game is facilitated by the strategy training toolkit 'RealInvestor' developed at the EURO Institute of Real Estate Management (www.realinvestor.net). The real world business case tackles institutional investments in the Australian office market. The simulation data is based on current input from the Green Building Council of Australia.

First sets of the 'Green Arbitrage Pricing Game' were played at University of Reading, Henley Business School, School of Real Estate & Planning (United Kingdom), at Danube University Krems, Department of Building and Environment, Center of Real Estate Economics (Austria), and at Bauhaus University Weimar, Faculty of Civil Engineering (Germany). The outcome of these game sets has delivered workable strategic solutions to responsible real estate investment management.

Vertical Mixed Use Communities: A Solution to Urban Sustainability? Review, Audit and Developer Perspectives

Simon Huston, Derlie Mateo-Babiano

Keywords: *Vertical mixed use communities, Sustainability, Urban regeneration, Densification, Performance measures*

Purpose - We explore the growth patterns and development trends of vertical mixed use (VMU) developments in a variety of cities. VMUs are defined as structures with two or more revenue producing uses or land use activities on a single site. One view is that sustainable city development requires densification via VMU construction on brown field sites (within the existing inner city footprint).

Design/methodology/approach - After a systematic review of the notion of VMU buildings, we conduct a macro- analytical review of across an, albeit limited, selection of European and Asian cities (Helsinki and Manila). In the micro-urban phase, we investigate VMUs within the main study location (Brisbane CBD). Specifically, we audit VMUs number, location and relative financial and non-financial performance. To evaluate VMU planning merits in the light of local codes and regulations, we adapt and apply Hoppenbrouwer and Louw's model.

Findings - We found urban sustainability a complex notion without simplistic solutions. Certainly, VMU is not a 'silver bullet'. The mixed-use notion though has gained ground in some urban regeneration circles. Developers concurred that VMU communities now appeal to an emerging demographic who values accessibility and entertainment. However, developers articulated some concerns about escalating VMU construction cost caused by

- Design, staging and funding complexity, and;
- Unfavourable regulatory and development controls

Research limitations/implications - Further operation research needed on VMU buildings in range of cities.

Practical implications - Need for collaboration between developers and planners to facilitate elegant and inexpensive VMU design for streamlined planning.

Social implications - If poorly conceptualised and regulated, VMU rollout will detract from not enhance sustainability and reduce not increase housing affordability.

Originality/value - The project is the first systematic study of VMU in a growing Sunbelt metropolis.

Sustainable Retrofit in CBD: Contemporary Practices in Melbourne

Sara Wilkinson

Keywords: *Sustainable retrofit, Building adaptation, Refurbishment, Offices*

Retrofit and adaptation of the existing building stock is an essential factor in man-kinds attempts to mitigate the effects of climate change and global warming. Pointedly most of the global stock was constructed with no consideration of sustainability. In Australia environmental sustainability for commercial buildings was legislated in the Building Code of Australia in 2006, with minimum standards for energy efficiency applied to new build and some retrofit projects. The City of Melbourne launched the 1200 Buildings Program in 2008 as a key strategy to deliver carbon neutrality by 2020 after Arup (2008) concluded that CBD 1200 commercial office retrofits, some two thirds of the total stock, would deliver a 38% reduction in greenhouse gas emissions.

This research examined what has been undertaken in respect of the commercial retrofits undertaken as part of the 1200 Buildings Program. This study had two aims which were firstly; to gain a deeper understanding of the improvements made to existing office buildings in the 1200 Buildings Program and secondly, to undertake a comparison of current practice to identify similarities and differences in approach to retrofit within the 1200 Buildings Program. The case studies showed the sustainability measures undertaken were largely focussed on building services and energy efficiency. There was less work undertaken to address water economy measures, to the building fabric and little work, which addressed social sustainability aspects.

Life Cycle Costs of Dutch School Buildings

Peter de Jong, Monique Arkesteijn

Keywords: *Life cycle costs, School buildings, Sustainability, Performance*

There is a gap between investment and maintenance of public school buildings in the Netherlands. This gap is caused by separated responsibility for the financing of the accommodation for the primary and secondary schools. Municipalities finance the construction of these schools and school boards are responsible for the operation costs of the school building. According to In 't Veld (2010) this split-up results in higher costs during the lifetime.

The purpose of this article is to show the integral approach captured in life cycle cost (LCC) in order to achieve to a better balanced system. The research conducted nine case studies of secondary school buildings, which are newly build between 2005 and 2008. The schools were examined in terms of buildings characteristics, building costs and operations costs. With the aid of the Dutch sustainability measurement tool 'GPR-Gebouw' the sustainability score of the schools is determined. For the construction sector in the Netherlands can be concluded that it is generally acknowledged that sustainability is more expensive, however, studies indicate this is not unequivocally. An elaborated research of Davis Langdon reveals within a given spread of building costs an equal spread of certified buildings (Morris & Matthiessen, 2007). Our study found at least no clear relationship that sustainable schools have higher investment needs and shows a positive effect of sustainable measurements on the life cycle costs of secondary schools.

There is an on-going discussion on ratios in this matter. Evans (1998) stated that there is a ratio of 1:5:200 between the construction costs, operating expenses and corporate operating costs. This ratio has already been further defined and reduced by Hughes (2004) and Ive (2007). The scenario analysis of our study shows that the operating costs still have a larger share in the life cycle costs than the investment costs. The difference between the investment and operating according to this study is by far not as impressive as stated by Evans, but still worthwhile to keep focus on LCC in policies for school development.

Do 'Green' Residential Properties Exist in Wroclaw's County?

Malgorzata G. Sliczna

Keywords: *Green building, Residential real estate, Sustainable development, Real estate value, Environmentally friendly solutions*

The policy of European Union is focused mostly on green growth, therefore there is an increasing number of regulations concerning sustainable development. The situation is the same in the matter of life cycle of buildings, where pressure is put on eco-friendly solutions. The purpose of the paper is to describe the green residential real estate market in Wroclaw's county and to characterize its main attributes.

The paper closely examines put to use, 'green' residential properties. The research studies statistical and real estate data from government agencies, such as District Inspector of Building Control for Wroclaw's county and Cadastre office of Wroclaw's county. The information gathered allows marking out energy efficient residential buildings and determining their value.

The research shows that 'green' residential buildings have just a small share in the real estate market of new buildings. The result of the study indicates that just a few of those buildings were sold by the end of the year 2012. Furthermore almost all of 'green' houses were constructed by their owners. An interest in energy efficiency can be the result of the increased willingness to reduce the operating costs of the property. By analyzing the information gathered, the most popular eco-friendly solutions used in buildings (such as: solar panels, heat pumps, biomass boilers) were identified. The research estimates the actual value of 'green' buildings. One of the research limitations was the quality of Energy Performance Certificates (EPC). Even if the EPC was done according to the national approach it may give misleading information about energy efficiency of the building. In the future a further research on the effectiveness and correctness of EPC is necessary.

The paper is unique in the field of real estate in Poland as it concentrates on the residential real estate in regards to sustainable development. The results of the research can be useful to valuers and investors since it gives genuine data on the green residential buildings market in Wroclaw's county.

The Asymmetric Housing Wealth Effect on Childbirth

Shinichiro Iwata, Michio Naoi

Keywords: *Childbirth, Housing price, Wealth, Home ownership, Reference-dependent preferences, Loss aversion*

The existing literature has shown that increases in housing wealth, driven by unexpected house price shocks, have a positive effect on birth rates of homeowners. According the canonical model, a decrease in housing wealth has a symmetric negative impact on fertility behavior of households. That is, housing gains and losses of the same size should have identical quantitative effects (in an absolute sense) on fertility. In comparison, the theory of reference-dependent preferences suggests that people care more about housing losses than about equivalent gains, leading to an asymmetric housing wealth effect on a fertility decision. In our model, a utility from having a baby is weighted by a utility from house price where reference levels based on the house price at the time of purchase. The theoretical model suggests that the probability of giving birth is kinked at a reference housing wealth level and the wealth effects are discontinuously larger below the kink than above the kink. This theoretical prediction is tested using the recent survey data of Japanese households (Keio Household Panel Survey, KHPS). The KHPS is a nationally-representative, large-scale panel data started in 2004 with initial sample of approximately 4,000 households. Our empirical results suggest that, consistent with the theoretical prediction, homeowners' fertility responses are substantially larger when their housing wealth is below its reference level than when housing wealth is above reference level. Specifically, while estimated marginal effect is significantly positive when housing wealth is below its reference level, it is still positive but insignificant when housing wealth is above reference level. Furthermore, we also find that asymmetric wealth effects are robust to a number of alternative specifications, including controlling for possible measurement errors and unobserved heterogeneity of households.

Assessing Policy Outcomes through an Evaluation of House Price, Time on Market and the Relationship between Advertised and Transaction Price

Peter Rossini, Valerie Kupke

Keywords: *First home buyer, Subsidy, Time on market, Transaction price*

In the past decade governments in Australia, both state and federal, have provided assistance to first home buyers in an effort to improve the availability and the affordability of housing as well as to stimulate interest in the housing market. Subsidies and tax breaks have been offered which are anticipated to encourage borrowing and to increase market activity. This study considers the effectiveness of such policies through an analysis of price, the time on market of a property before sale and the relationship between advertised price and actual transaction price for periods associated with the introduction of such subsidies. The study uses both descriptive and statistical analysis to quantify the effectiveness of the policy in terms of improving housing affordability and increasing market activity.

Households' Willingness to Pay and Matching in Regulated Housing Markets

Jos N. van Ommeren, Arno van der Vlist

Keywords: *Nonmarket allocation mechanism, Public housing, Queueing time model, Choice-based allocation, Rent control*

We introduce a methodology to estimate the households' marginal willingness to pay for housing characteristics in regulated housing markets, where houses and households are matched using queueing time. For the Amsterdam Metropolitan area, the households' marginal willingness to pay for the market value of public housing, so the value when sold in the private market, is estimated. We find that the annual marginal willingness to pay for the market value is close to the annual capitalisation rate applicable to investments in housing. We provide evidence of random, and therefore inefficient, matching between households and public houses with long queueing times.

Finnish Trends in Housing Services

Heidi Rasila, Sami Kärnä

Keywords: *Housing, Services, Tenants, Business development*

In Finnish context the housing and related services are well established industries where both the tenants and the service providers are accustomed to certain ways of behaving and being part of the service processes. There are, however, weak signals suggesting that the housing related services are going to change a lot in the near future. In urban development it is important to know what are the major changes that are likely to appear. This paper outlines some of these changes in Finnish context.

The most potential changes are first outlined with 2 workshops with the Finnish academic experts on the issue. The material from the workshops is augmented with a small-scale survey. The 78 respondents in the survey were professionals in housing services. In this way it was possible to combine both academic and practical views.

The results suggest that the building information modeling (BIM) will affect the future housing markets a lot. Also the ways the services are provided are changing. One possible change could be appearance of a new actor in the service business - namely a service mediator - a mediator who seek for optimized services for customers. Also new services might be essential in order to reach the societal goals of sustainability.

The practitioners have many times so much to do that they do not have time to stop to think about the future. This paper allows the practitioner to have a short glimpse to the possible future directions of their businesses. From academic perspective this article adds understanding of housing and input into researching the service design in the field of housing services.

Macroeconomic Change, Housing Affordability and Public Policies: The Case of Turkey

Yener Coskun, Craig Watkins

Keywords: *Housing affordability, Income distribution, Housing finance, Price to income ratio, Housing*

Notions of housing affordability concept are at the heart of debates about access to home ownership, housing finance and social policies globally. The existing housing affordability literature mostly focuses mainly on developed countries. Housing affordability problem in emerging countries are starting to attract increasing attention. This paper seeks to contribute to this emergent literature by analysing housing affordability in Turkey. The paper explores market trends, the nature of the affordability problem and makes some tentative policy suggestions. The paper develops a theoretically informed model to assess affordability using data from 2005 to 2012 on house price to income ratios, the housing affordability index of Turkey (HAIT), and a variety of social and economic indicators. The Turkish results are contrasted with similar measures for other countries.

A Countrywide House Price Index for 152 Years

Jens Lunde, Maria Lundbæk Laursen, Anders Holding Madsen

Keywords: *Housing price inflation, House price index, Housing price methods, Housing market cycles, Housing demand and supply*

The presented house price index for Denmark from 1860 to 2012 has been constructed by analysing already published data from Statistics Denmark. Houses are heterogeneous assets, and nowadays they differ in many aspects from houses in 1860. Due to improved building quality, urbanization and the revolution of the transportation, they are now situated in much larger cities and fewer houses are found in the countryside. Furthermore the houses are more and better equipped. Obviously, conceptual and practical difficulties exist in separating the value and the price of the houses when the development in house prices is depicted. The Danish house price index covering all the 152 years is in reality a simple average sale price index for houses. From 1920 on it was possible to construct another and a “pure” house price index, based on the Sales Price Appraisal Ratio (SPAR) method. Several challenges for creating the house price index arose, especially in converting the previous registered house prices in the statistics into current market prices.

In real terms, the average sale price index increased more than the SPAR index for the years where the two indices were compared, and the difference express the qualitative improvement of the sold house through the years. The SPAR index contains long house price cycles, and the unique recent bubble is observed. The development in real prices holds no arguments for the SPAR index will increase in the long run. Already published long house price indices exist for Herengracht (the Netherlands), Norway, USA, France, and recently also Australia. Until now, the here presented house price index for Denmark is the longest countrywide house price index ever been published, based on official data, and qualitatively probably the best long house price index.

Individual Homebuyer's Loan Selection under the Differential Risk of Mortgage Products

Che-Chun Lin

Keywords: *Home mortgages, Default risk, Mortgage products, Loan selection, Exotic mortgages*

Because homeownership represents the largest investment many individuals make, and the risks of competing mortgage products are not well understood, we develop a framework to quantify credit risks of mortgage products. We use simulations to examine the default rates of five types of mortgage products under both a normal and stressed economy to examine risk differences among the competing mortgage products. Results suggest that significant default risk differences exist between mortgage products. As a result, in addition to considering characteristics such as differential interest rates, points and fees, and the term of a mortgage, homebuyers should consider the risk differential of competing mortgage products before selecting a mortgage.

Behavioural Biases on Residential House Purchase Decisions: A Multi-Criteria Decision-Making Approach

Clare Branigan, Cathal Brugha

Keywords: *Behavioural biases, Residential real estate, Multi-criteria decision making, Framing bias, Empathy gap*

In this study, we examine if behavioural biases, such as framing effects, escalation of commitment, and overconfidence are present when residential property purchasers are choosing between alternative properties. To accomplish same, we use a Multi-Criteria Decision-Making (MCDM) approach to examine the behaviour of property purchasers in Dublin during the property boom of 2005.

The study was designed using a case study approach and the participants used a Multi-Criteria Decision-Making analysis tool to aid in their selection between alternative properties. The decision tool that was used is Direct-Interactive: i.e., the Decision-Maker gives scores and weights directly and is able to adjust them during the process. It also uses Structured-Criteria, i.e. it tracks elements of the decision to specific disaggregated criteria of the decision-maker.

This research finds that using a decision tool provides better decisions as was expected from the method, however, a subset of property buyers resisted applying the tool to make non-rational choices. This indicates how strong behavioural biases can be and how influencing their affect is, even when making large monetary decisions.

In conclusion, when a decision-making tool is introduced to enable property purchasers to improve their decision-making capability, a subset of property buyers may resist applying the tool to let their behavioural biases potentially override rational decision-making.

Spatial spillover effects of housing prices: An empirical study of Hong Kong

Daniel Yet Fhang Lo

Keywords: *Spatial spillover, Housing prices, Hedonic modeling, Spatial autocorrelation, Hong Kong*

While spillover effects of prices in general, such as those of stock market, have been studied intensively in mainstream economic literature, the same can not be said for housing prices. In this paper, we examine the spatial interactions of different property classes with respect to their prices. In particular, we hypothesize that high (low) housing prices will spatially “flow” to low (high) housing prices. Following Can (1992), several spatiotemporal autoregressive hedonic pricing models that incorporate (i) neighborhood effects, (ii) adjacency effects, and (iii) the process of comparable sales are constructed to empirically test the above hypothesis. With a sample of over 100,000 market-wide transaction data over a period of 10 years of Hong Kong, we find substantial evidence that spatial spillover effects exist among housing prices. More specifically, spatial spillover effects are on average three to five times more pronounced among same-class properties than among different classes. However, the effects are severely depressed once price volatility is taken into consideration. Our findings are of direct importance to the practice of valuation as well as theoretically relevant to the on-going debate over the validity of market segmentation hypothesis.

Veblen Effect in the United States Housing Market: Spatial and Temporal Variation

Kwan Ok Lee, Masaki Mori

Keywords: *Veblen effect, Housing market, Luxury housing, Price variation, Housing premium*

The finance literature suggests that the Veblen effect (i.e. luxury consumption behavior) could be translated into consumers' behavior with other goods and assets. This study is the first to examine the role that the Veblen effect plays in housing market dynamics, with a focus on spatial and temporal variation in this role. It uses a unique dataset that matches the consumers' appetite for non-housing luxury goods from Google Insights for Search to the premium that they pay for high-end houses in US Metropolitan Statistical Areas (MSAs) during 2004-2011. The results demonstrate that controlling for other MSA demographic and economic characteristics, the Veblen effect has a significant, positive relationship with a premium paid in the housing market. This suggests that high-end houses may have been purchased for the enjoyment of signaling wealth and status and this housing consumption behavior may have partly driven the large deviation of high-end house prices from the median. Housing consumption tends to be motivated more by the Veblen effect in the areas where people pay a steady, higher premium than in other areas with a more volatile, lower premium. In fact, the higher Veblen effect substantially contributes to maintaining the higher level of the premium in these areas even during the bust period.

Conditions of Mortgage Market Development in Turkey: A Critical Empirical Review

Yener Coskun

Keywords: *Mortgage, Turkey, Housing finance, Housing markets, Housing*

The objective of the paper is to define conditions of mortgage market development in Turkey by presenting the findings of dynamic causal relationships between housing loans and selected socio/macro-economic indicators for the term 2005/01-2011/09. By using monthly time series, we employ granger causality tests, co-integration analysis and vector error correction model (VECM) in the research. The paper specifically aims to analyze the impacts of financial stability, financial risks, monetary policy, households' income/net wealth and housing demand to mortgage credits. We conclude based on the co-integration analysis that housing credit, interest rates, occupancy permits, real GDP per person and monetary aggregate (M2) have long term relationship with housing credits in Turkey. In the paper, we argue that the outcome has important policy implications for both Turkey and emerging economies. In this context, we underline that mortgage market policies in emerging economies should have a balanced approach between market economy and social needs.

Potential of Housing Private Finance Initiative Implementation in Polish Circumstances

Magdalena Zaleczna

Keywords: *Housing, Privatisation, PFI, UK, Poland*

Housing private finance initiative (PFI) schemes are used for cooperation of local authorities with private partners to build, improve, manage and maintain social housing stock in UK. They can be seen as competitive solution for privatization of public stock. These schemes should enable a transfer of risk from public sector to the private sector and give good value for money. After some years of British experience with housing PFI there is possible to evaluate results and analyse where there are some bottlenecks. The author would like to outline British experience and consider the possibility of transferring housing PFI into Polish conditions. In Poland the picture of housing structure is very patchy: after waves of privatization of public housing stock the current housing structure is very blurry, mostly in big cities. Very high bonuses for tenants – buyers created the mixture of owners: local governments and individuals (due to different levels of income, some of them have problems with housing maintenance). Their aims and level of interest and understanding of housing technical and functional problems are very various. The very important housing supply side actor in socialist time - housing cooperatives are mostly inactive, focused only on survival, currently. Thinking about housing as a very important factor for national economy and social life, there is an important question of new solutions implementation in these circumstances, remembering also about great needs in area of regeneration confronted with cuts in public spending.

The Effect of Ground Leases on House Prices in Helsinki

Tanja Tyvima, Velma Zahirovic-Herbert, Karen Gibler

Keywords: *Housing markets, House prices, Marketing duration, Ground lease*

Houses are expensive illiquid long-lived assets traded in an imperfect market. The imperfect nature of the market is a result of several factors, including the heterogeneous nature of the houses, asymmetric information among buyers and sellers, search costs, and transaction costs. These aspects of housing markets make the selling transaction a process rather than an event and, therefore, we observe two outcomes of this process: selling price and liquidity. There is evidence that the degree of liquidity of housing assets changes over time. That is, adjustments in the housing market seem to take place not only through prices and quantities but also through the degree of liquidity; i.e., how easy or difficult it is to sell a property as of a specific date. While much analysis has been done on how various attributes influence the selling price of a house, less work has been done on the factors influencing liquidity. This paper uses quantile regression for duration analysis allowing for a flexible specification of the functional relationship and of the error distribution. Censored quantile regression addresses the issue of right censoring of the response variable that is common in duration analysis. We apply this method to a large sample of housing transactions in Finland as well as to different subgroups of housing sales and sales during different housing market cycles. This way we examine how the effect of attributes on marketing duration may differ along the distribution of marketing times.

Survey on Decision Criteria of Buyers of Residential Buildings

Marisa Röder-Sorge

Keywords: *Buying decision, Buyer behavior, Residential building, Survey, Decision criteria*

Although there are several speculations on factors that might be important for the buying decision of private customers when buying a residential building, purchasers of privately owned buildings have not been asked about those factors so far.

Therefore, a survey in the rural parts of Hesse (Germany) has been started in which every purchaser of a residential building gets a questionnaire. They are asked which pieces of information on their property, e.g. reference prices, building license, copy of an entry in the cadastral register etc., they had when buying their piece of real estate. Furthermore, there are questions on the impact of several factors on their buying decision like e.g. purchasing price, connection to local trains and buses, living close to schools and shops.

The intention of the study is to figure out which information buyers have about their future land property and which factors are important for their buying decision.

Moreover, statistical methods will be used to check whether there is a relationship between the known pieces of information or the important factors for the buying decision and the age of the purchasers, their educational background or the size of the district where the property belongs to.

Finally, the results will be compared to the findings of other studies.

Development of Stakeholder Integration Strategies for Housing Companies

Stephanie Heitel, Annette Kämpf-Dern, Andreas Pfnür

Keywords: *Stakeholder analysis, Stakeholder engagement, Housing, Balancing of interests, Corporate social responsibility*

Managers of public housing companies are confronted with multiple demands, like e.g. providing affordable housing, improving energy-efficiency of their building stock and distributing profit to the municipality. Strategies to balance these different interests are required for optimizing performance.

Integrated Corporate Social Responsibility (CSR) strategies build on stakeholder engagement to ensure that economic, social and environmental criteria from different perspectives are included in decision-making. Several studies indicate that stakeholder management improves performance. However, stakeholder integration efforts can be costly and time-consuming. Thus, managers need to know how to integrate stakeholders in an efficient and effective way. The purpose of this research is to develop stakeholder integration strategies for housing companies depending on stakeholder types and context.

We use a single case study design and select a German municipal housing company which has a pioneering status in CSR activities. Qualitative and quantitative methods are applied including stakeholder interviews, a stakeholder survey and document analyses. The environment of the housing company is described including stakeholder types, issues, and heterogeneity of demands. By combining the gained insights, we develop hypotheses on stakeholder typologies and on strategies for their suitable integration.

Due to the single case design, further empirical testing of the developed hypotheses is needed before our findings can be generalized. Managers of housing companies find ideas on how to integrate specific stakeholder types adequately. By integrating multiple stakeholder perspectives in decision-making, companies might develop more sustainable solutions and increase public value creation.

Despite extensive research on stakeholder management, there is still a lack of practical approaches for deciding on stakeholder integration strategies. Our study contributes to further close this gap by developing strategies which rely on structured stakeholder analyses.

Differential Price Movements between Houses and Apartments in Australia

Siu Kei Wong, Hao Wu

Keywords: *House price, Apartment, Australia, Real option*

Despite the global financial crises, Australia has experienced continuous high-speed growth in housing prices in recent years. Its housing market can be separated into two major segments: single-detached houses and medium-density apartments. This study seeks to examine the price trends of these two segments and explain their differential movements. Based on the Real Estate Institute Victoria (REIV) member agencies survey since the early 1990s, we found that house prices grew faster than apartment prices in Melbourne. In particular, the price gap between houses and apartments was much larger in central Melbourne than in the outer areas. To explain this, we borrow Clapp et al.'s (2012) real option idea and postulate that the gap reflects the redevelopment potential of the houses. We verify this by testing if the gap is smaller for suburbs with stronger redevelopment restrictions (e.g. due to zoning constraints). As far as applicable, other factors such as socio-economic characteristics are also considered. While this study contributes to a better understanding of differential housing price movements, we are aware that the test is delimited by the use of median price indices, which may not hold quality constant. Further study based on constant-quality prices, such as hedonic or repeat-sales indices, are needed.

The Sources of House Price Change: Identifying Liquidity Shocks to the Housing Market

Paloma Taltavull de La Paz, Michael White

Keywords: *Housing, Liquidity, Price Shocks, VECM*

In a previous paper (Taltavull and White, 2012) we analysed the role of money supply, migration and mortgage finance in house price evolution. Using a VECM framework we examined these variables together with income, inflation, and interest rates for both Spain and the UK. This followed on from research by other authors including Muellbauer (2007), Meen and Andrew (2003), and Mishkin (1995). The results indicated an important role for income, mortgages and migration in UK house price movements, more so than in Spain. In this paper we build upon our previous work and focus on the channels through which liquidity shocks can affect house prices. Lastrapes (2002) argues that money supply affects real house prices. Greiber and Setzer (2007) find that liquidity is important for new supply and hence house prices identifying money demand, asset price and credit channels. In the money demand channel, three different effects are present, wealth, substitution and transactions effects. This permits us to test if changes in house prices lead to changes in money supply. In the asset price channel we test if changes in money supply cause house price change, and in the credit channel, higher housing collateral can increase loan amounts. In this paper we test different channels to identify which is more or less important and whether this varies across countries thus identifying the impact that the housing market has on the macroeconomy and from which source this is derived.

What Causes the Differential Movements of Cap Rates in the High and Low End Housing Markets?

Jiancong Liang, Siu Kei Wong, Kwong Wing Chau

Keywords: *CAP rate, Hong Kong, Risk premium, Differential movements*

The capitalization rate used in real estate literature is the ratio of net operating income to property value. This paper has investigated the capitalization rate movements in Hong Kong from 1987 to 2012. In Hong Kong, capitalization rates for residential and commercial properties were closely intertwined during 1984-1997. However, after 1997, diverging patterns were observed: commercial properties' cap rates became higher than residential properties'; cap rates for lower-end properties increased relative to higher-end properties. What are the factors that determine the cap rates in Hong Kong? What are the causes that generate such gap between different properties types' cap rates in Hong Kong? Based on the basic Gordon model, WACC and CAPM, the study seeks to explain the cap rate movements in Hong Kong by modelling it as a function of the risk-free rate, risk premium, and expected long-run rental growth. Our preliminary results show that the cost of debt, stock market performance, unemployment, CPI inflation, and price growth are significant determinants of cap rates. At the same time, the LIBOR/HIBOR ratio and price growth are significant determinants of cap rate gaps. Additionally, the cap rates would also adjust to its lagged term due to autocorrelation.

Creating Public Value through Social Housing Programs. Some Insights from Italian Local Governments

Carlo Vermiglio

Keywords: *Public value, Social housing, Urban development, Local Governments, Public private partnership*

This paper analyses the contribution that public real estate management (from here PREM), can provide to the enhancement of LGs performance and to the creation of public value for the community.

More in details, the research will focus on a specific segment of public property portfolio, the so called “social housing”, for addressing the main issues arising in the management of this segment of assets; moreover, the research wants to highlight the connection between public property management and sustainability of an LG.

The paper is structured as follows: the first section describes the scope of the research; the second section provides the theoretical framework in which the research fits; the third section analyses actual issues, criticisms and trends perceived in the field of “social housing”.

The renewed interest on this topic arises the claim for a new welfare system that involves both public and private sector. More in details, a private support to the implementation and improvement of public strategies is required in order to fully meet citizens' expectations and to conceive social value.

The last section presents a case study analysis of some “social housing programs” launched within Italian Local Governments. The analysis confirms the importance that property management strategies assume for LGs.

Furthermore, it emerges that social housing programs - structured to provide/ enhance the empowerment of social conditions and sustainability of a community - are “key factors”.

Their implementation requires a greater effort from public managers, whose mission and vision has to be orientated towards the creation and consolidation of social value and urban development.

A Hedonic Model of House Prices in the Greek Islands

Dimitra Kavarnou, Anupam Nanda, Sotiris Tsolacos

Keywords: *House prices, Hospital care, Transportation, Higher education, Hedonic model*

This paper examines the impact of local public amenities on house prices in the islands of Greece. By taking the Greek islands as the case study, which has not been studied in detail on this topic, we analyse how the presence of a public hospital, an airport, a higher educational institution along with other amenities affect the housing market (primary and second houses). The housing market attributes of the Greek islands are analysed e.g. the housing needs and consumption behaviour, determinants of the demand and supply, the significance of hospital care for the residents, and the need for fast transportation. With the use of hedonic modelling approach and a large dataset of residential properties in the islands of Greece, we try to ascertain the effects of these amenities on the house prices. The model also controls for several structural and locational characteristics of the properties as well as economic and demographic attributes of the islands. The econometric estimation attempts to address common sources of bias with such modelling framework i.e. unobserved heterogeneity, omitted variable bias, non-linear effects. Models are also tested for robustness across several specifications and samples.

Mortgage bonds as a source of financing housing real estate in Poland

Stanislaw Belniak

Keywords: *Mortgage, Bonds, Financing, Housing, Market*

The relatively small equity of mortgage banks that has been created in Poland for the past twelve years does not allow refinancing of housing real estate credits with the use of mortgage bonds. Nonetheless, there is more and more imminent threat of liquidity problems amongst the universal banks that have granted mortgage loans for financing housing real estate. Thus, it is expected to see the emergence of a system of issuing bonds to improve financial standing of those banks. The process of development of mortgage banking raising funds on capital markets through the issue of bonds has been already commenced in Poland. The paper presents the essence and the legal groundwork for that process, as well as the volume and structure of bonds issue on the background of refinancing mortgage loans with bonds in the selected countries of the European Union. The paper includes a discussion of security principles, and presents the main issuers of bonds. Due to the attractiveness of that financial instrument the discussion includes a presentation of the bond market in Poland, and its main investors. In conclusion, the author presents prerequisites to encouraging and accelerating that type of financing which will also increase credibility of that security on the financial market.

Explaining Changes in Transaction Volumes in Hungarian Settlements During the Crisis

Áron Horvath, Aliz McLean

Keywords: *Transaction volume, Settlement size, Crisis, Optimal stopping, Hungary*

The 2008 economic crisis can be analysed as a demand-side shock to the Hungarian residential real estate market. Post-crisis adjustment in prices and transaction volumes is different in smaller settlements than in larger ones. According to income data, the crisis hit smaller settlements harder. In a static framework, this would imply that transaction volumes decreased more (relatively) in smaller settlements than in larger ones. A first glance at empirical data in Hungary, however, shows the opposite: there appears to be a smaller relative decrease in transaction volumes in smaller settlements. We measure settlement size by the number of properties in the settlement in 2009, and the change in transaction volume as the number of transactions "before" and "after" the crisis, divided by settlement size (that is, the change in relative transaction volume). The unexpected negative relationship between size and the change in volume is robust to the inclusion of controls (eg. for NUTS2 region, or the distance from the nearest larger town).

A more dynamic approach is warranted to address this puzzle. A possible explanation is the following. The fact that transaction volumes fall after a crisis means that sellers will receive fewer offers over a given space of time. In smaller settlements, offers are generally less frequent than in larger settlements. Therefore, in a post-crisis smaller settlement, if an offer does come along, sellers will be likely to accept it even if it is low – since they anticipate that this offer will be the only one they receive for some time. Sellers in larger settlements, however, may still find it worth their while to hold out and wait for a better offer. This means that while post-crisis adjustment in smaller settlements happens less in volume than in price, the converse is true of larger settlements.

The above argument fits into an optimal stopping framework, in which sellers receive differing offers at various intervals (each offer only being available for a limited amount of time), and must decide which offer to accept. We therefore address our puzzle using an optimal stopping model.

Why Have Urban Villages Shorter Life Expectancies? Observations in Three Chinese Cities and Economic Explanations

Zhigang Albert Nie, Kwok Chun Wong

Keywords: *Urban villages, Land economics, Urban renewal, Building regulation and control, Property rights*

It has been identified in Nie and Wong (2012) that substantial rental value losses can be induced by excessive land exploitation in urban villages in the mainland of China. It has also been suggested that incomplete and unclearly delineated property rights, transaction cost, and consequently the absence of effective building regulations have played an important role leading to such tragic results. Through a comparison of 96 pairs of cases collected from three major Chinese cities (Shenzhen, Guangzhou, and Xi'an), it has been found that compare to non-village estates, an average of 72% of urban villages have been overbuilt, which leads to a problem of 'more construction but less rental values'. The overdevelopment problem can be viewed as, according to institution theories, a production change (a distortion of resource combination), given the constraint of defective institutional environment. It is natural then a different timing of contract change may follow, since certain conditions for renewal projects can be met differently.

Throughout the lifetime of a building community, natural rent dissipation happens due to outdated design, changing market condition, or simply building aging. As a result, a building community has an economic life (a type of economic selection), which may be shorter than its physical life. An empirical test conducted in this study on 16 demolished non-village estates in Shenzhen, 14 in Guangzhou, and 10 in Xi'an in the recent years shows that the average economic lifetimes for non-village residential estates in the three cities are respectively 19.8, 22.5, and 28.9 years. However, urban villages have shortened life expectancies. An empirical study of 1054 online samples in Shenzhen, 138 samples in Guangzhou, and 134 sample in Xi'an shows a paradox that the average building ages in urban villages in the above three cities are quite new, respectively only 12.1, 12.2, and 13.8 years, but many such villages are already demolished or planned for demolition soon. The data for non-village buildings were collected through a scan of the official renewal documents on the governments' websites. The data for urban villages were collected online from real estate websites, on which landlords post their 'for rent' information. Such a paradox can be explained in connection to the previous pattern identified in Nie and Wong (2012), that in comparison to non-village estates, urban villages suffer a problem of more severe rent dissipation induced by defective initial institutional settings. The problem can make the critical condition for renewal due earlier, thereby shortening the life expectancies for urban villages. Besides, the income transfer effect caused by the state-villager interaction and the possible cost difference for negotiation can also bring forward renewal schedules. The combination of the three reasons then leads to earlier renewals.

Redesign of Real Estate Market by Legal Regulation

Martina Hoffmann

Keywords: *Condominium market, Advertisements of condominium market, Real estate agents, Calculated heating demand*

This paper shows how the real estate market is influenced by the new Energy Performance Certificate Template-law 2012, focused on condominium market in Vienna. The purpose of the following study was to analyze the changed role of real estate agents and to show their reactions towards the new market situation. Therefore it was decided to observe the advertisement market carefully. The observation concentrated on the following two questions:

1. Changed role of the real estate agent
2. Changes on the condominium advertisement market until December, 1st, 2012?

Since November 17th, 2012 until December 22nd 2012, 1474 advertisements of the Viennese condominium market, listed in the IMMO Kurier were analyzed. The IMMO Kurier is a supplement of a well-known Austrian daily newspaper, which appears every Saturday.

Due to the investigations it could be identified, that the total amount of advertisements decreased whereas the quantity of advertisements including the calculated heating demand increased.

Therefore real estate agents are fulfilling the legal requirements of EAVG 2012 and do not risk penal provisions. In conclusion the real estate market was redesigned by EAVG 2012 and the impacts have to be observed and analyzed.

How Does an Increase in Energy Efficiency Affect Housing Prices? A Case Study of a Renovation

Aliz McLean, Áron Horvath, Hubert Janos Kiss

Keywords: *Energy efficiency, Program evaluation, Renovation, Transaction data, Hungary*

This paper presents a case study from Hungary on the effect of greater energy efficiency on residential housing prices, using a dataset on real estate transactions. The sample consists of all transactions from 2003 to mid-2012 in a treatment and a control group in Budapest's third district.

The paper uses a difference-in-differences framework to test whether prices in a large block of flats - the largest in Hungary - which underwent major energy-efficiency related renovation developed differently following the renovation than prices in comparable, neighbouring blocks.

Our results show that the renovation resulted in prices 9.42% higher than they would have been absent the renovation, which amounts to over 1 million Hungarian forints on the average flat. This can be contrasted with around 70 thousand forints in yearly energy savings and the 1.3 million forint cost of the renovation per flat. The latter implies that outside funding may also be required to make investment into energy-efficient renovation worthwhile.

Inverse Depreciation and Potential Impact of Redevelopment

Jen-Hsu Liang, Fong-Yao Chen

Keywords: *Depreciation, Potential of redevelopment, Hedonic model, Redevelopment value*

Purpose - The prices of old apartments in Taipei have reached record highs, with the market exhibiting a 'the older the building, the higher the price' inverse depreciation phenomenon. Because that real estate value includes not only use value, but also contains redevelopment value. This study examines the redevelopment value affected by redevelopment potential and by intensity of use and regional price levels of real estate parcels.

Design/methodology/approach - This study is based on the hedonic price model and adopts a semi-logarithmic regression model to explore the depreciation effect.

Findings - The results of this study showed that old buildings in Taipei do exhibit increasing value and thus inverse depreciation. The effect of building age on redevelopment value is that, the higher the expandable floor area ratio, the more intense is the inverse depreciation effect. Moreover, the higher regional price levels are, the more intense the age effect is. The combination of these two factors will have an intensifying effect on inverse depreciation.

Originality/value - This study separated redevelopment value from real estate price, adopting a direct approach to explore the building age effect in redevelopment value, not only to avoid possible bias due to confusion inherent in the indirect analysis used in previous studies, but also to further clarify the role of redevelopment value in real estate value.

Market Heterogeneity and Determinants of Paris Apartment Prices: A Quantile Regression Approach

Michel Baroni, Fabrice Barthelemy, Francois Des Rosiers

Keywords: *Hedonics, Market Segmentation, Quantile regression, House price indices*

According to the INSEE database on second-hand apartment sales, overall apartment prices in Paris have been steadily growing from the first quarter of 1998 until the first half of 2009, when they dropped by an overall 7 percent, before resuming their ascent. Between the beginning of 2010 till the end of 2011, Paris apartment prices experienced a stunning growth of roughly 30% and have stabilized since. But some Paris 'arrondissements' have been doing better than others and are still expected to experience value rises in the near future. In the presence of market heterogeneity, the ability of traditional appraisal methods to capture the true property market value may be questioned and emerges as a major issue for local authorities that collect property tax as well as for mortgage lenders confined to tight lending provisions in a crisis context. Assessing such differences in a reliable way is a step forward towards improving mortgage lending risk management.

In this paper, the heterogeneity of the Paris apartment market is addressed through assessing the differences in the hedonic price of housing attributes over the 2000-2006 period for various price, hence income, segments of the housing market. For that purpose, quantile regression is applied to the 20 Paris 'arrondissements' as well as to the 80 neighbourhoods, or 'quartiers' (each 'arrondissement' is composed of 4 'quartiers'), with market segmentation being based on price deciles (deciles 1 to 9). The database includes some 159,000 sales spread over a seven year period (2000 – 2006). Housing descriptors include in particular, a price index, building age, apartment size, number of rooms and bathrooms, unit storey, the presence of a lift and of a garage, the type of street and access to building (boulevard, square, alley, etc.) as well as a series of location dummy variables standing for the 'arrondissements' and 'quartiers'.

Findings clearly suggest that hedonic 'relative' prices of most housing attributes significantly differ among deciles, although discrepancies tend to vary greatly in magnitude depending on the attribute. Among other findings, the elasticity coefficient of the size variable, which stands at 1.070 for the first price decile (cheapest units), is down to 1.026 for units belonging to the ninth one (dearest units). The floor where the apartment is located, the number of rooms and the building period are significant attributes as well and their impact differ depending on the unit price.

Housing Supply Elasticity by Physical Characteristics: Another View

Paloma Taltavull de La Paz

Keywords: *Housing supply, Physical Characteristics, Spanish market, Elasticity*

This paper develops an analysis of housing supply elasticity by physical characteristics. Housing supply is demonstrated to be a driver of economic growth through different channels (Case, Quigley and Shiller, 2001) and reacts to market incentives with different intensities in the responses to changes on prices. The strength of such responses depends on a bundle of variables related to local house market features. Most of the studies estimate the elasticity values by region or by time but none of them have calculated such difference regarding the physical characteristics. The literature regarding the supply analysis by physical features is weak due to strong requirements of data: micro-data, detailed at local level and including a large number of characteristics and observations. This paper analyses the housing supply model segmenting the market by physical characteristics. It uses a database of micro-data with almost 40 different usable characteristics by observation, with around 1.5 x10⁶ of houses collected from 1995 to 2012 (first semester). The dataset refers to main Spanish regions and it is representative of the eight more active regions in house-building during that period.

Belfast's 'Peace' Walls: An Iron(ic) Curtain?

John McCord, William McCluskey, Michael McCord, Martin Haran, Davis McIlhatton, Peadar Davis

Keywords: *Housing, Spatial analysis, Segregation, Disamenity effect, Hedonic modelling*

Belfast's 'Peace Walls' exist to physically segregate and provide a measure of security to the communities on either side. A legacy of the Northern Irish 'troubles', they lie along traditionally controversial and/or fractious 'interfaces' between the (broadly speaking) nationalist, catholic communities and the unionist, protestant communities, typically in the densely populated streetscape of Belfast's urban fringe. Whilst they do, ostensibly achieve this aim, the question arises as to their longer term and/or wider socio-economic impact. Borders and boundaries have previously been viewed as places where different populations are kept apart. Increasingly, and for the benefit of all concerned, they are being viewed as places where people can come together. Whilst the incidence of violence and disorder is currently reduced in the vicinity of hard barriers, it may well be that these structures have the capacity to prevent the restoration of normal community interactions. They may also be providing their 'benefits' at a high cost, with regards to issues such as house price reduction. Accordingly, this paper attempts to measure the disamenity effect of peace walls on house prices, primarily focusing on the effect of distance, which is calculated using a hedonic pricing specification and spatially referenced data, using a GIS based approach. The emerging findings demonstrate that a greater negative pricing effect is evident with proximity to the peace walls in most, but not all sub markets and housing types. The results of the research are of particular interest to those concerned with property valuation and social policy formulation and analysis in regions with contested space.

The Impact of Housing on the Wellbeing of Children and Youths

David Blau, Donald Haurin

Keywords: *House attributes, Child outcomes, Homeownership, Youth wages, Production function*

Housing subsidies are often justified by claims that high quality housing improves households' economic and social outcomes. The goal of our research is to undertake a comprehensive empirical study of the causal impact of housing characteristics on the cognitive, behavioral, and health outcomes of children and young adults. The primary hypothesis is that the quality of a child's dwelling has a positive effect on child outcomes in both the short and the long run, holding other factors constant. Other key hypotheses are that the effects of housing differ by race, ethnicity, and income. In particular, we expect that there are diminishing returns to housing quality, so housing effects will be more important for low income children. We study this issue using child production function models.

There are few studies of the impact of the attributes of dwellings on child and young adult outcomes. Most existing studies have focused on the impact of homeownership compared with renting. Using mostly U.S. data they suggest there is a small positive impact on selected child and young adult outcomes of being a homeowner. But very few studies have measured the impact of crowding or building type on child outcomes.

We merge rich longitudinal data on child outcomes (National Longitudinal Study of Youth and Child Supplements) with information on the respondents' house characteristics (Zillow data). We then analyze both the short and long term effects of house characteristics experienced during childhood. Examples of child outcomes include math and reading cognition, health, and behavioral problems. Examples of young adult outcomes studied include graduation from high school, wages, employment, and criminal convictions. Examples of dwelling characteristics include the square footage of the dwelling and lot, number of bedrooms, type of structure (single or multifamily), location, whether owned or rented, persons per room, and interviewer observations of the home environment.

The study will clarify whether housing policies should be directed towards encouraging homeownership, toward dwellings' quality, or if there is no measureable effect on child outcomes. A particular focus will be on the outcomes experienced by the children of low income parents.

How Can One Tell When the Housing Market Is Out of Equilibrium?

Robert Hill

Keywords: *Housing market, Booms and busts, Price-rent ratio, Error-correction model, User cost, Quality mismatches, Hedonic price index*

Purpose - One way of detecting departures from equilibrium is by comparing house prices and rents. Here I assess the viability of this approach.

Design/methodology - Error-correction models (ECMs) based on price and rent indexes can be used to forecast movements in house prices. The short-term forecasting ability of ECMs is limited though due to the long persistence of departures from equilibrium. ECMs also suffer from the limitation that they do not tell us whether the price-rent ratio is above or below its equilibrium level at any given point in time. To answer this question it is necessary to make cross-section comparisons of prices, rents and user cost (i.e., the cost incurred by owning a house).

Findings - A meaningful cross-section comparison requires that prices and rents are quality adjusted. This may require the use of hedonic methods. The equilibrium price-rent ratio (which is derived from the user cost) is difficult to compute since it depends on the expected capital gain. Also, both the actual and equilibrium price-rent ratios differ depending on which segment of the housing market is considered.

Originality/value - The housing market, which is prone to booms and busts, can very significantly affect the rest of the economy. Hence it is important that central banks and governments can detect when the housing market is out of equilibrium. I show here how difficult it is to detect such departures.

Heterogeneous Housing Markets: Structural Implications for Pricing and Risk

Trond-Arne Borgersen

Keywords: *Heterogeneous markets, Pricing, Risk, Housing, Heterogeneity, Net-demand shocks*

Housing market analysis is normally rooted in one of two distinct modeling frameworks. Either in one where house prices are residually determined by changes in macroeconomic variables such as interest rates, wages, inflation, unemployment and the cost of construction. This approach ignores interplay between market segments and treats housing markets as homogenous. Alternatively, is the analysis rooted in a framework that highlights the same interaction between segments. The latter approach, acknowledging that the housing market is not one market but rather a number of interlinked market segments, can be referred to as a heterogeneous housing market theory camp. Empirical assessments regarding whether housing markets are in or out of equilibrium are however – often due to weak data availability - often derived from the homogeneous housing market theory camp, analyzing house prices responses following shocks to income, rent or interest rates.

This paper is concerned with the implications these two distinct theoretical camps have for the structure of risk and the structure of pricing in housing markets. Stated differently, whether empirical assessments derived from the homogeneous theory camp underestimate – or overestimate – pricing and risk in real housing markets?

We present a conventional linear housing market model and consider the structure of pricing and risk as well as how different market structures responds to shocks. First we ignore the interrelation between segments. The results derived from this benchmark give indications on the structure of pricing and the structure of risk that will come about in models where housing markets are treated as homogenous residuals.

We compare our benchmark with the two heterogeneous scenarios: First a housing market characterized by equity induced up-trading. Second, we allow home equity withdrawal and intergenerational transfer of housing wealth as elder households assist younger adults to become home-owners. When comparing the structure of pricing and risk that come about in these two heterogeneous housing market scenarios to those derived in our homogeneous benchmark we are able to assess the value added, in terms of increased understanding regarding the structures of pricing and risk in housing markets, by allowing for heterogeneous market frameworks.

The model shows how out of equilibrium assessments derived from frameworks that abstract away from the interplay between segments might in part be explained by this abstraction. Second, we see how the former framework significantly underestimates house price risk.

A main message from the paper is the urgent need for improving data quality on housing market at the micro level to allow for empirical assessments taking market interplay into account.

The Australian Dream: Living on the Coast

Kathryn Robson

Keywords: *Housing, Demographic trends, Sea Change, Coastal development, Infrastructure*

Purpose - This research provides an analysis of the disparate notions and ideas, to form an overview of the possible trends in residential property for the Victorian coastal areas of the Surf Coast and the Bellarine Peninsula.

Design/methodology: Whilst examining the patterns of urban development in these areas of coastal Victoria over the last 20 years, the research also investigates possible reasons for the changes that have occurred. The data used in this research comes from both primary and secondary sources. The primary data was developed on the basis of responses to a mail out questionnaire to residents from seven towns on the Bellarine Peninsula and the Surf Coast. The secondary data comes primarily from the Australian census results, which occurs every five years, the most recent being in 2011.

Findings - These coastal communities and their environment are at serious risk from the increased growth of both population and tourism. It is only with the support of all three tiers of government that the future requirements of coastal communities will be met.

Social implications - There needs to be a policy framework of sustainable growth and a funding approach to enable the local councils, not only on the Bellarine Peninsula and the Surf Coast, but on all Australian coastal areas, to embark on an extensive program to provide the necessary services and infrastructure for these changing environments.

Originality - This research brings into question the need to control residential development to protect the fragile environment in the Australian coastal areas.

The Non-linear Ripple Effect of Housing Prices in Taiwan: A Smooth Transition Regressive Model

Mei-Se Chien

Keywords: *STR model, Nonlinear ripple effect, Regional house prices, Taiwan's house market, Transition variable*

Being different from past research of regional housing prices, this paper employs smooth transition regression model, derived in Teräsvirta (1998), to investigate ripple effects among four regional house prices in Taiwan. The aim of this paper is to test whether a smooth transition regression model, which is capable of capturing this non-linear behaviour, can show a better characterisation of regional housing prices than a linear model. This empirical analysis applies the four regional house prices of Taiwan, including the capital in Taiwan, Taipei City, and its suburban area, New Taipei City, and the other two mega cities of Taichung City and Kaohsiung City, from the first quarter of 1998 to the second quarter of 2011. Using the changing rate of housing price of Taipei City to be the threshold variable, the empirical results of the smooth transition regression model show that the ripple effect exists between housing prices of New Taipei City and Taipei City, while there is no ripple effect between housing prices of New Taipei City, Taichung City and Kaohsiung City. Besides, this paper has presented evidence of a non-linear relationship between housing prices of New Taipei City and Taipei City. When the changing rate of housing price in Taipei City is lower than 15.02, increasing housing price of Taipei City will make the housing price of New Taipei City rise. Inversely, if it is higher than 15.02, increasing housing price of Taipei City will make the housing price of New Taipei City decrease.

Unraveling the Inflated House Price in the New Housing Supply

Rahah Ismail

Keywords: *Inflated house, Housing market efficiency, Cost of purchasing, Primary housing market*

There are a lot of concern both by public at large and the government on the inflated house price in the housing market, fearing that it could lead to property bubble and raises the issue of affordability. On a closer look at the property transactions data, it was observed that the main increase in the house price is often related to the primary housing market, i.e. new supply in the housing market whereas the sales price of existing supply, or the secondary market, remains stable or increase marginally. What is more baffling is that the two markets are sometimes in the same location, with same accessibility, with units available for sale but the sales price of houses in these market shows a marked difference.

It is grounded in theory that price is a function of demand and supply. However, if supply is in abundance in the secondary market, what causes the price differentiation between these two markets. This research attempts to unravel the inflated house price in the primary market. First, the research investigates on market efficiency i.e. the extent of dissemination of sales information of both housing in the primary and secondary market. Second, it explores the level of complexity/ease in purchasing houses in the primary and secondary market. Third, it examines the costs of purchasing houses in the two markets to the purchasers. Fourth, it looks at what the housing in the primary and secondary market has to offer in terms of facilities, amenities, design and technology.

This research involves looking at published data in the Annual Property Market report, interview with the Malaysian Association of Estate Agents, Residential Housing Developers Association, Auctioneers as well as survey using questionnaires to purchasers of new housing.

At the end of this research, it will give an understanding why purchasers are willing to pay more for houses in the primary market, whilst similar housing in the same locality is available in the secondary housing market. The research will suggest what can be done to reduce the price gap between the primary and secondary market.

Sustainability Assessment of Buildings and Corporate Real Estate Management: The Risk Management Perspective

Susanne Geissler

Keywords: *Risk management, Energy efficiency, Green building, Property value, Real estate*

Sustainability assessments of buildings are well known to result in certificates, which are mainly used for marketing purposes. This conference contribution does not tackle the marketing perspective but focuses on the sustainability assessment of buildings as a risk management tool for corporate real estate management. Buildings have a long life span, and it is important to ensure a stable performance of the property during several decades. Regarding market demand, the building location is undoubtedly a very high ranked criterion when it comes to making the decision to buy or rent a building or building unit or not. Nevertheless, building specific quality characteristics such as energy efficiency characteristics related with the building envelope and the HVAC system, characteristics related with the indoor air quality, and quality characteristics from the facility management perspective to reduce running cost have been gaining in importance, due to the following exemplary reasons: (1) Energy: Even if clients seldom demand for energy efficiency, this topic is definitely on the rise due the legal framework conditions such as the EPBD (Energy Performance of Buildings Directive) and the EED (Energy Efficiency Directive); if a building is not fit to be able to comply with the requirements to come, upgrading might be more expensive than taking energy efficiency into account from the beginning. (2) Indoor climate: Productivity depends on social aspects, but also on building related aspects such as air quality, summer and winter comfort, quality of light, and noise level; this area is more a subject of competition on the market than energy, because of the impact on people's health and productivity. (3) Materials: The type of façade and choice of materials in general has a strong influence on running costs; a wise choice results in a reduction of cleaning costs. All these aspects are finally cost-related factors, which might affect the saleability of a property. Building assessment schemes provide a full range of decision-making criteria to consider all building related aspects, which are already on the rise or might become important in the near future. However, it is the responsibility of the informed expert to decide between options. This conference contribution uses the Austrian sustainable building assessment scheme (ÖGNB – ASBC) to demonstrate the relation between building assessment criteria and risk factors.

To Buy or to Rent, that is the Question: Differences in Homeownership According to Economic and Demographic Parameters in Europe

Elena Zanlorenzi , Ilona Schaeffler

Keywords: *Europe, Economy, Demography, Differences, Homeownership*

Does it make more sense to buy or to rent a home from an investment perspective? The answer, in an era of historically low interest rates and perpetually rising real estate values appears to be obvious: buy. But it could also be a better financial move from an investing standpoint to rent rather than to buy because people rarely consider some major costs of owning a home like operating costs and the impact of a mortgage.

But what explains the differences in homeownership rates in Europe? A general trend is the increase in homeownership rates in most EU countries reflecting demographic and economic developments. This trend has also been greatly boosted by policies encouraging home ownership. Today homeownership ranges from over 90% in some Eastern European countries (Romania and Bulgaria) as well as in Southern European Countries like Italy and Spain, to 40% in Germany and Austria.

Identifying Real Sources of Risk and Diversification

Stephen Ryan, Matt Richardson

Keywords: *Risk adjusted return, Volatility, Co-efficient of variation, Structured income, Diversification, Label*

Purpose - To examine whether current decision-making approaches and tools are effective for investors seeking risk-adjusted returns in private equity real estate. Two problems in particular are examined: first, over-reliance on geographic, sector and style labels; second, excessive emphasis on volatility of total returns (which is problematic because total return data mask the marked difference between the volatility of income returns and capital returns). Long term and short term improvements are suggested.

Design/methodology/approach - Analysis of historic sources of risk and return at multiple levels and over different time periods, with focus on difference between income and capital returns.

Findings - For investors whose priority is maximising risk-adjusted returns, better results are obtainable by looking through sector, geographic and style labels at the underlying cash flows. Long term diversification is more likely to be achieved through a combination of complementary income sources and lease structures than through naive geographical or sector diversification. The difference in volatility of income returns and capital returns merits greater attention.

Research limitations/implications - Historic data is scarce outside the most mature markets.

Practical implications - May help develop clearer understanding of real estate risk and improved decision-making for sell-side and buy-side market participants.

Agglomeration of Global Office Skyscrapers: Lessons Learned

Sofia Dermisi

Keywords: *Office buildings, Skyscrapers, Construction Length, Structural material, Global power cities*

This paper studies the agglomeration of office skyscrapers across the USA, Europe the Middle East and Asia (198, 22, 34 and 294 buildings, respectively). The paper analyses the construction trends around the world, of skyscrapers 600ft (183 m) or more, focusing on construction periods, material use, location, economic, political conditions and agglomeration patterns. The initial results of the study suggest that agglomeration patterns across some newly founded skyscraper cities are not always attributed to the traditional economic factors. In addition, differentiations are evident between the types of structure (e.g. steel versus composite) and agglomeration timing and patterns.

Comparing International Real Estate Development: A Methodological Inquiry

Erwin Heurkens, Graham Squires

Keywords: *Real estate development, Development contexts, International comparison, Development practices, Methodological inquiry*

If context is everything, can a comparative approach produce any meaningful contribution? For research in real estate, focusing on the principles of real estate markets (e.g. Dent et al., 2012), real estate development (e.g. Miles et al., 2007; Peiser & Hamilton, 2012), and real estate finance and investment (e.g. Brueggeman & Fisher, 2010) are often geographically bounded and/or specific to a sector or market. Hence, to a certain degree these studies lack full potential to explain and comprehend the interdependency, complexity and challenges of real estate development. Adams & Tiesdell (2012) provided a thorough conceptual overview of real estate development characteristics in relation to planning on an urban scale - although these matters are not comparatively drawn.

However, in a globalizing world, it seems appropriate for scholars and practitioners to obtain a better understanding by comparing the various international real estate development contexts they wish to study or work in (Barkham, 2012). An institutional approach to international real estate has been one such leap to comparatively examine some aspects of development in different geographical contexts (Seabrooke et al., 2004). This may help to move beyond technocratic real estate valuation and appraisal methods, towards a wider understanding of how the conditions for real estate development become effective in different markets. Moreover, in the light of the enduring economic stagnation in Western countries, there seems to be an increased need for and interest in new perspectives and insights from successful foreign real estate development practices, as valuable lessons might be drawn from them.

Nevertheless, such a comparative international perspective on real estate development provides some research challenges in terms of methodology. Therefore, first this paper examines the methodological challenges of international comparative and lesson-drawing research (e.g. Heurkens, 2012). Second, it provides a comparative model containing various characteristics and criteria by which different real estate development contexts in Europe, North America, South America, Asia, and Africa can be compared. Finally, the paper illustrates the applicability and limitations of such comparative model by using some examples of international real estate development practices.

Sponsor, Corporate Governance and Asian REITs Performance

Annisa Dian Prima, Simon Stevenson, Peter Wyatt

Keywords: *Asian REITs, Managerial ownership, Board independence, Agency cost*

This study aims to investigate the role of sponsor and internal corporate governance mechanisms in the performance of Asian REITs. The presence of sponsors, who are often the controlling unitholders of the REIT and the parent companies of the manager, is argued to exacerbate the agency costs. Under the premise that the sponsors commit to align their interests with that of other unitholders of the REITs, firm performance and board independence are expected to increase with sponsor ownership. Conversely, if sponsors increase their unitholdings to enhance their power to extract private benefits and expropriate the wealth of minority unitholders, sponsor ownership is expected to have a negative relation with board independence and REIT performance.

This paper proposes an alternative measurement to calculate the level of sponsor unitholdings in the REIT. Between 2002 and 2012, sponsors retain around 19 percent of Asian REIT underlying assets. The final sample that is used consists of 514 firm-year observations from 91 REITs across Japan, Singapore, Hong Kong and Malaysia. It is found that board independence is negatively related with ownership by insiders (sponsor, CEO, and affiliated directors). The results also show that abnormal returns of REITs increase with insider ownership, but decrease with board independence. Further analysis reveals that REITs with high sponsor ownership outperform those with low sponsor ownership during financial downturn. The evidence seems to suggest that sponsors do not align their interests by appointing more independent directors in the board, but rather by providing REITs with strong development pipelines and support for future acquisition.

A Gravity Model of Cross-Border Real Estate Development Flows

Catherine Bushnell, Patrick McAllister, Anupam Nanda

Keywords: *Real estate development, Gravity model, Cross-border flows, Poisson regression*

This paper investigates the scale and drivers of cross-border real estate development in western Europe and central and eastern Europe (CEE). Drawing upon existing literature on the integration of international real estate markets, we make some inferences on expected patterns of cross-border real estate development flows and use a transaction database to assess these flows. A range of economic and real estate variables are explored in this analysis. Whilst western European markets tend to be dominated by local developers, much higher levels of market penetration by international real estate developers are found in the less mature markets of central and eastern Europe. Our modeling approach is two-pronged: explaining volume of development flow as well as probability of any development flow taking place between two countries. Empirical modeling based on Poisson pseudo-maximum likelihood and Poisson-logit maximum-likelihood hurdle model specifications reveal the importance of size of the economies, distance between countries, extent of globalization and EU membership as significant determinants of cross-border real estate development flow. These results are strongly robust across a number of model specifications and samples.

Cluster Analysis and Italian Real Estate Market Analysis during the Downturn

Laura Gabrielli

Keywords: *Italian real estate market, Market segmentation, Cluster analysis, Housing submarkets*

Property is an important sector in Italy, as it represents the largest component of household wealth, and homeownership greatly prevails (around 80%). The construction sector is an important contributor to domestic economy (about 15% of the GDP), with a moderate negative trend of the gross fixed capital formation experienced in the last few years. Credit crunch and weak economic prospects hit the property market, reducing house prices and, above all, freezing capital flows and dramatically bringing transaction volumes down. This raised concerns about the weakness of the property market during the current downturn.

This paper presents an approach called clustering analysis applied in order to identify different conditions of the Italian property market. The approach helps to understand the behaviour of the market and offers its characterization.

The approach was applied to the last 15 years of data on Italian real estate market using a variety of demand-side variables and supply-side variables, such as the number of transactions, house stock, house prices, building permits, mortgages. The analysis has been conducted analysing data organised at Regional Level and Local Level (Provinces). Cluster analysis is then used to determine the composition of different submarkets and to characterise them, in order to understand their different conditions and to assess the weakness of the different submarkets during the current downturn.

An Assessment of the Impact of Overseas Buyers on the Pricing and Utilisation of Prime Residential Properties in Central London

Patrick Dempsey, Andrew Ellison, Graham Squires

Keywords: *Property development, Investment and finance, International real estate, Residential, Inward investment*

Foreign direct ownership of residential property in central London has accelerated over the past 10 years, with over 60% of new stock in 2011 being acquired by international buyers (Drivers Jonas Deloitte, 2011). Prime residential prices in the top three boroughs rose by 49% from 2009 to 2012, which Knight Frank (2012) principally attributed to demand from overseas buyers. The market in parts of London has moved away from ties to the domestic economy, as the Institute of Public Policy Research notes that "overseas demand is a potential force shifting London's housing market away from an anchor in local wages and the traditional boundaries of affordability" (McCarvill et al, 2012). There is anecdotal evidence the new wave foreign owned properties have low occupancy levels and therefore do little to aid the housing shortage in central boroughs or support local businesses, leading to calls from Institute of Policy Research (McCarvill et al, 2012) and The Smith Institute (Haywood, 2012) for government intervention. There is limited publically available data on the utilisation of overseas owned prime residential in London, which is bridged in this research with quantitative data collated from surveys of all councillors in the three prime residential boroughs and qualitative data from interviews with professions engaged in residential development, sale and management. Findings consider the result of inward investment on prime residential values and the changes in economic activity in areas with the highest levels of foreign ownership. This research will be help to help inform policies on future inward investment.

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Real Estate Risk & Exposure of Banking Institutions to Real Estate

Seow Eng Ong, Mohd Khairul, Muhammad Faishal Ibrahim, Le Thi Thanh Thao

Keywords: *Real estate exposure, Banks, Risk, Shariah compliance, GCC*

Analyzing the real estate risk sensitivity of GCC banking institutions, we found that both real estate loan and equity exposure of conventional and Islamic banks positively increases its real estate beta risk. The results persist across different subsamples. As expected, the effect is more persistent during time periods when bank's real estate exposure is elevated. Generally, due to the greater real estate exposure of Islamic banks, they possess greater real estate beta risk than conventional banks. However there is no evidence that Islamic banks real estate exposure has a differential effect on real estate risk vis-à-vis conventional banks. With limited Shariah compliant real estate hedging capabilities, improving the management of real estate risk in Islamic banks could be a potential foray for regulators and product structurers.

Diversification Gains and Systematic Risk Exposure in International Public Real Estate Markets

Colin Lizieri, Marielle Apisara Chuangdumrongsomsuk

Keywords: *International real estate, Systematic risk, Diversification, Portfolio management, Market integration*

In this paper, we re-examine the benefits of holding a portfolio of international real estate securities in the light of evidence of growing co-movement of securitised asset returns across markets. Do diversification benefits depend on how integrated or independent the firms and countries are at global or regional level? Specifically, can more risk reduction be achieved through holding international diversified investments in segmented markets rather than co-integrated markets? If so, is it possible to identify the extent of this effect, hence informing global investor strategy, particularly in the light of a growing integration within global securities markets?

The paper develops studies such as Wilson and Zurbruegg (2003), Gerlach et al. (2006) and Gallo and Zhang (2010) in focussing on the cointegration between markets, but extends that work in seeking to identify the sources of difference and in investigating the impact of cointegration on the sensitivity of asset returns to factor risks.

Cointegration is captured using a variety of techniques: ADF, PP, KPSS and Zivot and Andrews. From these tests, we produce two portfolios of “cointegrated” and “independent” indices and assess whether they differ in terms of risk-adjusted return. We examine Sharpe ratios and sensitivity to systematic risk, using a range of multi-factor models, decompose portfolio risk using a Fama-Macbeth approach and apply a canonical approach to test sensitivity to macro-economic and financial risk factors.

The paper utilises data from GPR's international real estate company database. Monthly returns 1997 to 2011 from individual firms are aggregated to produce value-weighted indices for 19 countries) and five regions. We also examine company returns by sector and, separately, examine firms that are based or predominantly invested in international financial centres. In the analysis presented here, we focus on results for US\$ returns, although local currency returns are reported.

The results indicate substantial differences in factor sensitivity and risk between the cointegrated and independent portfolios although benefits from risk sensitivity may be offset by lower aggregate performance. We re-examine the results for different time periods and for sector-specific company indices and, finally, examine the results for companies focussed in global financial centres. Differences in the results shed light on the sources of integration and systematic risk.

Property Bubbles and the Driving Forces in the PIGS Countries

Philipp Klotz, Tsoyu Calvin Lin, Shih-Hsun Hsu

Keywords: *Property Bubble, Monetary Policy, VAR, VECM, Direct Capitalization, WACC, PIGS*

The PIGS countries stand in the spotlight of the current financial crisis in Europe. The boom and bust of the real estate sector was one of the major sources putting these countries into an economic downturn. This paper determines the extent to which these countries experienced property bubbles and sheds light on the role of monetary policy in the formation of bubbles. We draw from Stiglitz's (1990) theory on asset bubbles and apply the direct capitalization approach through weighted average cost of capital (WACC) to identify real estate bubbles in the period from 1999 to 2012. In the next step we apply VAR and VECM models to investigate short- and long-run dynamics between the monetary policy of the ECB and property bubbles in the PIGS countries. Our findings indicate that Spain and Ireland experienced the largest positive bubble formation, followed by Portugal with a small bubble. In contrast to that, Greece experienced a strong negative bubble. While we find only a very weak short-run relationship between monetary policy and bubble formation in Portugal, we find both, evidence for a long- and short run relationship in the case of Ireland, Greece and Spain. The varying extent of the bubble formation and the differing impact of the monetary policy on the bubble across the PIGS countries can be mainly attributed to characteristics in the domestic financial-, fiscal- and macroprudential-system. This paper provides strong evidence that countries with very low interest rates and low to moderate tax rate as well as high loan-to-value ratios have the potential to experience large property bubbles. Central bank's policies are crucial to trigger the boom and burst of property bubbles by manipulating the interest rate and availability of lending for house purchase. As this research only covers aggregate data for entire countries, diverging developments within each country are not captured. Future research could contribute to the literature by focusing on property market developments in specific cities or regions.

Indigenous Peoples' Interests and the Oil-Gas Industry

Richard Grover, Gregory Ledkov, Mikhail Soloviev

Keywords: *Indigenous peoples, Industrial invasion, Environmental destruction, Compensation mechanism, Sharing*

Purpose - The article discusses the issues involved in reconciling the development of natural resources with traditional uses of land, such as nomadic reindeer herding and fishing. Whilst it is in the national interest to exploit the oil-gas reserves the indigenous population cannot be protected by usual methods of compensation. It raises complex questions of whether the destruction of indigenous livelihoods and cultures can be avoided and whether and what ways the traditional users of the land can protect their interests through sharing in the benefits from natural resource development.

Design/methodology/approach - The article uses a case study of Yamal-Nenets Autonomic Okrug undertaken by G Ledkov and examples from other Northern regions.

Findings - There has been significant disruption of environment quality and indigenous livelihoods.

Practical implications - The leading oil-gas companies developing the industry and infrastructure, are aware of the environmental and social impact of their operations and have sought to mitigate these through engineering solutions and by sponsoring cultural event in similar ways to those used by oil and mining companies elsewhere.

Social implications - The Nenets' (and similar indigenous peoples') survival as a distinct culture is bound up with their traditional livelihoods and the natural environment.

Originality/value - G Ledkov's perspective as the Duma member for the region gives this article a unique insight into the negotiation process in a situation of asymmetrical power. The results can be used for other Northern regions indigenous population.

Transition Factors in Former Communist Countries' Property Markets

Richard Grover, Christine Grover

Keywords: *Transition economies, Property markets, Market transparency, Land governance, Corruption, Property rights*

Purpose - The article examines to what extent there are still transition factors influencing the property markets in the former Communist countries. When transition began over 20 years ago, there were clear differences from market economies as a direct consequence of their history in terms of institutions, property rights, approaches to markets, business organisation, laws, and physical forms of built environment. The article examines the extent of convergence with market economies and whether transition economies can still be regarded as a distinct group in terms of their property markets.

Design/methodology/approach - The article takes a wide range of data, including that from the World Bank, World Economic Forum, Bertelsmann, Jones Lang LaSalle, UNDP, European Mortgage Federation, and Transparency International, and compares transition economies with non-transition economies of similar level of development to see if there remain distinct 'transition' differences.

Findings - The initial findings indicate convergence under the influence of the EU, World Bank and FAO but also differences from market economies in areas such as property market transparency, strength of property rights and land governance.

Research limitations/implications - There is a need for better quality data on transition countries' property markets.

Practical implications - The differences suggest that transition economies continue to require specific policies for the development of their property markets.

Originality/value - Whilst there have been studies of 'transition' factors generally in economies, there have not been ones that look specifically at property markets.

To Hold or Not to Hold? The Development of Holding Period Length Across Several European Markets

Jan Reinert

Keywords: *Country comparison, Property tenure, Transaction costs, Excess return*

Finance literature on holding periods suggests that illiquidity and high transaction costs can lead to longer holding periods while return volatility leads to shorter holding periods. Since real estate is a very illiquid asset with high transaction costs, holding periods tend to be longer and strongly linked to performance with the risk of underperformance higher over shorter investment horizons. Several market observers claim that holding periods have been decreasing over the past decades. *Ceteris paribus* that would imply deteriorating performance. However, shorter holding periods could also be explained by decreasing transaction costs, increasing return volatility or other factors.

This paper is going to analyze and compare the development in holding periods for several European real estate markets. While a comparison between different countries will be carried out, the main focus will be on the UK market for which the longest time series is available.

A regression model is used in an effort to quantify the impact of increasing transaction costs, in particular taxes, on holding period length in order to determine how changes in legislature affect the market. Finally insights gained from the link between holding periods and investment performance can provide useful guidelines for portfolio managers.

Data on sale and purchase dates, transaction costs and individual property performance for several countries is supplied by IPD Investment Property Databank. A preliminary analysis suggests that average holding periods and deviations from the mean differ substantially between countries. The Netherlands seem to have had the longest average holding period with the largest standard deviation. The shortest average holding period could be found in Sweden while France had the smallest deviation of holding periods. Data for the UK is still pending.

Cross-Border Capital Flows into Real Estate

Andrew Baum, Franz Fuerst, Stanimira Milcheva

Keywords: *Cross-border flows into real estate, Transparency index, Institutional barriers, Rule of law, Economic development*

Cross-border capital flows into real estate are marked by sharp inequalities among countries. Hypothetically, each country should receive capital flows commensurate with the size of its respective economy or, more accurately, the total size of its investible real estate market. In contrast to this hypothesis, the observed capital flows deviate substantially from this 'naive equilibrium' not only in the short run but persistently throughout economic cycles and long-run economic development trajectories. One of the possible explanations for the long-term aberration from expected values are institutional barriers encompassing a broad range of economic, legal and political risks as well as more intangible cultural factors. This study sets out to empirically test for the existence and significance of these barriers by investigating a unique database comprising real estate flow data and a large number of other economic and property market indicators.

Following the above observation, we test for deviations of observed capital flows from expected capital flows using a regression framework. Given that cross-border real estate investment activity in each country should be directly proportional to the size of the investible or institutional-grade stock, and observed activity will be different from hypothesised levels, we investigate the determinants of any deviations we find, focussing on economic development, market transparency, rule of law and cultural factors. Based on earlier empirical studies, we expect that excess cross-border capital flows are driven by high GDP per capita, high real estate market transparency and low barriers to market entry. We expect that all countries 'punching above their weight' achieve high scores on all these factors and vice versa.

Does Plan matter in China? Effects from transport improvement on land prices

Wenjie Wu

Keywords: *Land prices, Local public goods, Transport improvement, Geographical information system, China*

Over 140 billion CNY (1GBP=10CNY) has been spent between 2000 and 2012 in Beijing on the construction of new rail transit lines. Such massive investment allows me to examine the consequences of transport improvement for land prices nearby new stations. Conventional hedonic techniques for valuing rail access mask the changing nature of geographical links between land parcels and stations induced by rail transit expansions. This paper improves on previous literature by applying a spatial multi-intervention difference-in-difference approach to estimate the heterogeneity in the capitalization effects of rail transit development for residential land uses in Beijing. The results show that residential land parcels that receive increased station proximity experience appreciable price premiums, but the relative importance of such benefits varies over space. These findings lend to support the evidence that public investment has an essential role to play in spurring the spatially targeted land market and provide implications for further land and transport policy making in China.

Real Estate-Related Decisions in European Cities

Carsten Lausberg, Anna Wojewnik-Filipkowska, Malgorzata Rymarzak

Keywords: *Public real estate management, Municipality, Decision making, Real estate strategy*

A considerable part of the European property portfolio is owned by municipalities. In a market economy this raises several important questions, for instance whether the real estate management in public administrations is as efficient and effective as in private institutions. We address this question by looking at one important detail: the ways decisions are made in European cities. Surely this aspect cannot fully answer the question, but it can deliver meaningful hints for further research and for improvements in practice.

The first part of our paper contains a review of the literature on decision theory and public real estate management from which we derive a number of current issues in municipal real estate decision making. In the next chapter we analyze the literature on the real estate portfolios of selected European cities which leads to a classification of public properties. Since the data is scarce and not much research has been done in this field we take an in-depth look at three best-practice cities to find out about the decision making processes in practice. For each city we describe the current situation (Example: 'How many properties are managed by how many employees?'), the strategy (Example: 'Is 'creating public value' a strategic objective?'), the organization (Example: 'Is the real estate management centralized?'), and the decision making process (Example: 'When do employees deviate from the defined decision making processes?'). We conclude our paper with a summary of the findings from the case studies and some suggestions for other cities how to improve real estate management by improving the decision making processes and instruments.

The Impact of Real Estate Market Transparency on Dynamics between Direct and Indirect Real Estate

Yun Luo, Kwong Wing Chau

Keywords: *Market transparency, Real estate securities, Direct real estate market, Variance decomposition, Pure factors*

This paper provides cross-country evidence of the linkage between real estate market transparency and the dynamics between direct and indirect real estate, which is seldom examined in the previous literature. First, by adopting a variance decomposition procedure, the proportion of indirect real estate volatility that is attributable to 'pure' direct real estate, stock and bond factors in 18 countries over 1998-2012 is assessed. Second, the correlation between real estate market transparency and dynamics between these two real estate markets is examined. This paper concludes that real estate market transparency is significantly associated with the linkage between direct and indirect real estate, especially on the transaction aspects. These results have significant implications for international investment fund managers to consider the possibility of real estate securities as substitution for global property investment whilst enjoying the liquidity benefits.

Consistency and Comparability of International Property Valuations

Lynne Michael, Guowei Gu

Keywords: *International property valuation, Market transparency, International valuation standards, Valuation consistency and comparability*

This paper investigates whether international property investors can rely on comparability and consistency in international property valuations.

A survey was conducted with further secondary data analysis to investigate the drivers, risks and confounding factors affecting global property valuations. Major risks identified were political instability, a comparative lack of transparency in property markets and inferior property rights including titles, rights to minerals, water and land use. The majority of respondents indicated it is only occasionally possible to consistently compare movements in international property values. With regards to financial reporting using International Valuations Standards (IVS), there was no agreement between those surveyed as to whether all IVS reports were consistent in the property asset description, supporting valuation data (including methodology) and definitions of value. The majority of those surveyed conveyed a valuation was not sufficient evidence to support the purchase price of an international property investment without making further investigations.

The research concluded that a number of variable factors including valuer education, regulation, benchmarking, ownership rights, legal titles and market transparency affect international property valuation and application of IVS will be inconsistent.

Commercial Office Occupiers' Perceptions of Office Market in Post-Earthquake Christchurch, New Zealand

Sandy Bond, Zoltan Moricz

Keywords: *Earthquake impacts, Office relocation, Christchurch rebuild, Commercial tenants, Risk perceptions, Willingness-to-pay*

The 22 February 2011 Canterbury earthquake had a devastating impact on Christchurch property with significant damage caused to land and buildings. As at November 2011, around 530 buildings have either been demolished or identified to be demolished in central Christchurch. In addition, around 140 buildings have either been partially demolished or identified to be partially demolished.

The broad aims of our ongoing research are to (i) examine the nature and extent of the CBD office relocation, (ii) identify the nature of the occupiers, (iii) determine occupier's perceptions of the future: their location and space needs post the February earthquake, and the likelihood of relocating back to the CBD after the rebuild and the release of the Christchurch Recovery Plan. To address these issues, the third of our six-monthly surveys of around 20 questions was developed. A total of 631 contacts received the survey. These contacts were obtained from two sources. Firstly, 275 suburban office occupier contact details were obtained from a physical survey of office occupiers as of August 2011.

The survey recorded a response rate of 15.4% (97), a decrease from the previous two surveys when response rates were 22% (139) and 21.8% (140) respectively. This lower response rate may be due to survey fatigue. Based on the findings of the initial survey, just over half of respondents were relocated CBD occupiers and 45% were existing suburban office occupiers. Results from the first survey indicate that 66% of respondents have reduced their office size since the earthquakes. More than a quarter of relocated tenants signed leases of one year or less, and 27% of businesses are now working out of residential premises. In comparison to the previous surveys, the CBD has become less attractive to office occupiers. Currently, only 27% (26 of the 97 respondents) of the occupiers surveyed have an intention to move into CBD, which decreased as compared to the January 2012 and August 2011 surveys, recorded at 32% and 38% respectively.

Do Investors Pay Attention to Rare Disaster Risk? Evidence from Earthquake Risk in Japanese Real Estate Investment Trust Market

Masaki Mori, Seow Eng Ong, Joseph Ooi

Keywords: *Rare event risk, REIT, Limited attention, Earthquake, Asset pricing*

The financial economics literature suggests that the possibility of rare events occurring affects asset pricing dynamics. At the same time, the recent finance literature found that investors often pay only limited attention to relevant information in making their investment decisions and they shift attention allocation once notable events occur.

Our study builds upon past asset pricing literature discussing both rare disaster risk and limited attention by first examining the effects of investor attention/inattention to rare disaster risk on asset pricing dynamics. We utilize the earthquake events that have occurred in Japan during the past 10 years as rare disasters and examine their impacts on asset price dynamics within the Japanese Real Estate Investment Trust (J-REITs).

Specifically, we study the relationship between the changes in perceived earthquake risk and the J-REITs' stock returns to examine if perceived earthquake risk is priced in J-REIT stocks. We then examine investor attention/inattention to the earthquake risk and its effects on stock returns in two ways. Firstly, we test whether the relationship between the changes in perceived earthquake risk and the J-REITs' stock returns differs based on the published earthquake risk measure of individual J-REITs, called Probable Maximum Loss (PML) during the past 10 years. Secondly, we focus on price movements after the starts of earthquake events to examine if investors alter their attention allocation once earthquake events provoke their fear and awareness of earthquake events.

The relationship between rare disaster risk and stock returns has been only recently empirically examined in the finance literature. However, the literature has provided no direct empirical support for the assertion that investors actually pay attention to rare disaster risk. Thus, our study will shed new light on the discussions on the effects of rare disaster risk and the impacts of investors' limited attention on asset pricing dynamics by examining the interrelationship between these two concepts. This study also contributes to the REIT literature, revealing how earthquake risk is priced in REITs in earthquake-prone countries. This is important, since more and more REIT markets are being developed in several countries, notably in some Asian countries that are prone to earthquakes.

Valuing the Risk of Imperfect Information: Christchurch Earthquake

Callum Logan

Keywords: *Earthquake, Price adjustment, Risk, Compensation, Housing*

Purpose - This is a background discussion and literature review relating to the application of methods to measure the impact of a significant earthquake event on house prices. The purpose of this review is to select an appropriate methodology to be applied to the assessment of earthquake impacts on Christchurch house prices. The results of this review will form part of a further research paper.

Approach - Previous literature specific to hedonic modelling of earthquake events and their impact on housing is limited. Therefore, a wider review of natural disaster events and types of methodologies used are undertaken in this paper.

Findings - The Christchurch earthquake land zoning process combined with government compensation that followed the 2010 earthquake is unique. The literature review suggests that a hedonic pricing modelling using a Difference-in Difference specification may be the most appropriate model for an event of this nature.

Value of research - It is anticipated that the outcomes of the proposed further research will assist in the identification of risk management strategies for the insurance industry, central and local governments. This type of research also has relevance for other earthquake prone cities as well and the methodologies could also be applied to other natural disaster risks such as floods, hurricane and storm surge risk zones along coastlines.

Gentrification Interrupted: Impacts of the Christchurch Earthquakes on Inner City Revitalisation

John McDonagh

Keywords: *Gentrification, Revitalisation, Earthquake, Christchurch, Disaster*

The purpose of this research is to examine the impact of the Christchurch earthquakes on building owners and tenants in an area of the CBD that was undergoing revitalisation and gentrification prior to the earthquakes. The methodology encompasses a comprehensive, long term case study of the area involving observation, interviews and document analysis. This paper reports preliminary findings based on observation of public meetings, newspaper reports and a small number of interviews. Findings include early commitment by owners and tenants to rebuild the area in the same style, but over time this has declined as delay, demolition, insurance problems, public safety and engineering concerns, political and planning changes and other emerging issues have made participation by the original owners and tenants impossible or uneconomic. It is early days in a long term rebuild process and this study focuses on only one area of the city, but it appears similar problems have arisen in other parts of the city and may well apply to other locations and other types of disasters. No other examples of such a complete and total interruption of a CBD revitalisation or gentrification process in a modern economy have yet been identified, but as the research progresses it will seek to uncover any such examples, should they exist, and draw comparisons. In any case this case study will represent a unique and important contribution as to what may happen in such circumstances.

The Austrian Market on Foreclosure Sales of Real Estate – Development 2007-2013 and Future Trends

Monika Konvicka

Keywords: *Foreclosure sale, Recovery rate, Market transparency, Non performing loans*

The annual volume of foreclosure sale of real estate represents only a rather small share (a few percent) of the total annual sales volume of real estate in Austria. On the other hand, the availability and reliability of detailed information on the foreclosure sub-market is much more pronounced. Thus, the detailed analysis of this sub-market offers a rather unique perspective on market transparency, which even allows for drawing some conclusions on the development of the “free” market.

The information available on the foreclosure sub-market is i.a. characterized by the following facts:

- All real estate property subject to foreclosure has been valued by court approved experts.
- Specific market aspects are considered by applying appropriate market adaption factors.
- The highest bid reflects the actual price level at which buyers are willing to enter a given market segment.

Since September 2007, SmartFacts Data Services collects - without any gap - all available data on foreclosure of real estate. Significant effort is undertaken to categorize and structure the data properly, e.g. each property is classified according to a list of currently 54 property sub-types, thus forming a sound base for the fine-grained analysis of data. The data base holds all relevant descriptive data on the property (up to about 70 attributes such as size, age and use of property), as well as the valuation report(s). All legally relevant data, the history of each foreclosure and all information on values – minimum bid, vadium (bid bond), appraisal value, etc. - is checked, analyzed and recorded. In case of a successful foreclosure sale, the buyer, the final bid and the relevant dates are recorded additionally.

The standard dimensions available for analyzing these data are time, the geographic/political structure, the property type, the creditor and the buyer. Of course, all other attributes available can be used as additional criteria for data selection and analysis.

The paper will report on the development of the Austrian foreclosure market within the past years regarding the market size and its structure. For a given region, a more detailed picture will be shown including typical indications on success and duration of the foreclosure process. Typical examples on successful applications of the data-base in the fields of valuation, risk management and optimization of the work-out of non-performing loans will demonstrate the capabilities of the data-base.

What Do Occupants Want? Selected Results from a Field Survey Carried Out in Austrian Residential Buildings and Office Buildings

Siegrun Klug, Susanne Geissler, Edeltraud Haselsteiner, Gabriele Bargehr, Sabine Steinbacher

Keywords: *Gender, Post occupancy evaluation, User behaviour, Diversity, Energy efficiency*

This contribution presents findings from a qualitative and qualitative user survey carried out in residential and office buildings in 2012 and early 2013. Focus is on user behaviour and consumer aspects in highly energy efficient buildings taking into account societal, social, ethnical, and especially gender-related aspects, and analysing the building design concept in comparison with the actual energy consumption during building operation. The survey tackles the day-to-day life of occupants living or working in highly energy efficient buildings. It reveals the attitude of building users concerning energy efficiency standards and innovative HVAC systems, and serves to analyse the impact of occupants' behaviour on building operation and energy consumption.

The development towards plus-energy-buildings (buildings which produce more energy than what occupants consume) causes a change in the role of consumers: consumers turn to active stakeholders, because their way of using the building will be decisive whether the building actually achieves plus-energy status, or not. Therefore there is the need to fully understand the motivations and options for actions of building users, in order to make the new concepts work, such as the concept of plus-energy-building and the concept of smart city as a whole.

The user survey is part of the research project 'GINGER – gender aspects in using building, energy and resources' funded by FFG. The study started in July 2012 and will be completed in June 2014. It is based on the deep analysis of new and existing buildings which comply with ambitious energy-related criteria and belong to a broad range of building typologies (multi-unit residential buildings, office buildings, schools and kindergartens, educational campus). The results of the extensive user survey will contribute to improving communication measures, design process and product development in order to meet users needs in a better way. As a consequence, this will improve the energy performance of buildings during operation.

Market Maturity in China: Exploratory analysis

Qiulin Ke, Karen Sieracki

Keywords: *Real estate market, China, Market maturity, Commercial property market, Market evolution*

With the adoption of an open door policy and economic reform, China began to integrate into the global economy. Marketisation and rapid economic growth in the 1980s at first created a market of user demand for land and buildings from overseas investments and local businesses, subsequently, the development market and investment market have emerged and been formed. After over three decades, the China's real estate market has gone through the stages of experiment, evolution, transformation and maturing. Beijing and Shanghai, the two largest commercial property markets have attracted international investors' interest. Thus, it is becoming increasingly important for investors to develop a better understanding of this largest emerging real estate market. This paper aims to explore perceptions of market maturity and issues of importance for investment in this property market. In this research, we apply the key determinants based on previous work undertaken by Keogh and D'Arcy (1994) in mature market to the analysis of Chinese real estate market, particularly focusing on Beijing and Shanghai. The questionnaire is designed to obtain fair and objective views from property consultancy firms active in Beijing and Shanghai market.

Impact of Flood on Commercial Property Values and Small Scale Businesses in Nigeria: Case Study of Ahoada Town in Rivers State

Moses Baridi Baridoma, Chukuemeka Ekenta

Keywords: *Flood, Commercial property values, Small scale, Small business, Value*

The occurrence of flood is a natural phenomenon the world over. This occurrence has no limit to geographical boundaries or scientific advancement of any nation. Critical flood disaster incidents like the Katrina 2004 in the United States, Pakistan 2012, United Kingdom 2012 and Nigeria 2012 are cases in point on the devastating power of nature. Along with this vagaries of the weather comes some debilitating effects on man and it's surrounding of which the economic wellbeing and shelter is adversely affected. This paper takes a critical look at the occurrence of this natural disaster, it's effect on small scale business and commercial properties in which these businesses are located. A case study of one semi-urban area (Ahoada town) was selected, studied and useful recommendations offered.

The Interaction between the Sub-Market Turnover Ratios and Prices in Taiwan

Mei-Ling Chou

Keywords: *Turnover ratio, Housing price, Panel data, Cointegration test*

This study used the 2000Q1 to 2010Q3 panel data of Taipei City, New Taipei City, and the Tao-Chu area in Taiwan to examine the stationary of the turnover ratio and the lead-lag relation of the turnover ratio and housing price. The fixed effect models showed that the turnover ratio can explain the 12.81 % of the next period price variance, and the model with lower AIC and SBC value than price-volume model. This signifies that the turnover ratio and price model are superior fits for the panel data. The results of the Fisher cointegration test showed that more than one cointegration relation exists in the proposed models. The results of the Granger causality test showed that a strong interaction exists between Taipei City and New Taipei City, which the (t-1) period turnover ratio led the t period price variance. But only the price variance in New Taipei City increased in conjunction with the price variance in the Tao-Chu area.

Conceptual Modeling of Crisis Management in Construction and Real Estate: Case Studies in Lithuania and Belarus

Arturas Kaklauskas, Nikolai Siniak

Keywords: *Construction, Real estate market, Economic recession, Analysis, Crisis management*

Integrated analysis and rational decision-making is needed to mitigate the effects of recession in the construction and real estate sector. Crisis management involves numerous aspects that should be considered in addition to making economic, political and legal/regulatory decisions. This should include social, cultural, ethical, psychological, educational, environmental, provisional, technological, technical, organizational and managerial aspects. This article presents a model for such consideration and examines its composite parts. It provides an analysis of the existing situations in Lithuania, Belarus and the EU in general, and considers their similarities and differences in crisis management. The research involved six stages: (1) comparative description of crisis management for construction and real estate in developed countries and in Lithuania, (2) comparison and contrast of crisis management for construction and real estate in developed countries, and in Lithuania and Belarus, (3) general recommendations to improve crisis management efficiency of construction and real estate in Lithuania and Belarus, (4) specific recommendations for Lithuania and Belarus, (5) multiple criteria analysis of crisis management components and selection of the most efficient life cycle version of crisis management in construction and real estate, and (6) transformational learning and redesign of mental and practical behaviour. Finally, some specific examples from Lithuania and Belarus are detailed in order to demonstrate the application of this research.

Price Signals and Bid-Ask Spreads in an Illiquid Market: The Case of Residential Property in Ireland, 2006-2011

Ronan Lyons

Keywords: *Prices, Housing, Residential property, Ireland*

How legitimate is it to use asking price information in the absence of transactions prices? And how does the gap between the two vary over the market cycle? This paper examines these two issues by comparing two large datasets from Ireland's property market over the volatile period 2001-2012. It finds that the two series are extremely closely correlated, both across space and across time, suggesting that in illiquid markets, or in the absence of transaction price datasets, asking prices offer a very good proxy. Nonetheless, a bid-ask spread exists at any given point in time. By exploiting information on the various stages of a housing transaction, it is possible to estimate the bid-ask spread in the housing market. That spread ranges from +4% at the height of the market in 2007 to -7% in 2010.

Maturity of Real Estate Markets in Sub-Saharan Africa

Nora Rothacher

Keywords: *Maturity, Tanzania, Real estate market, South Africa*

Purpose - This paper aims to determine the maturity of real estate markets in Sub-Saharan Africa (SSA) with focus on the United Republic of Tanzania and the Republic of South Africa. These individual markets are investigated on the basis of market maturity features such as market transparency, connectivity with international capital markets, commercial building offer, domestic and international corporate base.

Design/methodology/approach - The present study is placed on an empirical investigation of the assessments of local real estate experts concerning the Tanzanian and South African real estate market. The survey is based on self-administrated questionnaires regarding the countries characteristics and their real estate markets within categorical rating scales.

Findings - The comparison between nascent Tanzania and emerging or even mature South Africa represents the diversity of the real estate market characteristics in the SSA region. Potential foreign real estate investors are provided with objective information concerning the real estate market activity in order to identify the opportunities and risks in comparison to global investment alternatives.

Research limitations/implications - As Sub-Saharan Africa represents all African countries located south of the Sahara the region is characterized by diverse geographical, socio-cultural and historical conditions. Given that the real estate market maturity indicators cannot be generalized and adapted to any other African country without analyzing the real estate market efficiency the need to enrich future studies was noted.

Originality/value - Benchmarking tools such as the Market Maturity could close the gap between investment opportunities and the absence of foreign real estate investments activity in Sub-Saharan Africa.

Time on Market and Demand for Real Estate (Characteristics)

Daniel Sager

Keywords: *Time on market, Excess supply demand, Natural rate of vacancy, Equilibrium, Demand*

Purpose - Excess supply in real estate markets is easily measured by means of vacancy rates, whereas no such measure exists for excess demand, which is the more interesting situation for investors.

Design/methodology/approach - We use a basic search model for describing the influence of supply and demand on time on market. Similar to the literature on equilibrium vacancy rates, we derive equilibrium time on market using a multiple regression approach. Equilibrium time on market is reached when real prices are stable. Time on market of individual real estate units can then be compared to equilibrium time on market for the market segment considered. This allows the deduction of market situation results (excess supply / demand) for market segments, as well as for individual characteristics of real estate units.

Findings - We find that time on market serves as a useful indicator for excess supply and demand in the housing market, especially in markets where price setting is subject to regulation. Furthermore it is possible to derive an indication of the actual state of demand for the individual characteristics of real estate units.

Research Limitations/Implications: Results are promising, when a clear market typology exists and the characteristics of individual real estate units are well described.

Originality/value - Time on market is mostly known as a measure for liquidity. In given (local) markets it can also serve as a measure for excess demand / supply with much more potential for market research than vacancy rates.

Investigating Property Purchase Power Parity to Explain Economic Behavior

Douw Gert Brand Boshoff

Keywords: *Purchase power parity, Property economics, Property behaviour, Economic expenditure, Income disparity*

Various literature explains the relationship between consumer behavior on property, with specific reference to housing, and the expected wealth effects associated with property investment. This is also shown to affect other consumption expenditure. Real estate is also shown to be the largest single investment of households, with specific reference to housing expenditure. It is expected that this also holds truth for commercial property, with real estate being a critical part of the production process, from manufacturing and corporate services up to marketing and sales. Due to the magnitude of property in the economy, and with the level of labour associated with the production (construction) thereof, it is expected that income level disparity largely influences the cost of property and that the same level of disparity could be seen in property itself. But with the associated wealth effects, the influence of property on other consumption by households, or production by firms, would be different for markets with different levels of income disparity.

This study investigates the relationship between property consumption behavior and the equilibrium level with other consumption, differentiated by levels of income disparity.

In order to investigate this, a property purchase power parity (PPPP) index will be created, whereby a residential PPPP index will be evaluated against different economic variables in household expenditure patterns, and the commercial PPPP index will be evaluated against the differences in input/output tables for the production sectors in the economy.

The equilibrium expenditure level, as well as the production input/output equilibrium, is expected to be related to the property purchase power parity in any country.

Forecasting Turning Points in Real Estate Yields

Sotiris Tsolacos, Chris Brooks

Keywords: *Office yields, Leading indicators, Turning points, Forecast probabilities*

Determining the behaviour of yields remains a significant area of research in the real estate field. The last cycle reminded investors of the impact on values from the sudden and largely unpredictable yield changes. Initially, capital values took a major hit from yield rises but subsequently quick reversals in this path generated investment opportunities in several markets. Early detection of yield movements and existence of advance signals about likely forthcoming adjustments in yields is of significant value to investors and lenders. The main interest in this study is to study the predictive content of leading indicator series for turning points in real estate yields defined, in this study, to be the times when yields compress (begin a downward trend) and rise (start following an upward path). More specifically the objective is to take a forward-looking stance and generate probability signals of imminent movements in yields that will represent actionable information for investors.

The majority of the previous analysis of yield movements is focused on regression analysis and traditional time-series models such as ARIMAs and vector autoregressions. Such models provide the basis for point forecasts for yields which to a degree can pick up turning points. The present study employs a dichotomous-variable methodology. A probit model, which is known as the natural model to use for the prediction of turning points, is constructed to interpret signals from leading indicators for possible yield swings. The leading indicators represent economic leading indicators, financial and other spreads and expectations-sentiment data. Apparently this approach differs from the previous work on yield forecasting given the focus on calculating turning point probabilities. However the probit based outcomes complement the analysis and predictions from other modelling and forecasting methodologies.

Prime office yield data for Munich, London West End, Paris CBD and Madrid are used. The selected office centres aim to test the probit approach with leading indicators in geographies which have had different experiences during the eurozone sovereign debt crisis.

The evaluation of the resulting models takes place with the commonly used criteria applied to binary models. However, the probability forecasts will be assessed explicitly in the context of the realised yield swings in the recent cycle. Finally the study provides forecasts for turning points outside the sample period.

Market Failure in the Amsterdam Office Investment Market

Henk J. Brouwer

Keywords: *Office market, Retail investors, Investment yields, Risk analysis, Market failure*

The Amsterdam office investment market is not fully efficient. It is slow to incorporate essential new information. The main problem of the Amsterdam office market is long-term vacancy clearly higher than natural vacancy. Total vacancy soared from 250,000 m² in 1998/1999 to 1.5m m² in 2004. Recently, vacancy moved around 1.6m m². This represents almost 20% of the office stock. In many suburban areas vacancy is 25% or higher. Nevertheless, construction of new office is continuing as there is steady demand for modern office space. In fact, vacancy of newly built offices is low, while the vacancy of older offices is rising to unprecedented levels. It proves that new construction gives rise to a filtering down process. Older offices are often difficult to let on conventional lease terms. New offices can move to the secondary market, sometimes after only five to ten years.

Interestingly, this risk for office investors is not reflected in investment yields. Since the end of the 1990's, reasonable expectations have changed completely, but yields in Amsterdam remain lower than in elsewhere in the Randstad area. Investors should consider that their properties will only for a relatively short term belong to the prime office market. However, it is fully unclear how they value this risk. We postulate that this remarkable situation can be explained by the fact that most capital for office investment is supplied indirectly. There are two main sources of capital: German open-end funds and Dutch private partnerships. Retail investors subscribe to these funds and partnerships without fully understanding the risks of real estate investment. Subsequently, the funds are under pressure to invest their liquidities. If our analysis is correct, a solution is near. Several German open-end funds will be liquidated and many Dutch partnerships have serious problems. The amount of money available for investment in offices in Amsterdam is falling and as a consequence, yields will rise to a level that better reflects the risks.

Residential Housing in the Spatial-Social Context of Home-Based Nursing and Care in Austria

Birgit Trofer, Bernd Seeberger

Keywords: *Elderly, Residential housing, Person-environment fit, Barrier-free homes, Home-based nursing and care*

Purpose - Given age-related dwindling of competencies and eventual necessity of home-based nursing care in the home of elderly people, this study shows the spatial and social implications with reference to the person-environment fit.

Design/methodology/approach - A qualitative approach has been chosen in order to conduct a penetrative single case analysis whose multiplicity permits a socially realistic description of the specific research context. Eleven members of staff from six different care organisations based in Austria were asked about these circumstances within the framework of expert interviews, supported by interview guidelines and recorded with an electronic device. The transcribed interviews were analysed using Qualitative Content Analysis according to Mayring (2008).

Findings - The results emphasise the special significance of the person-environment fit for the context of home-based nursing care for the elderly and the particular demands made on their homes. Facing decreased personal competencies, especially missing barrier-free elements in the dwelling have been criticised. The recommendation of home adaption measures, improvisation and the refusal of the assignment of home-based care belong to the strategies the research group undergoes. Furthermore, the results show an enhancement of the person-environment fit. Besides proving room for living, the dwelling has to fulfil further functions because it is now the epicentre for the provision of home-based care. The results illustrate that attention should be directed on the private and individual context of the person.

Originality/value - The study at hand, building on existing research results, adds the perspective of health care workers with regard to home-based care of the elderly.

Elderly and Housing Costs: Constraints in Mobility on the Housing Market

Marieke Leussink, Jos Smeets

Keywords: *Mobility on the housing market, Elderly, Housing costs, Owner occupied sector, Social rental sector*

The Dutch government stimulates elderly people to live independently as long as possible. For that purpose Dutch housing associations are charged with the duty to accommodate elderly people suitable. They are not only delivering services to their own tenants at higher age, but also trying to attract elderly people with a higher income from the owner occupied sector. However, it turns out not to be easy to tempt elderly home owners to move to the rental sector. One of the reasons is the difference in housing costs.

The housing costs of households are not only set by the price of rent or mortgage but also by dwelling-related costs like energy and water. The accumulation of housing costs and costs of energy, the total housing cost, differ not only between the owner occupied sector and the rental sector but they also vary according to the stage of the life cycle of these households.

Especially the housing costs of elderly residents are rather divergent. Are the housing costs of elderly tenants often comparable with other households in the rental sector, the cost of elderly home owners are significant lower. Lower than the costs of other households in the owner occupied sector as well as lower than the total housing costs of elderly tenants.

The paper is based on an extensive survey on housing costs among elderly households in the region of Eindhoven. It explores the housing costs of two types of elderly households in both sectors: the 'young elderly households' (55-74 years) and 'elderly households' (>75 years) and tries to explain the difference.

It also discusses the consequences of the difference in housing costs between these two forms of tenure for the possible shift from the owner occupied sector to the social rental sector.

Single Households and Housing Costs: Free Choice or Market Constraints?

Marieke Leussink, Jos Smeets

Keywords: *Single households, Housing market, Housing costs, Housing policy,*

The Housing costs of households are diverse. Especially the costs of single households are often high. Single households occur in any stage of the life cycle, among starters, divorced couples, widows or widowers. For some of them the costs pass 40% of their income and this percentage will increase in the near future. As a single wage earning household they often consume a lot of dwelling space. As a consequence of this the total housing costs are high. If this situation remains unchanged, in the future some of them can hardly afford their housing costs.

The situation is even more urgent because the amount of single households in the Netherlands is increasing substantially the coming decades.

This paper is based on an extensive survey on housing costs among households in the region of Eindhoven. The question 'Are housing costs of singles high as a consequence of the overconsumption of dwelling services or as a consequence of the constraints on the housing market?' comes up.

After exploring the problem of housing cost for different single households in different housing situations (tenure, building period, energy performance of the dwelling, dwelling type, etc.) suggestions are made to control or reduce their housing costs in the short and long term.

Mobility, Housing Decisions and Economic Status of the Elderly in Taiwan

Shu-Mei Chen, I-Chuan Yang

Keywords: *The elderly, Economic status, Mobility, Housing tenure decision*

The elderly suffered the uncertainty of health, losing spouse or wealth accumulation as they aged. In aging and low fertility society, how to increase elderly financial resources and satisfy their needs for everyday lives so that they can age with dignity is a very important issue. The homeownership rate is almost 85% or more in Taiwan. Some elderly households are housing rich but cash poor, the housing wealth could be converted to the living expense if they want. This study would like to explore the relationships between the housing tenure decisions after moving and economic status for the elderly. Both the economic financial needs and bequest behavior would have impacts on the housing decisions for the elderly. This study employs the multinomial choice models and the "Survey of Health and Living Status of the Middle Aged and Elderly in Taiwan".

The Effect of Further Liberalisation in the Healthcare Industry on the (Healthcare) Real Estate in the Netherlands: A Comparison to Germany

Ivonne Lim

Keywords: *Healthcare, Transformation, Seniorhousing, The Netherlands, Europe*

Up until recently, there have been two kinds of elderly living in the Netherlands: 'care complex' (light care) and nursing complex (intensive care), mostly located outside the city. Elderly could have been living there and receiving care from a care institution (almost) for free, if being referred by a special indication centre for healthcare. The care institution has been financed by a special public funding (for healthcare including living) that comes from the working citizens.

At this moment, due to the shortage of the budget, the living subsidy for the light care patients is being stopped. (Elderly) care patients have to pay the rent for the living themselves. As a result, elderly are free to decide where and how they want to live. The contemporary care complexes are out and various new living shapes have come to existence like patio, domotica and senior living. But there is also a 'lifetime proof apartments complex', a trendy new shape of living, where younger and elder citizens can live for a lifetime. These new complexes are mostly located inside the city, near by healthcare, shopping and culture facilities.

This (on-going) research analyses the impact to nursing complexes, when the living subsidy of the intensive care patients are also being revoked. Will nursing complexes also disappear and be replaced by many shapes of living like care complexes? Which shape of living will make the biggest chance in the future market of (care) real estate? Interviews have been held with economists, real estate investors, healthcare experts and retirement experts to find out what their long term visions are. Also a survey has been conducted to find out how and where the potential care consumers want to live.

Many kinds of living will come into existence, but the lifetime proof apartment complexes will have the biggest chance to grow in the new market of (care) real estate.

Are there Rational Bubbles in REITs? New Evidence Using a Complex System Approach

Maximilian Brauers, Matthias Thomas, Joachim Zietz

Keywords: *REITs, Rational expectation bubbles, Complex systems, LPPL model*

This study applies a complex systems approach to test for the presence of rational bubbles in the Equity REITs market. The applied model is based on theoretical implications of the evolution of prices under rational bubble regimes. The advantage of the approach is twofold. The model is able to detect rational bubbles while they rise and to predict the most likely time of their collapse. We apply the model to daily price data on U.S. Equity REITs from 1989 to 2011. Our findings suggest the existence of a bubble for the period of 2003 to 2007. Tests for sub-markets reveal that the bubble developed in the Residential REITs market, but not in the Office REITs market.

Property Market Modelling and Forecasting: A Case for Simplicity

Arvydas Jadevicius, Brian Sloan, Andrew Brown

Keywords: *Equifinality, Modelling, Property, UK*

The paper investigates whether complex property market forecasting techniques are better at forecasting than simple specifications. As the research and initial modelling results suggest, simple models outperform the more complex structures. It therefore calls analysts to make forecasts more user-friendly, and for researchers to pay greater attention to the development and improvement of simpler forecasting techniques or simplification of more complex structures. Further planned research will present an alternative simple modelling approach, which was successfully employed by economists, helping to achieve greater predictive outcomes.

Measuring Dwelling Price Changes in Poland with the Application of the Hedonic Methods

Radoslaw Trojanek

Keywords: *Housing market, House price indexes, Hedonic methods, Regression analysis*

The main aim of the paper was to identify price changes in the secondary housing market in the years 2008-2012 in the biggest cities in Poland. This aim determines the scope of the subject, which includes price changes in the secondary housing market, relating both to full and limited ownership rights to private accommodation. This research refers only to dwellings located in multi-family buildings. Such choice was determined by two factors. Firstly, the majority of dwellings are located in multi-family residences (dwelling blocks – up to 90% in big Polish cities). Secondly, houses are characterized by great differentiation regarding both quantitative and qualitative features, which requires the database to include the appropriate information about each property in order to construct house price indexes. On the other hand, the Polish secondary housing market is greater than the primary market (approximately up to three times) taking into consideration the number of transactions.

The paper is divided into four parts. In the first part the idea and meaning of house price indexes are analyzed. Then, the transaction and asking prices are described. In the following part, the hedonic methods are presented. The fourth part of the paper contains the analysis of dwelling price changes in the five biggest cities in Poland (Cracow, Lodz, Poznan, Warsaw, Wroclaw) in the years 2008-2012.

After Sales Marketing Strategies of Real Estate Companies: An Empirical Study

Stephan Kippes

Keywords: *After sales marketing, Real estate marketing, Customer relationship management, Marketing*

The Lehmann bankruptcy, the financial crisis in Greece and the ongoing problems of the Euro brought about a situation in Germany, in which people started to shift their assets into properties. In addition to an undersupply of properties in the major cities, the situation is getting increasingly severe, because owners of housing stock in these locations tend to stick to their properties, because they see a lack of other highly secure options to reinvest their money as they see properties as a safe haven in uncertain times. Over the last three years it therefore became more and more difficult for real estate companies to acquire new properties in the major cities for selling, and letting. In contrast to this there is still a substantial oversupply of housing stock in the countryside.

In this situation the purpose of this paper is to examine the use of after sales marketing, and customer relationship management (CRM) by real estate companies as a means to acquire properties. This paper is based on a new survey from spring 2013. This study will provide a greater understanding of the attitudes and strategies of real estate companies in relation to after sales marketing issues.

Can Perceptions of Property Market Volatility and Optimism Be Affected by Message Framing and Market Familiarity?

Deborah Levy, Catherine Frethey-Bentham, Changha Jin

Keywords: *Message Framing, Market optimism, Market, Volatility, Market familiarity, Expertise*

Extant literature from a variety of disciplines note that the perceptions of individuals are influenced by context or message framing. In general, a frame can be regarded as some combination of the beliefs, values, attitudes and mental models that people adopt to apprehend and comprehend a situation. The frame significantly affects how individuals infer meaning and hence understand a situation. Slovic (2002) studying affect heuristics found that these occur when a decision maker is influenced by the emotional context of information. With the exception of Jin and Gallimore (2010), little research has been undertaken into this phenomenon in the context of property markets. They found that framing can act to alter people's market perceptions.

There is also evidence from the property literature that market familiarity can affect property decision making (e.g. Diaz and Hansz (2001), Diaz, Gallimore and Levy (2004)). This study aims to examine both the effect of message framing and how this may be affected by market familiarity.

An experiment is undertaken with data collected from 181 participants drawn from first, second and third year students completing a Bachelor of Property degree from The University of Auckland, New Zealand. The findings demonstrate not only that negative framing of commercial property market information increases the perceptions of greater market volatility and decreases optimism within the market. It also finds the impact to be greater for unfamiliar markets.

The Swedish Case: Mortgage Preferences Among Home Owners

Maria Hullgren, Inga-Lill Söderberg

Keywords: *Mortgage, FRM, Consumer, ARM, Sweden*

The purpose of this paper is to investigate consumer characteristics that influence Swedish consumers' mortgage rate decisions, such as the choice between an adjustable rate mortgage (ARM) and a fixed rate mortgage (FRM).

Data were collected in a randomised survey of the Swedish population in 2012. Through binary logistic regression, the effects of loan-to-value (LTV), age, education, income and risk aversion on household mortgage decisions are investigated. In addition, consumers' ability to handle sudden mortgage rate increases are examined together with five attitudinal questions on factors influencing the mortgage decision.

The results show that higher LTV, a lower level of education, higher age, lower income, high risk averseness influence Swedish consumers to choose FRMs, while having trouble handling interest rate increases promotes the choice of ARMs. Four of the five attitudinal statements that was tested non-directional did make a statistically significant contribution to the model.

This paper tests a number of characteristics in predicting consumers' mortgage choices, emphasises the importance of loan takers' ability to cope with sudden mortgage rate increases, highlights the importance of attitudes in understanding consumers' financial choices and elucidates the Swedish case.

How Customer Perceived Value and Perceived Risk Influence? The Purchase Intention and Willingness to Pay for 30-Years Leasehold Luxury Residences in Bangkok

Kitima Kritiyachotipakorn, Supeecha Panichpathom, Jittaporn Sriboonjit,
Niti Rattanaprichavej

Keywords: *Leasehold, Willingness to pay, Customer perceived value, Perceived risk, Purchase intention*

The duration of the lease may be different, depending on the country. In Thailand, the maximum duration of the long-term lease for residential is 30 years. Even though the term of long lease are very restrictive, 30-years leasehold luxury residential properties in the prime area of Central Bangkok are well-received in the market.

The purpose of this study is to propose a conceptual framework to explore the influences of multidimensional roles of customer perceived value (CPV) and perceived risk toward both purchase intention and willingness to pay (WTP) for 30 years luxury leasehold residences in Bangkok. The components of CPV are developed based on PERVAL model including function, price, emotion and social value. While the components of perceived risk include performance risk, financial risk, psychological risk and time risk.

To complete the purpose of this research, quantitative research approach with the use of questionnaire is employed. The main target respondent is Bangkok residents (both Thais and foreigners) who have heard about or visited 30 years luxury leasehold residences. Three hypotheses are developed: H1: CPV positively influences the purchase intention; H2: Perceived risk negatively influences the purchase intention and H3: Purchase intention positively influences WTP on 30-year leasehold luxury residences. Cronbach's alpha is used to determine the reliability and regression analysis is employed to test hypothesizes.

The results will provide an important source of information for luxury leasehold marketers to develop effective marketing strategies that meet customer needs.

Social Networks on the Web in Real Estates in Portugal

Teresa Florentino, Joaquim Casaca

Keywords: *Social networks on the web, Real estate mediation, ICT in real estate, Marketing and communication*

This article aims to analyze different types of Social Networks, its purpose, success and evolution, and also its advantages for people and businesses in particular in Real Estate mediation in Portugal. This article includes some research related to the use of Social Networks and its relationships with Real Estate. First the social networks and issues related to investment and Marketing relations are analysed, structured and classified, and it is also analysed the Real Estate business. Then there are presented some statistics based on data according to Social Networking use in Real Estate companies in Portugal and in particular, the use of Facebook. Finally, some conclusions of this study are presented and highlighted the main limitations of this research as well as some recommendations for future studies. According to statistics made by Real Estate companies in Portugal, in a universe of 3231, and given a sample of about 500 companies in the Real Estate business, 15% have their own sites and in these, Facebook subscription is over 12%, 4% on Twitter, 1% on LinkedIn, and no more than 1% on YouTube. By Adding and adapting technologies and new trends like Social Networks and using the Internet, we can expect a better understanding of consumers and new ways of doing business and new business opportunities. There are few articles referring to Social Networks and Real Estate and in Portuguese reality this is even more uncommon. This kind of researches should be more frequent and compared, when possible, with other countries and other situations.

Gender Representation in the Real Estate Industry

Karin Staffansson Pauli

Keywords: *Gender, Real estate industry, Organization, Images*

Purpose - This study contributes to our understanding of gender and the real estate industry. The purpose is to examine how annual reports contribute to the gendering of the real estate industry in Sweden. To fulfill the purpose, representations of gender in financial annual reports in the real estate industry are analyzed.

Design/methodology/approach - A critical theoretical perspective is applied. The empirical data of the study consists of representations of gender in photographs in financial annual reports. The sample consists of annual reports of real estate companies with different business concepts. The annual reports are seen as social constructs, that is to say they are seen as human products expressing corporate identities.

Findings - Having analyzed the reports it becomes clear that the different organizations seem to show different awareness regarding representations of gender in the photographs; thereby different corporate identities are expressed, partly due to different business concepts.

There are stereotypical images of women and men that serve to maintain the hierarchical gender order in the industry. The token position -being one of the few women in the real estate industry is also used. Women are underrepresented in the corporate identity and the heterosexuality is also preserved.

Originality/value - This kind of study is not previous made in the real estate industry.

The Use of Apps for Shopping Malls: A Market Overview for Austria, Germany and Switzerland

Veronika Lang, Peter Sittler

Keywords: *Application, Augmented Reality, Smartphones, Shopping mall center, Real estate marketing*

This research paper focuses on the appliance of real estate applications (RE-Apps) concerning apps in the field of shopping malls. For shopping malls apps are used as a marketing instrument and there are several RE-Apps concerning indoor mapping and orientation in the existing building. Apps are small programmes on smartphones or tablets, which are classified by their usage. A sub-classification is made for the ability of Augmented Reality (AR) functions.

In the German speaking region only a view shopping malls offer an application for their customers. Our paper gives a market overview of which shopping malls in Austria, Germany and Switzerland have launched an app. Furthermore a comparison of the different app functionalities is given. First results have been shown at the International Jubilee Conference of the University of Architecture, Civil Engineering and Geodesy (UACEG) conference 2012 in Sofia, Bulgaria.

The field of applications for real estate is not yet explored, especially the usage of apps for shopping malls. The work is based on extensive literature research providing a methodical comparison of applications available and qualitative interviews with several shopping mall marketing managers in Austria. Based on the results of the research the paper covers a structural and technological overview and a market potential analysis of apps for shopping malls with a visionary conclusion of expected future developments is given especially in the field of AR.

Importance of Social Networks in Real Estate Brokerage

Yuen Leng Chow, Seow Eng Ong

Keywords: *Social networks, Culture, Brokerage, Client network, Agent performance*

In this paper, we aim to analyze the importance of traditional social networks in selling real estate. In recent years, the use of various social networking sites like FaceBook, LinkedIn is ubiquitous, to the extent that these social networking sites are now commonly used as a tool by real estate brokers to expand and maintain their client network. However, the use of social networks as a link to establish business opportunities is not new. In a business context, business associations, university alumnus gatherings, cultural associations, country clubs, etc., are avenues where business contacts can be formed. Thus, in this paper we are interested in exploring the question of whether a more 'traditional' social network has an impact on a real estate broker's sale performance. More specifically, we are interested to see whether 'culture' affects sales performance.

In the extant literature, there is a rich literature on real estate brokerage that analyzes agent's performance, listing and selling of the properties through the multiple listing services, the impact of incentives (commission) on agent's performance, and the asymmetric problem for a property sold by owners and for a property sold by agents. There are also papers that analyse, from an information angle, the impact of the use of internet on sales performance. In this paper, we look into the question of whether real estate brokers close more deals with people of their own cultural background. We intend to analyse this question by employing both a regression and probit model to examine the significance of a common cultural background on a real estate broker's sale performance.

Can US Real Estate Mutual Funds Beat the Market? New Evidence

Yuan Zhao, Bryan D. MacGregor, Rainer Schulz

Keywords: *Bootstrap, Index benchmark, Performance evaluation, Real estate sector fund*

This paper examines the performance of active US domestic real estate mutual funds (REMFs) relative to a passive benchmark, both before and after fund managers' compensation. We consider both the REMF sector as a whole, and also individual funds, separately against stock market and real estate market benchmarks. For individual funds, a cross-section bootstrap is used to separate fund managers' genuine skills from luck. We find that the REMF sector as a whole can beat a real estate benchmark but this is cancelled out by fees; and we find that the REMF sector cannot beat the stock market even when fees are not taken into account. For individual REMFs, we find no outperformance against the stock market; and we find genuine stock-picking skills, net of fees, only for a small number of funds in the extreme right tail, relative to the real estate benchmark.

The Intra-Industry Information Transfers: Evidence Based on REIT Privatization

Vivek Sah

Keywords: *REIT, Contagion, Information transfer, Going private*

Equity market timing theory suggests the practice of issuing stocks at high prices and repurchasing at low prices. According to the equity market timing theory, the sharp decline in REIT shares creates a unique buying opportunity as many high-quality REITs may trade well below their liquidation values. It basically suggests a positive price change for REIT announcing going-private decision. Research in intra-industry information transfers studies whether unexpected shocks from a particular firm are propagated to the other firms in the same sector. The proposition of contagion predicts that the information about one particular firm suggests the same problem for the other firms (Lang and Stulz(1992)). The rationale is that due to the similarity between firms within the same industry, other firms could be affected in the same direction (i.e. the same direction of price changes) by the same information. REIT sector provides an interesting setting to examine contagion effect. In real estate market, properties are not frequently traded. Thus the portfolio value is not mark-to-market. Thus, we expect contagion effect exists in REIT market. Specifically, we expect a positive price change for other REITs.

Besides contagion effect, competitive effect may also exist in the market. Relevant to this study, the proposition of competitive effect theory predicts that the exit of public market of one particular firm will increase the relative competitive position for the other firms in the same industry. Thus in association with contagion effect, we expect the price change magnitude might be even bigger for REITs focus on the same property type as REITs announcing privatization.

The majority of the literature in this field is the study on contagion effect of financial institutions, within nation and among nations (Forbes and Rigobon(2002)). However, it has been argued that information transfer effect may be different due to various characteristics of different industry (Erwin and Miller(1998)).

Lang and Stulz(1992) examine contagion effect from bankruptcy announcement. They find that bankruptcy announcement brings out a statistically negative impact on the portfolio value of competitors with the same Standard Industry Code (SIC). The negative impact is even significantly greater for highly-leveraged industries and for industries with highly correlated stock returns. Further, their study indicates that industries with high concentration, the effect tends to be positive.

Assessment of Hail Risk on Real Estate: First Estimations with Climate Data

Jens Hirsch, Thomas Braun, Sven Bienert

Keywords: *Natural hazards, Spatial analysis, Hail risk, Structural damage, Risk modelling, Insurance*

Every year natural hazards and especially hailstorms cause damages to the building stock amounting to millions or even billions of Euros in Germany. The accelerating climate change involves an increasing amount of (convective) energy within the atmosphere with adherent additional damage issues. These events lead to ascending running costs as a result of adjusted insurance costs and insurance companies are already reacting by forcing measures of adaption. Generally the actors of the housing and real estate property industry suffer by a lack of solid information on identification, analysis and assessment of climatic risks. Taking into account this additional information is of immense importance not only for their investment decisions but also for the insurance companies and regional planning authorities. Official building standards do not regard local hail hazard in their guidelines yet and real estate valuation does not take potential damages into consideration.

This paper presents the first approach of a regional hail risk assessment for real estate the property market. The model uses empiric radar measurements of the German Weather Survey, which were filtered with lightning data in order to preclude false echoes. These data were analyzed with extreme value statistics to derive local hazard functions. The hazard function's output parameter (radar reflectivity) was transformed to the input parameter of available damage function, which establishes the functional relation between hazard and damage. The assessment of potential risks includes the estimation of a building's vulnerability (building-specific damage functions) in order to identify the monetary damage in terms of an annual expected loss.

Performance of Equity REITs: Does a Skew Factor Matter?

Quan Gan

Keywords: *Skewness, Performance, REIT, Factor model, Asset allocation*

The paper develops a Bayesian skew factor model to measure the return-risk performance of publicly traded equity real estate investment trusts (REITs). We show that the skew factor contributes in all REITs' returns. The skew factor significantly impacts the performance measurement of REITs portfolio and this factor is different from the market return factors (REITs index and stock market index) and Fama-French three factors. We compare the skewness-aware asset allocations (Low, Pachamanova and Sim 2012) using typical non-parametric method and our skew factor model. We find that the skew factor model provides better out-of-sample performance comparing to its non-parametric counterpart.

Bridging the Infrastructure Investment Gap: Re-Examining the Case for Partnership Based Procurement Post-Financial Crisis

Anil Kashyap, Jim Berry, Martin Haran

Keywords: *Partnerships, Finance, Investment, Infrastructure, Emerging markets*

Infrastructure provision is a multidimensional problem for governments and businesses globally. Decades of under-investment within developed economies combined with an insatiable appetite for infrastructure within emerging economies has culminated in an infrastructural deficit estimated at circa US\$50 trillion over the next 25 years (Ernst and Young, 2010). The scale of the global infrastructural investment challenge markedly exceeds public sector capacity. Indeed, a central theme of national government policies pertaining to infrastructure provision has been premised upon partnership based procurement. Central to the expansion in partnership-based procurement has been the international rollout of the Public Private Partnership (PPP) model, which has now been adopted in more than 40 countries around the world. Within emerging economic markets partnership models are being widely used in the development of transport related infrastructure including roads and ports (air and sea) as well as energy provision. However, investors in complementary sectors such as health and education are using core infrastructure to hedge risk relative to the returns offered in traditional asset classes.

This paper utilises Infrastructure Journal (IJ) data to analyse the financial structure (debt-equity ratios) and risk-return characteristics of partnership models globally across the different stages of the infrastructure provision at pre-development, development and post-development stages. Furthermore, the paper will examine key market dynamics within developed nations vis-a-vis emerging economies in terms of the volume of deals reaching financial close as well as highlighting trends in terms of the cost of debt pre and post financial crisis and how this has served to impact on deal size.

Urban Land Readjustment as a Strategic Tool for Urban Redevelopment: Simulating Negotiations between Landowners

Datuk Ary Samsura, Erwin van der Krabben

Keywords: *Urban land readjustment, Land and property development, Negotiation experiment, Game simulation*

The Dutch national government has recently launched a national pilot program to test the effectiveness of urban land readjustment as a strategic tool for urban redevelopment projects. Urban land readjustment has been defined as the consolidation of adjoining plots 'by a government agency for their unified planning, servicing and subdivision with the sale of some of the new plots for cost recovery and the redistribution of other plots to the landowners' (Archer, 1989: 307; cited in Adams & Tiesdell, 2013: 274). Urban land readjustment – similar to the more common agricultural land readjustment, but now applied in an urban context - has been widely adopted both in European countries (but not in the Netherlands) and in Asian countries (Hong & Needham, 2007). In Van der Krabben & Needham (2008) we have argued the theoretical case for applying urban land readjustment in the Netherlands and elsewhere. Adams et al. (2001) have also proposed urban land readjustment for the UK, termed an 'urban partnership zone'.

Urban land readjustment can be considered as a type of self governance, based on close cooperation between land and property owners in a certain area. In this paper we present the results of a simulation game regarding the negotiations that will take place between the land and property owners to decide for urban land readjustment. Game theoretical modeling is applied to test under which conditions land and property owners are willing to cooperate in an urban land readjustment project.

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Impacts of Construction Events on the Project Equity Value of the Channel Tunnel Project

Abraham Park, Chen Yu Chang

Keywords: *Infrastructure development, Project finance, Construction, Event study, Cost of capital*

With the growing strains on public resources, many governments in recent years have turned to the private sector for infrastructure project financing. The special purpose vehicles (SPVs) taking such project usually has a 2 stage business model: a construction stage followed by an operating stage. However, the project risk in stage 1 is very high, and in most cases, the impacts of specific construction events on project risk and capital cost are unobservable due to lack of informational transparency. Eurotunnel (the Channel Tunnel project) is unique in that the share price data for the entire construction period is publicly available. The goal of this paper is to contribute to the measurement and assessment of project risk by providing empirical data on the impact of various events that occur during the construction phase of the project finance company's life. Using the event study methodology, our study shows that: (1) during the construction stage, efforts to better manage the interests and incentives of contractors produce more significant positive impact from investors than efforts for cost containment; (2) during the construction stage, meeting the project deadline is a higher investor priority than containing construction cost; and (3) once the construction phase is complete, the investors' priority then becomes the overall cost and the impact of construction events on the expected returns from investment. Finally, the level of risk and the potential conflicts of interest that arise during the construction phase of a mega infrastructure project are such that turning to IPOs to provide equity capital may not be appropriate.

The Underpricing of Infrastructure IPOs: Evidence from China

Qile Tan, Bill Dimovski

Keywords: *Infrastructure, China, Initial public offering, Underpricing*

This study investigates the underpricing of 154 infrastructure IPOs in China from 1993 to 2012. It follows infrastructure IPO studies in Australia and India which report average underpricing returns to subscribers of 3.5% and 25.4% respectively. The average underpricing return for Chinese infrastructure IPOs is substantially higher at 91.1% but interestingly substantially lower than the underpricing of Chinese IPOs generally. The issue size, the offer price, the time delay to listing and the broad market return from the date of the prospectus to the date of listing are helpful in explaining the underpricing of Chinese infrastructure IPOs. Government ownership retention and underwriter reputation do not appear to have much explanatory power.

Investment in City Development: Planning and Evaluation Criteria

Anna Wojewnik-Filipkowska

Keywords: *Decision making, Stakeholders, Investment management, Multicriterial project analysis, Public planning*

The process of cities' development and renewal applies to changing needs of local communities and individuals. Its' general aim is sustainable city development. The subject of research is the process of planning and evaluation criteria of investments, which are an integral part of the development and management of modern city. The public sector initiates or carries out these investments while the private sector is still an important partner, participant in the decision-making process, and finally also the recipient. The nature of these investments is hybrid. There are social investments with commercial aspects and commercial investment with social aspects. Therefore, the investment is justified both by financial and non-financial factors. The starting point to make a breakthrough in the methodology of investment projects evaluation is accurate and complete identification of the benefits associated with the project. Therefore, the ultimate objective of the research is to design planning stages of mentioned investments with the evaluation criteria of such 'hybrid' investments in terms of their rationality. In the first part, I will characterize a new model of rationality. Then, I will propose the planning steps. Finally, I will determine the criteria for the investment projects evaluation in urban development and renewal with respect to the type of the investment. I assume that the rationalization of investment decisions in the management of urban development requires improvement of planning process, including and investment evaluation criteria. The research is based on literature review and case studies, as confrontation of theory with practice.

Property Rights and Infrastructure Developments: Theory and Experience

Noriko Ashiya

Keywords: *Property rights, Infrastructure developments, Compulsory purchase, Compensation*

In literature, it is accepted as fact that compulsory purchase and compensation problems are associated with the level of infrastructure development; this paper will try to link these compensation problems and the level of infrastructure development. For this purpose, firstly, it will formulate the benefits accrued to society as a result of various developments; it will use the model to theoretically investigate the condition under which those benefits will be maximized. Secondly, it will employ a data set from Japan as one of the examples of developed markets to reveal the empirical facts and problems on infrastructure developments in countries with quite high levels of inventories of roads, railways or means of transportation. Theoretical findings will be consistent with price premiums in cases of compulsory purchase, where loss of ownership, livelihood, or violation of right of land owners become issues; they also will reveal an issue concerning the optimal level of inventories for infrastructure, which this paper will also examine in the second part.

Performance and Significance of United Kingdom Listed Infrastructure in Mixed-Asset Portfolio

Joseph Bamidele Oyedele

Keywords: *Portfolio diversification, Listed infrastructure, Efficient frontiers, Inter-assets correlation, Portfolio sharpe index*

Purpose - This paper examines the performance of UK listed infrastructure over a unique investment period covering the global financial crisis and investigates the significance of UK infrastructure in a multi-asset portfolio. The analysis reveals the level of correlation of UK infrastructure with other major assets classes and substantiates the potential diversification benefits of including UK infrastructure within a mixed asset portfolio.

Research Design and Data - The study uses monthly investment return indices obtained from Thomson Reuters DataStream over a ten year period (2001-2010). The paper analysed the UK listed infrastructure investment return characteristics including average annual return, annual risk, Sharpe indices, mean variance portfolio and maximum return portfolio and computes the efficient portfolio frontiers using the risk solver optimization tool.

Research Findings - The performance results show that UK infrastructure produced better risk-return trade-offs than those of UK property, private equity, hedge funds and UK stocks over the period 2001-2010. Overall, for the ten year period, UK Water was the best performing asset class outperforming all other asset classes having the highest Sharpe ratio of 0.75.

Research Implication - Using the monthly return indices over the ten year period, UK listed infrastructure investment was found to play a consistently significant role in the optimality of mixed-asset portfolios. However, the diversification benefits were more return enhancing than risk reducing, offering investors a platform for matching investment objectives with expectations resulting from a better understanding of the characteristics of UK listed infrastructure investments.

Originality - As investors seek better understanding of the performance of infrastructure across the globe, with most previous studies focusing on Australia, US and China, the paper makes significant contribution to the body of knowledge by focusing on UK, a promising investment space for infrastructure industry. Also, given the debate surrounding the emergence of infrastructure as a separate asset class, the paper particularly projects the potential benefits of investing in UK listed infrastructure, offering investors a distinctive platform to launch into a vibrant asset class.

A Spatial Hedonic Analysis of the Value of the Greenbelt in the City of Vienna, Austria

Shanaka Herath, Johanna Choumert, Gunther Maier

Keywords: *Greenbelt, Open space, Urban amenities, Hedonic price valuation, Spatial econometrics*

The continuous expansion of urban areas at the expense of rural and natural areas should understandably increase the desire for green amenities among urban populations. In this context, greenbelts become an important component in the modern city landscape. We apply the hedonic price method in order to determine whether the implicit value of greenbelts is capitalized into real estate prices in the city of Vienna (Austria). We improve the traditional model using spatial econometric techniques and test different spatial models, namely the spatial lag model, the spatial error model and the spatial Durbin model. Evidence suggests strong support for the spatial Durbin model in the context of our data. We find, in particular, that distance to the greenbelt is an important factor that explains residential choices of households: while the CBD exerts a centripetal force, the greenbelt, on the contrary, exerts a centrifugal force.

Behavioural Real Estate

Diego Salzman

Keywords: *Behavioural decision making, Market participants, Social determinants, Home ownership, Behavioural biases, Property investment appraisal*

The behavioural approach to decision making under uncertainty combines insights from psychology and sociology into economic decision making. It steps away from the normative homo economicus and introduces a positive approach to human decision making under uncertainty. The aim of this paper is to provide an overview of the main themes in the behavioural real estate literature from the perspective of different market participants. It can be concluded that there seems to be general agreement that behavioural studies can help explain the inefficiency of real estate markets, but a large component of behavioural decision making in the property markets seems to be undiscovered.

The Residential Value of Energy Efficient Housing

Marie Wahlström

Keywords: *Housing, Energy consumption, Hedonic pricing, Energy efficiency, Residential preferences*

In line with directives from the European Union, member countries have adopted measures aiming to reduce the energy use in the real estate sector. In Sweden, sellers of residential housing have to provide potential buyers with an energy certificate with detailed information on energy performance and consumption. The idea is to make users more aware of their energy consumption and of different ways to reduce it.

This paper studies to what extent the energy certificates for single-family house owners in Sweden, introduced in 2009, seem to work in the way expected. More specifically, the following questions are addressed:

- What role does preferences and household characteristics play for energy consumption as compared with the energy related attributes of their house? E.g. does energy consumption depend more on technical installations such as heat pumps or is household composition a stronger influencer?
- Is there a willingness to pay more for houses with “better” energy performance? How large is this price premium?

An econometric approach is used to address the questions. Energy consumption is related to both housing attributes, including energy-related factors, and household characteristics, including income. A hedonic price model is used to analyze implicit prices for the various attributes. A unique feature is the large set of energy-related attributes included in the database (all single-family houses sold in Sweden 2009-2010), which also comprises individual household data. To our knowledge, this is the largest empirical work performed in Sweden on this matter.

The results will be compared with those of similar studies. However, the Swedish case is interesting in itself. In Sweden, 3% of the disposable income goes to energy consumption; twice as much as the EU average. Our data represents three different climatic zones. The average annual temperature varies from -5 in the north to 9°C in the south, which is quite unique in an international perspective.

Preliminary results show that the energy consumption in a house is partly depending on the building's characteristics, such as vintage, and partly on the household's characteristics, such as size and composition. The hedonic model shows that there is a price premium for energy efficient houses.

Energy Efficiency and Sustainability as the Carriers of Modern Approaches of Value: Do they Work?

Kaarel Sahk, Taavi Randoja

Keywords: *Sustainability, Energy efficiency, Estimates, Questioning, Value factor*

During the last decade, especially after the finance and real estate markets shocks, the new attributes, those are able to bear the revaluated expectations of market participants, are strongly needed. The birth of these components, describing the contemporary value estimating procedure is beside the traditional aggregates of value, the aggregates that arise from overall term of sustainability. In the English language societies a prevailing to whales of sustainability parameters constructing: the LEED, furnishing the US and linked with him real estate markets and the BREAAAM that is serving as sustainability equipment for GB and influenced by him countries. The development of real estate appraisal in small economy like Estonia and all the Baltic states are spotlights the opposite and diametrical constitutions – on the one hand, the general by nature international foundation is needed, on the other hand, the singularity of Baltic markets must be taken into account. In this case the energy efficiency, primarily grounded on the opened energy market actions, has created a situation whereby without accounting it is not available to compose the at least long term development schedules or to finance them trough the property based mortgages, while the energy efficiency is not estimated. The questionnaire explains how the different market professionals are using the energy efficiency as a tool for contemporary value approach and do this rapprochement to sustainability through energy efficiency is satisfying them. Of course the responses are able to apply for conclusions according all the Baltic market with relevant reckoning specialities characterising their development differences.

Privatization as an Element of Local Housing Policy

Ewa Kucharska-Stasiak, Konrad Zelazowski

Keywords: *Municipal housing policy, Housing privatization, Models of privatization, Polish public housing*

Since the beginning of economic transition responsibility of satisfying housing needs of local communities was transferred to local governments. To fulfill their duties polish municipalities maintain and manage housing stock which includes dwellings for low income households, social dwellings, replacement dwellings and temporary living quarters.

In many European countries a process of municipal withdrawing from housing sector can be observed. Local governments consider privatization as an additional source of income and the way of improving the effectiveness of their housing stock management.

However this direction in polish conditions not only did fail to stimulate private rental housing but also evoked the sense of social injustice. Modified concept of privatization based on national and local housing strategies need to be developed.

The Myths and Reality of Urban Constraint in United Kingdom: Changing Circumstances and Unchanged Policies

Alan W. Evans

Keywords: *Housing, Costs, Green belts, Agriculture, Politics, Countryside*

It is well known that urban expansion is constrained in the UK by Green Belts around the major cities and by other policies. This policy of constraint came into existence after World War Two. The primary driving force at that time was a desire to preserve agricultural land which was perceived to be vital to the nation after the submarine blockade of the war years. This perceived need for agricultural production meant, firstly, that farming was left uncontrolled by the 1947 Planning Act, and, secondly, that it was heavily subsidised, subsidies which continued after the UK joined the EU in the seventies.

Things changed around 1980, however. Firstly it was perceived that the drive for increased agricultural production was leading to the loss of some perceived benefits of the countryside as fields were enlarged, hedges removed, ponds drained, etc, and, secondly, that the use of pesticides and herbicides to increase production was leading to a loss of wildlife. Complaints about agricultural surpluses - butter mountains, milk lakes, etc, which led to land being set aside to reduce production meant that there seemed to be no reason to protect agricultural land.

The reasons for the policy of constraint changed, however, but not the policy. The perceived need now was to protect the "beauty, peace, and wildlife" of the countryside. The policy continued to be supported because the British population believes various myths - that half or less of England is rural (not the ninety per cent of reality), or that the UK uses its urban land wastefully (actually it's more efficient than almost all other west European countries).

The policies are also supported by the wealthy and powerful. Anyone walking in the London Green Belt will find that the land is mostly used, not for agriculture, but for golf courses and for stabling the horses of the rich.

The economic consequences of the policy did not change, of course. These are that land and house prices are high and rising, the latter doubling in real terms every twenty five years, but this too is seen as a benefit by the older population who are home owners.

But now the young, excluded from buying homes by the current economic crisis, are taking an active interest. Changes in policy appear to be possible and may take place. We wait with interest.

Commercial Real Estate Markets: Global Shock, Identical Reactions?

Ed Nozeman, Arno van der Vlist

Keywords: *Commercial real estate, Dynamic panel data model, Global cities, Retail real estate markets*

Global cities at the very top share the highest level of well-being in economic, social and cultural perspective. Connectivity thereby seems to pay off in both booms and busts, as commercial real estate market reports indicate. We analyse returns across global markets relating market dynamics to both global and local drivers. Previous literature suggests that return rates differ widely across global markets, substantiating the view that returns are intertwined with conditions at the local level. Whether and to what degree differences in these global markets relate to differences in local institutions has not been addressed. This is the central issue of this paper, thereby extending earlier presented results on European metropolitan commercial real estate markets with findings for Asia, Australia and the Americas.

The research design consists of three coherent steps to address the central issue. Step 1 addresses the issue of how institutions may determine differences in office market dynamics.. We use current contributions in the literature, culminating in a concise review of the literature on institutions and office market behaviour. Step 2 aims to measure the degree of differences in office market returns. For this we use data across metropolitan areas. Step 3 considers the interrelations between office market dynamics and institutions to explain the observed differences in step 2. For this we model market returns now including the various institutional measures identified in step 1. These results will indicate which and to what degree the various institutional measures explain observed differences in local office dynamics.

Charity and Retailing: Economic Discourses of Uneven Geographies.

Nicola Livingstone

Keywords: *Charity, Retail, Spatiality, Social form, Uneven development*

The urban retail environment actively reflects changes in society today, as we exist in an undeniably interconnected world. Such movements have produced a geographically uneven market through which charity retailing has evolved. Charity retailers have become ubiquitous in their presence on the British high street – it is more surprising to discover urban areas without these retailers. Society has created the need for such retailers, but since their expansion in post World War Two Britain they have undergone a significant transformation – both economically and spatially. Charity retailers have become professional, profit maximising businesses as they developed from a stigmatised second-hand retailer relegated to undesirable retail locations have now emerged as fashionable signifiers of gentrification. This research considers the growth of charity retailers from an economic and spatial perspective, adopting the city of Edinburgh as its case study. Charity retailing is situated within the urban economy of the early twenty-first century, as a niche, which has evolved concomitant to the restructuring of the retail market. The paper addresses the lacuna of research in the third sector relative to charity retailers and is informed by socio-economic data and ethnographic studies. The research seeks to answer the question: How have charity retailers become so indelible in the British high street and how can they be understood?

Patterns & Impact of Rural Drift in Canterbury New Zealand

Gary Garner, Veronica Rall

Keywords: *Remote rural area, Rural drift, Counter-urbanization, Rural migration, Rural property*

Purpose - Virtually all nations in the world have 'urbanized' in most or all of the last 50 years. However, urban-to-rural migration has become a recent and prominent occurrence in many developed countries. This change - known as 'counter-urbanization' – typically observes the movement of urban-based businesses and professional people to rural areas to live and/or work for improved quality of life. A much less common form - emerging to be taking place in Canterbury, New Zealand - is demonstrated in the form of population increases in more remote rural areas, typically underpinned by new entrants into 'bona-fide' farming and related occupations. This research is designed to identify the ebb and flow patterns of such rural population drift and then ascertain how the impacts (particularly property value effects) of such phenomenon can be determined.

Design/methodology/approach - Having completed a literature review, the study conducts an exploratory study of the primary data, and then proceeds to examine the value and process of devolving to a longitudinal (correlational research) study using panel data, i.e. time series data with some cross sectional referencing involving property values and population demographics measured over time (multidimensional econometric analysis).

Findings - This study questions whether the 'counter-urbanization' phenomenon in Canterbury is being driven by the advent of dairy conversions and the labour force required to locally provide related goods and services to that industry. Whilst the drifting patterns can be readily determined, less apparent are relationship dynamics between human population drift and property values which might be better explained by variables outside those specifically examined in this study.

Research limitations/implications - This research is designed to specifically exclude 'peri-urban' area analysis relating to the growing popularity of lifestyle blocks, particularly in the proximity of urban areas where daily commuting is possible, i.e. rural areas with moderate to high urban influence.

Originality/value - The observation, recording and analysis of rural drift impact in remoter areas have important implications in terms of infrastructure framework and community development. There are also significant inferences with regards financial and corporate restructuring for business operating in these areas.

Tenant Features and their Impact on the Office Sector Rent: Evidence from Milan

Bryan D. MacGregor, Claudio Giannotti, Gianluca Mattarocci, Simone Roberti

Keywords: *Tenant, Office sector, Rent, Real estate*

The hedonic price models on the office sector demonstrate the existence of a link between the rent and the vacancy of the area (Wheaton and Torto, 1988), the characteristics of the building (Clapp 1980) and the characteristics of the area (Gardiner and Henneberry, 1988). The role of each feature and the significance of the hedonic price models depends on the characteristics of the market analyzed (Atilla and Pekdemir, 2006).

The theoretical and empirical models suggest that the interaction between demand and supply could impact on the rent price and the final rent will be defined on the basis of a negotiation process (Tsolacos, Keogh, McGough, 1998). Empirical evidence on the role of tenant features in explaining a misalignment respect to a fair rent defined on the basis of the property and area features is still limited.

Using a proprietary database, representative of Milan, on the time horizon 2000-2011, provided by BNP Paribas Real Estate, we collect all information about all tenants' features (balance sheet data) for a set of 800 contracts and the information about the property and the rent. We compute the difference between the real rent and the expected rent defined on the basis of the hedonic price model constructed on the buildings features and the geographical area and we study the role of tenant features in explaining the gap measure. The results provide some interesting evidence on the role of tenant features that could explain the divergence of the rent respect to its expected value.

The Segmentation of the Amsterdam Office Market

Philip Koppels, Hilde Remy

Keywords: *Amsterdam, Hedonic, Offices, Submarkets*

There is a sound theoretical base and intuitive expectation that urban office markets are too segmented to be accurately described by unitary market models. Nevertheless, previous studies of office market dynamics tend to concentrate on either national or metropolitan markets and assume a unitary market in equilibrium. In spite of the fact that the value of office property attributes may vary across urban submarkets.

Office submarkets can be understood as comprising offices that, although not exactly alike in their combination of characteristics, are considered a reasonable substitute for each other. In general, two types of segmentation can be distinguished; spatial segmentation and structural segmentation. Spatial segmentation refers to geographical delineated submarkets due to dissimilar location features. Structural segmentation relates to market segmentation due to building dissimilarities such as building size, building quality and year of development. The study examines the spatial and structural segmentation of the Amsterdam office market.

Amsterdam, the study area of this research, has a dispersed office location pattern. Amsterdam is by far the largest office centre in The Netherlands and has an office stock of approximately 6.7 million square meters. Real estate agents identify several distinct office locations; spatial submarkets. Furthermore, distinct building stock segments, relating to building size and building period, are distinguished. In this paper, the Amsterdam submarket structure is examined in a hedonic framework, over the period 1995 – 2011. Prior defined submarkets, as perceived by real estate agents, are tested on consistency and submarkets are statistically derived. For this purpose a standard city-wide hedonic model is formulated and compared with models that take various submarket delineation schemes in consideration. The derived utility for building and location attributes in each model is compared and provides an indication of the submarket structure of Amsterdam.

The Impact of Urban Centralities on Housing Values

Aurelien Decamps, Frederic Gaschet, Guillaume Pouyanna, Stephane Virol

Keywords: *Employment poles, Polycentric city, Hedonic models, Residential dynamics, Housing prices*

This article analyses the formation of urban and suburban employment centralities and their impact on local housing values. Urban sprawl combined with the formation of suburban employment poles have produced more complex spatial patterns characterized by a polycentric city. This paper assumes that these changes in urban forms have influenced residential dynamics and have thus influenced housing prices. The presence of suburban centralities is expected to improve local attractiveness and thus to be capitalized in housing prices.

The aim of the article is to disentangle the specific impact of the various factors explaining housing prices differentials. We are specifically interested in the influence of economic centralities among other factors such as accessibility or the presence of diverse amenities. We use semi-parametric hedonic regression modelling which allows us to estimate sharply the impact of urban subcenters on housing prices among other factors, by considering varying distance thresholds and heterogeneous spatial patterns of housing prices. The dataset come from residential transactions recorded by notary offices. The precise geographical coordinates of each transaction is used in addition with economic value and intrinsic characteristics of the buildings, allowing a sharp estimation of the spatial pattern of housing prices. Explanatory variables come from several data sources recorded at a fine spatial scale and concern mainly accessibility, socio-economic attributes, local amenities and employment density.

The impact of economic centralities on housing prices is studied in three major French cities: Paris, Lyon and Bordeaux. This allows a comparison of three different urban patterns. The contribution of the paper is to investigate the impact of urban structure on housing prices and to overcome several limitations of hedonic models using semi-parametric regressions. This paper relies on the interactions between urban economics and real estate economics.

The Impact of Planning Policies on Investment in Industrial Buildings

Huub Ploegmakers, Pascal Beckers, Erwin van der Krabben

Keywords: *Planning impact, Building investment, Quantitative modeling, Industrial sites, Regeneration*

This paper explores the relationship between the planning environment and investment in commercial and industrial buildings in the Netherlands. Most past research on the impact of the planning environment on outcomes in real estate markets has investigated the impact of regulation on (house) prices, with the majority of studies indicating that increased planning restrictions lead to higher prices. However, these studies do not consider the impact of planning on construction activity directly. Furthermore, most existing empirical work has narrowed the effect of the planning environment to the impact of development controls. In addition to a measure of restrictions on industrial land release, this paper incorporates an indicator of regeneration initiatives for rundown industrial sites into a model of investment in buildings on industrial sites. Whereas planning restrictions are generally expected to exhibit a negative impact on new construction (this paper also explores the impact of planning constraints on investment in modernization and refurbishment), the latter measure is assumed to capture some of the positive impacts of planning. In fact, one of the main objectives of regeneration initiatives for rundown industrial sites is to stimulate private investment in new and existing buildings on these sites. This study makes use of micro data on expenditure in modernization, refurbishment and new buildings by firms located on industrial sites. In this regard, we use data on non-residential building permits issued by Dutch municipalities between 1997 and 2008. Besides the local planning environment, this paper also considers the impact of other location variables such as accessibility as these are assumed to increasingly dominate investment activity at more disaggregate spatial levels.

Setting the Neighbourhood on Fire: On Socio-Economic and Economic Impacts on Malicious Fire

Helena Bohman

Keywords: *Urban fires, Socio-economic factors, Arson, Copper fires, Juvenile delinquency*

Purpose - Malmö city has experienced several waves of fire outbursts between 1990-2008, severely affecting both property owners and inhabitants of some neighbourhoods. The purpose is to analyze the socio-economic patterns underlying sudden outbursts of malicious fires in Malmö.

Design/methodology/approach - Statistical/GIS-based methods on neighbourhood data.

Findings - The most prominent and stable variable explaining the number of fires is the number of youths in an area. However, the socio-economic characteristics of the area are important, since the number of youths only seem to explain the outbursts in areas with a certain level of distress. Specifically, the education level but also crowdedness in the area seem to be important risk factors.

Practical implications: The study is part of a project undertaken together with the municipality, contributing to local policies. The findings suggest relevant indicators for forestalling similar incidents.

Originality/value - The study contributes to the literature primarily in terms of testing criminological theories in a geographic/urban setting. It also develops methodology by focusing on the geographic context.

Are Housings Early Demolished in Urban Renewal Area?

Hsiu-yin Ding

Keywords: *Building life, Urban renewal unit, Usage Licenses, Property rebuilt, Urban renewal business*

The main objective of urban renewal is to improve neighborhood environment by reconstructing obsolescent buildings. There are three approaches for implementing urban renewal projects in Taiwan but developers prefer reconstruction to renovation and maintenance of buildings. Local government creates lots of criteria to define the qualified buildings which could be reconstructed. The basic criterion could be the life of buildings. Due to the renewal area should be involved continued lots; some new buildings could be planned into a renewal project. This might lead new buildings to be reconstructed when they are young. Constructing a building costs a lot and it should not be demolished just because of the reason of urban renewal. Therefore, in this paper, the building life of approved urban renewal units was examined for analyzing the efficiency of urban renewal projects in real estate market. The data of Construction Licenses, Usage Licenses and Demolition Licenses of the buildings involved in urban renewal projects were used for the analysis.

Urban Renewal Projects: Set in Stone or Flexible?

Bugra Kagan Esen

Keywords: *Urban renewal, Time, Decisions, Authorities, Flexibility*

In the last couple of years, urban renewal practices in Turkey, has become a more interesting topic for researchers than ever. One reason is that, the evidences of these decade-lasting projects have now become physically tangible and thus, subject to a spectrum of concerns. The other reason, however, relates more to the top-down style that these projects are implemented. Most of the time, it is argued that, the decision making process heavily depends on the local or central governmental authorities, which lack the participation of the people as well as the academic or civil parties.

In light of these facts, this paper questions in what extend it is possible to modify –or flex- urban renewal projects according to changing times and conditions, which represent a timeline of administrative, legal, technical, social, political and financial aspects. On one hand, from the authorities viewpoint, it is seen crucial to make solid decisions and comply with these projects without hesitation. On the other hand, it is not always possible to foresee what time would bring and make decisions to cover this fourth dimension.

In this paper, one real-life example from the capital city, the New Mamak Urban Renewal Project including 18.000 dwellings, has been analyzed to show how things may get out of hand due to changing conditions in time and how modifications may be needed in the half way.

This paper aims to contribute to the real estate sciences in the sense that; complicated and long lasting urban renewal projects can be better accomplished if some flexibility techniques, as suggested in the paper, can be taken into consideration in a well established way.

Explaining Differences in Decline between Industrial Sites

Jasper Beekmans, Erwin van der Krabben, Karel Martens

Keywords: *Industrial sites, Neighbourhood decline, Property values, Valuation, Hedonic models*

In this paper we explain differences in the development of value between a designated type of urban areas: industrial sites. The aim of this paper is twofold. First, industrial sites in the Netherlands are prone to rapid decline (Buitelaar & van der Krabben, 2011) and although regeneration policies to counter the effects of decline are very common (Ploegmakers & Beckers, 2012), the process of decline itself remains under researched. Secondly, existing studies on urban and neighbourhood decline usually apply qualitative methods to research decline in one city or selected areas of a few metropolitan areas (Ellen & O'Regan, 2008). For this paper, large scale quantitative methods are applied to research the influence of a variety of site specific and (regional) economic characteristics on the development of value of all industrial sites in the Netherlands.

Based on existing studies on gentrification, urban decline and neighbourhood decline we argue that the development of value is a proxy for the process of decline of urban areas. It is believed that industrial sites that under perform in terms of development of value as compared to the average development have experienced more decline than sites that have performed well. The development of value in the period 1997-2008 of the industrial sites in our dataset is calculated using the aggregate of the values of individual properties on industrial sites.

The conclusions of this paper provide more insight into what factors influence the process of decline. These insights can also be helpful for urban policy makers in making the present policies more efficient when it comes to both regeneration and development of new industrial sites.

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The Effect of Short-Run Market Expectations on House Prices: A Spatiotemporal Modelling Approach

Jean Dubé, Diègo Legros, Sotirios Thanos

Keywords: *Spatial econometric, Hedonic pricing, Spatiotemporal modelling, Short-run market expectations, Spillover effects*

Spatial econometrics has been widely applied to Hedonic Pricing models in the literature to determine spatial spillover effects between house prices in close proximity. An approach is developed here to test for a short-run market expectations effect: the degree to which the expectations of sellers and market intermediaries (e.g. agents, lawyers, and surveyors) affect the final house price. This is the information effect on potential house buyers from asking price setting in the market. We employ a typical dataset composed from sales observations each at a specific location and distinct moment in time. An emerging body of literature demonstrates that the temporal dimension of such data, when ignored, has serious implications for spatial autocorrelation models. By following this approach, we can further utilise the spatiotemporal patterns in such data to successfully decompose the market expectation effects from the typical spatiotemporal spillovers.

The DMI Approach for Urban Development Funding

Wolfgang Breuer, Dominique Schaeling

Keywords: *Funding efficiency, Funding targets, Indicators, Urban capital markets, Urban development funds*

With the introduction of the JESSICA (Joint European Support for Sustainable Investments in City Areas) Initiative, the European Commission aimed at strongly enhancing investments in urban areas to meet the steadily increasing requirements, arising from urbanisation, for European cities. One major challenge now is to find out where the establishment of so called Urban Development Funds (UDFs), with their revolving nature, is a suitable means to achieve this goal. A concept for the determination of funding targets for UDFs is discussed in this paper with the help of three subsequent steps – distance, movability, and capital market imperfections of cities – which we name the DMI approach.

The first step is the determination of urban differences by an indicator-based analysis with the definition of the distance to a benchmark city. This reveals cities which have a need for investments in urban areas. Second, the measurement of funding efficiency as a device to quantify movability of cities defines the next step. This step helps to identify cities which should be supported technically to achieve more impact from the funded investments. Finally, the third step is the provision of market imperfections given by the sensitivity of investment needs to the three market failures of external effects, imperfect competition and incomplete information. With the third step, cities which need investments in urban areas are separated into those which are finally eligible for UDFs and other funding candidates.

With this overall approach we achieved to merge a high number of information into a neatly arranged separation of cities. As a final result, we obtain those cities which should be supported by UDFs and we also identify if further technical support is appropriate. This is demonstrated by an example on Italian cities. The DMI approach contributes to research on UDFs by introducing a conceptual way for the determination of urban funding target areas which is up to now absent in literature.

Failures in Urban Capital Markets and Consequences for Project Funding

Wolfgang Breuer, Dominique Schaeling

Keywords: *Urban development, Market failure, Policy interventions, Funding instruments*

Urban areas are nowadays seen as the engines of economic growth and thus politicians rivet on problems connected to urban development. Most importantly, the question of how projects, which enhance urban life should be funded raised concern. The European Commission reacted to this topic by the introduction of the JESSICA (Joint European Support for Sustainable Investment in City Areas) Initiative. Within this initiative, resources can be invested in so called Urban Development Funds (UDFs) which should pass the money on to projects eligible for funding. In contrast to traditional grant financing, the JESSICA instruments have a revolving character (loans, equity, guaranties). This raises the question of whether and when the employment of these new funding types is appropriate.

In general, public authority interventions are a justified means to remedy market failures. We apply this idea in the context of urban development projects by analysing the three main market imperfections, namely external effects, imperfect competition and incomplete information. For combinations of these imperfections, we derive suitable types of funding.

Depending on the sensitivity to the respective imperfections, we categorise a range of urban development projects which are suggested to be appropriate for Urban Development Funds under the JESSICA initiative. This reveals that projects related to culture, tourism, retail as well as public buildings and spaces should get grant funding as they are mainly prone to market failures arising from external effects. Otherwise, projects in the fields of transport, energy, communication, education, research, business parks, and start-ups are indeed suitable for JESSICA-type funding.

This analysis contributes to existing remarks on the advantages of the JESSICA Initiative by going beyond practitioners' argumentations. It seems to be extremely important to understand the mechanisms behind market failure corrections, because the appropriate funding type is crucial to not distort normal market functioning. Thus, the connection between the omission of project initialisation and market failures should always be carefully investigated before the selection of funding instruments.

Measuring Determinants of House Prices: Listing Behaviour in Italian Real Estate Market

Elena Fregonara, Patrizia Semeraro

Keywords: *Housing listing prices, Price determinants, Hedonic models, Measures of association, Italy*

The aim of the paper is to investigate the listing behaviour of sellers and agents. To this end, we measured the impact on the list price of the characteristics posted in sales advertisements - the starting point of the selling process. We considered two different measures: the traditional R^2 measure to assess the strength of linear dependence between characteristics and price, and a general R^2 -like measure to assess the proportional reduction in variation of prices explained by the characteristics. Comparing the results was a first step towards investigating the way sellers and agents incorporate house characteristics into listing prices. We performed the analysis on a database of 4240 houses listed in the city of Turin -Northern Italy- in a time period from 2007 to 2012. Results show that the characteristics posted in advertisements explain almost all the price variation. We found empirical evidence that the linear relationship between house characteristics and price explains almost entirely the strength of their association: sellers and agents incorporate characteristics in prices using a linear model. Moreover, the characteristics most associated with prices are location, number of rooms and quality of the building, although only high levels of quality of the building are incorporated into listing prices. In contrast, we found empirical evidence that the other characteristics posted in advertisements, such as unit condition, type of building 'apartment building, detached house' - have a low association with listing prices.

Impact of Integrated Transport Hubs on House Prices in Singapore

Lawrence Chin, Nur Khairun Husaini

Keywords: *Integrated transport hub, Public housing, Housing market, Urban economics, House prices*

Housing is a commodity of variable uses, equipped with unique characteristics attributable to internal and external factors, each playing a major role in determining its inherent value. Location theories were developed by early economists to explain the pattern of land use by providing solutions to the problems associated with the optimal use of the land. Improvements in accessibility are expected to generate positive effects on house prices since commuting would be enhanced. Additionally, transportation networks would attract different types of activities for the work, live and play lifestyles for the residents.

The objective of the study is to examine the effects of an Integrated Transport Hub (ITH) as an urban planning policy on the prices of public residential estates in Singapore. A controlled empirical study is conducted using the Bukit Panjang Transport Hub to examine the differences in resale prices between units located in the influence and the control areas.

Hedonic regression methodology is applied to analyse the impact of the transport mode on the neighbouring residential properties. The hypothesis was formed on the premise that ITHs would generate a housing premium on units located in the influence areas, using walking distance to distinguish between units located near to or away from the transport hub. The findings from the multiple linear regression support the hypothesis when a premium of 12.6% was recorded for units within the influence area.

The significance of the study is useful to assist in planning of public transport and its likely influence on prices in the housing market.

Estimating the Benefits of Sub-Saharan Africa Urban Land Use Planning System: A Methodological Discussion

Kwasi Gyau Baffour Awuah, Felix Hammond, Jessica Lamond, Colin Booth

Keywords: *Benefit, Sub-saharan africa, Land use planning, Quantitative, Methodology*

A large volume of literature discussion focuses on the weakness of sub-Saharan Africa land use planning systems to the exclusion of their benefits. The starting point to any effort at assessing the extent of benefit of these land use planning systems is to devise a suitable benefit estimation methodology. This study based on a review of the literature interrogates the conventional quantitative methodologies usually employed in the developed world to calibrate benefits of planning policies. It is established that conventional methodologies used in the developed world are associated with complexities and require huge volumes of organised data, which are hardly encountered in sub-Saharan Africa. This signifies that a bespoke methodology is required to estimate the benefits of planning regimes in the sub-region. The study, therefore, prescribes a methodology based on the nature of planning regimes and organised data peculiarities in the sub-region.

Methodological Prescription for Quantitative Cost Assessment of Sub-Saharan Africa Urban Land Use Planning Systems

Kwasi Gyau Baffour Awuah, Felix Hammond, Jessica Lamond, Sulemana Mahama

Keywords: *Cost, Sub-saharan Africa, Land use planning, Quantitative, Methodology*

Consensus signifies that the cost of compliance with land use planning requirements is a major link to the weakness of sub-Saharan Africa urban land use planning systems. Yet scanty knowledge exists on the extent and magnitude of the cost of the sub-region's urban land use planning systems. This is compounded by the complexities associated with conventional quantitative methodologies usually used in the developed world to estimate the cost of land use planning policies and their huge volumes of organised data requirements. This study initially examines these conventional methodologies and nature of sub-Saharan Africa urban land use planning systems based on evaluation of the extant literature. Subsequently, a customised methodology (ies) is proposed taking cognisance of insights from the conventional methodologies, nature of the sub-region's planning systems and its organised data constraints.

Sale of Public Housings to Sitting-Tenants: What Determines the Success or Failure of Such Privatization Programs around the World since 1980's ?

Linzi Zheng, Kwok Chun Wong

Keywords: *Wealth maximization mode, Housing privatisation, Tenure choice of sitting tenants, Transaction cost, Agent theory*

Selling public rented housing to its sitting tenants, a major method of housing privatization which become prosperous since 1980s, has been adopted by many different political systems and spread all over the world. However, outcomes of different programs are of large divergences, while the 'Right-to-Buy' policy in UK increases obviously homeownership level, other countries such as France, Netherlands and etc. did not achieve satisfied results; similar gap also happened in Asia like areas between Hong Kong and Mainland China. Hence the purpose of this paper is twofold: First, based on international data comparison analyses within wealth-maximization modes, to empirically identify major determinants out of both economic variables and demographic factors in tenure choice when facing the opportunity to buy their current living public rented houses and second a general pattern housing privatization proceeds for different countries can be drawn.

Evaluating Employment Centres in Master Planned Communities in South-East Queensland

Pamela Wardner

Keywords: *Master planned communities, Australia, Mixed-use developments, Employment centres*

Developers of large-scale greenfield master planned communities (MPC) in South-east Queensland (SEQ) Australia have been 'mandated' to provide employment opportunities in their greenfield development project sites. While not explicitly written into legislation, it has been heavily promoted by state and local governments and urban planners alike.

The encouragement of mixed-use concepts such as an MPC contributes to the achievement of two economic objectives sought by local government – maximising local employment opportunities (self-sufficiency); and encouraging the local capture of employment (self-containment). However, current MPC data shows increased cross-suburban travel instead of minimising state and local government's journey-to-work objectives. MPC employment centres also have shown higher than average vacancy rates compared with surrounding commercial areas.

Therefore, if the concept of mixed-use in a complete MPC is philosophically a sound urban objective, why then does this situation not manifest itself as envisioned by the state and local planners and MPC developers? Hence, this research assesses the value-add of 'mandating' these employment centres to be incorporated in large-scale greenfield MPCs.

This research is exploratory in nature as it provides an understanding of the market processes and operations in creating a successful MPC employment centre. An extensive literature review, semi-structured interviews and observations was used to develop a theoretical framework. It also uses the Delphi technique to distil expert opinion and achieve group consensus.

The findings of this research have wide implications on public policy and urban planning particularly in the creation of the employment component in mixed-use developments. Employment centres located within an MPC are intrinsically two distinct projects, an economic development project and an urban development project. While MPC developers can provide the urban form and an environment conducive for firms to locate, the underlying economic fundamentals to attract firm locators to the area are beyond the scale and reach of MPC developers, which will ultimately drive the success of any employment centre.

Rethinking the Interface between Industrial and other Urban Land Uses: Australian Base Studies

Michael J. Hefferan

Keywords: *Industrial land use, Integration of land uses, Australia, Impact of change*

Industrial sectors and the property assets that support them evolve over time and are shaped by a range of economic, financial, technological, community and political forces. The past two decades have seen remarkable and compounding changes in these areas – underpinned by rapid rises in consumption levels and globalisation of markets. All these have resulted in the contraction of traditional manufacturing activities across practically all OECD countries.

In Australia in particular, new forms of 'industrial' uses have emerged. These emergent changes have significant economic and land use impacts and are yet to be fully appreciated by and incorporated into statutory planning schemes.

Hence, a closer examination of the spatial relationship between these new forms of industrial activity and surrounding urban land is now required particularly to identify the challenges for the existing asset bases and urban layout. More positively however, there also appears to be opportunities to develop innovative forms and structures to accommodate these evolving uses, which are neither as intrusive nor locationally bound as industrial uses of decades past.

This research is based on literature, interviews, focus group discussions and case studies in eastern Australia. Once the nature of changes in industrial land uses are defined and understood, then the interface between these emerging industrial activities and other urban land uses can be better integrated and aligned.

A Multilevel Path Analysis of Social Networks and Social Interaction in Neighbourhood

Pauline van den Berg, Harry Timmermans

Keywords: *Personal networks, Multi-level, Structural equation modelling, Neighbourhood effects, Social contact*

In urban renewal policies in the Netherlands, great importance is attached to housing diversification and social mix in neighbourhoods. The assumption that housing diversification will lead to more neighbourhood-based social interaction and social cohesion has been taken for granted, although empirical evidence supporting this assumption is scarce and inconclusive. It is therefore important to improve our understanding of the effects of neighbourhood characteristics on neighbourhood-based social contacts, based on empirical results. This paper aims to contribute to this line of research by studying the role of socio-demographics and neighbourhood characteristics in the formation of social network ties and social interactions with neighbours. These relationships are analysed using a multi-level path analysis approach. The analyses are based on data collected in 2011 in 70 different neighbourhoods in Eindhoven, the Netherlands in a survey among 751 respondents. The results indicate that neighbourhood-based contacts are influenced by socio-demographic characteristics. People who spend more time at home (people with children and people who do not work) and who have been living longer at the current address have a larger share of neighbours in their social network and higher contact frequencies with their neighbours. Immigrants have a smaller share of neighbours in their social network. Education is found to have a negative effect, whereas income is found to have a positive effect on social interaction with neighbours. Neighbourhood characteristics are not found to affect social network size, the share of neighbours in the network or the frequency of interaction with neighbours. This finding is at variance with the assumption that an adaptation of neighbourhood characteristics (through urban renewal) can lead to increasing social interaction among neighbours.

Organisational Capabilities and their Influence on Strategic Performance in Real Estate Development

Marijana Sreckovic

Keywords: *Resource-based view, Competitive advantage, Project-based organisations, Dynamic environments, Empirical research*

In today's dynamic and uncertain environments organisations are facing constant challenges in terms of achieving and maintaining their competitive advantage. These new circumstances are compelling organizations to analyse, integrate, build and reconfigure their resources and organisational capabilities in order to sustain and improve their strategic performance. The purpose of this paper is to investigate the role of organisational capabilities (OC) for the strategic performance of real estate development companies, which are mainly project-based organisations operating in dynamic and uncertain environments. Before empirically exploring the relationship between organisational capabilities and firm performance, a conceptual model for organisational capabilities based on the resource-based-view (RBW) is developed and applied in Real Estate. Based on the developed OC-model it is hypothesised that those certain organisational capabilities, which are embedded in the organization itself and developed through projects and people capabilities, influence the strategic performance of real estate development companies and thus lead to competitive advantage and higher firm performance. As real estate developers operate in highly dynamic and uncertain markets, our empirical model also introduces the control variable environmental uncertainty which, depending on the target market, influences further the choice of strategy. The model is empirically evaluated by using data from real estate development companies in Austria, Germany and Switzerland and tested by applying hierarchical regression analysis.

Linking Cultural Economy and Real Estate: Lessons from a Swedish Case

Stig Westerdahl

Keywords: *Cultural economy, Real estate development, Urban development, Regional development, Creative class*

A Cultural or Creative Economy is said to be on the rise. This claim for changes in contemporary society is not new and the terminology can differ. Linkages to the cultural and experience based is however a joining feature. The question raised in this paper is the implications of this development for the real estate sector and its research agenda. Drawing on the establishment of an art gallery in the north of Sweden, as part of the transformation of an old regimental area, the potential and problems of linking the real estate sector and the cultural economy is discussed.

Transitions in society are often described in terms of labels. History can give numerous illustrations. Nomads wandering transferred to the more permanent agriculture, is one such example. Much later follows the breakthrough of Industrial society and a variety of proposals for succession: Information society, Knowledge economy, or perhaps Creative economy. These transitions could be expressions of an over-emphasis of the new. The old way of living and economic exchange remains, after all, to a lesser extent. Similarly, what is described as new have often been around for some time.

Following this, cultural activities have been essential part of societies for many years and often in ways that also made it possible to earn a living out of it. One decisive difference is however how the emergence of a Cultural or Creative industry today is described as a driving force for the entire society, making the approach appealing to policy makers. The researcher most of all associated with this line of thinking is Richard Florida and his discussion on the Creative Class. These creative professionals are attracted to urban centers and one link to real estate sector is hereby established. The importance is often exemplified with how spectacular buildings such as the Opera House in Sydney or the Guggenheim Museum in Bilbao have become icons for a new form of economy in these cities. But there is also a more down to earth connection where regions strive for cultural activities and property prices are driven by cultural values.

Sustainability and Risk: Towards a Risk-Based Sustainability Rating for Real Estate Investments

Erika Meins, Daniel Sager

Keywords: *Sustainability, Estimation, Risk, Rating, Monte Carlo*

Purpose - To identify the relative contribution of selected sustainability features to property value risk with the aim of generating a risk-based weighting system for a property sustainability rating.

Approach - For a given set of sustainability features, a discounted cash flow (DCF) model is used to derive the weights. The anticipated demand for each sustainability feature is described by three future states of nature. Subjective probability distributions describe the occurrence of the future states of nature. Monte Carlo simulations of the DCF model are then used to estimate the impact of an individual feature on the risk (volatility) of the property value distribution. The weights are deduced by comparing the estimated property value distribution with and without each specific sustainability feature in question.

Findings - For Switzerland, the highest single impact on the property value risk of 42 modeled sustainability sub-indicators (features) stems from 'thermal energy' (29.3%), followed by 'public transportation' (16.3%), 'day light' (9.6%) and 'story height' (6.3%). At the level of the five groups of aggregated sustainability features, 'resource consumption and greenhouse gases' has the highest relative weight (32.1%), followed by 'health and comfort' (30.6%), 'location and mobility' (22.5%), 'flexibility' (13.5%), as well as 'safety and security' (1.3%).

Practical implications - The resulting rating serves as a basis for real estate investment decisions by illustrating how sustainability features affect the risk of specific properties.

Value - An effort is made to rigorously found sustainability ratings in financial theory.

Atmospheric Characteristics Influencing Consumer's Appreciation of Dutch Inner City Shopping Areas

Ingrid Janssen, Wouter Dijkman, Tim Op Heij, Rick Willems, Aloys Borgers

Keywords: *Retail real estate, Consumer behaviour, Multinomial logit, Shopping areas, Atmosphere*

Dutch inner-city shopping areas face a decreasing number of visitors and declining sales volumes. Internet shopping, economic decline and an ageing population are considered to be the main causes. Improving the atmospherics of inner-city shopping areas may be a solution to improve the competitiveness relative to other recreational destinations and attract more visitors to shopping centres. The aim of this research is to empirically determine which atmospheric characteristics contribute to the shopper's appreciation of inner-city shopping areas.

A list of 25 environmental characteristics formed the basis of a survey that was conducted in the historic inner-city shopping areas of two Dutch medium sized cities: Maastricht and 's-Hertogenbosch. Within each of these inner-city areas, four locations were selected; two historical and two non-historical. At each location, the 25 characteristics were firstly assessed by the researchers. Secondly, in total 918 consumers were invited to rate each characteristic. In addition, each respondent rated the overall appreciation and the sphere of the location under consideration. Furthermore, each respondent was asked to rank order the four locations of the particular inner-city considering the most favorite shop location and the most atmospheric shop location.

Decision tree analysis was used to find out if and which physical characteristics of the locations cause the largest impact on the consumers' appreciations. Furthermore, multinomial logit (MNL) choice models were estimated to predict the most favorite and most atmospheric locations from the rank orderings provided by each respondent. This analysis showed which combination of observed characteristics contributed most to the respondent's first choice of favorite location and the respondent's first choice of most atmospheric location.

Although the explanatory power of the models is limited, some observed characteristics appeared to significantly influence the shoppers' preferences. The results showed that the most favorite shopping area does not need to be the most atmospheric shopping area. Nonetheless, adjusting shopping areas to the atmospheric characteristics that contribute significantly to consumer's appreciation will help shopping center managers and developers to improve the competing power of their shopping areas.

Emerging Strategy in Large Urban Development Projects: Real Estate Development in the Mainport and the Brainport of the Netherlands

Wouter Jan Verheul, Tom Daamen

Keywords: *Urban area development, Public private partnerships, Emerging strategy, Large real estate projects, Discursive and collaborative planning*

Within planning theory a new paradigm has been introduced: discursive planning. In this paper we want to elaborate how this concept can be applied to urban development projects. A discursive perspective on real estate development implies that there is a continuous debate about the content of specific real estate development projects, its meaning, its resources and its connections with urban policies. Especially the way connections are made between abstract urban policy programmes on the one hand and specific urban development projects on the other hand, is the central focus of our paper. We have selected two case studies in the Netherlands in our empirical data set: the case of 'Brainport Eindhoven' in relation to the 'High Tech Campus' and the case of 'Mainport Rotterdam' in relation to the 'Stadshavens project' (waterfront developments at former port areas).

This study focused on the connections and disconnections between the development of strategic urban area development projects (so-called micro-narratives) and the cities' and regions' larger social, cultural and spatial development policies (so-called master narratives). In addition to Minzberg, Ahlstrand & Lampel (1998) we will introduce a model for 'emerging strategy'. Urban development projects are a combination of strategy and emerging developments (even coincidence) as chance events that occur within the context of the project.

In the first paragraph of our paper we will introduce our research topic and outline. In the second paragraph we will describe theoretically the shift from traditional planning to deliberative and collaborative planning and we will introduce our ideas about an emerging strategy for urban development and real estate projects. In paragraph three we will explain which cases are selected and why. Based on desk research (vision documents, planning reports, notes of meetings, et cetera) and in-depth interviews with key players, we've collected a lot of empirical data which we will present in paragraph four (Brainport case) and five (Mainport case).

In paragraph six we will make a comparison between the two in-depth cases studies and we will show how an emerging strategy model can be implied in the practice of urban development. In the final paragraph seven we will present our conclusions in general for theory building as well as some application for development practices in a highly complex and interdependent world of urban development projects.

Methodology for the Evaluation of Real Options in Real Estate Development in Areas Characterized by Uncertain Scenarios

Marina Bravi, Stefano Rossi, Antonio Talarico

Keywords: *Brownfields, Real option theory, Remediation costs, Feasibility analysis, Uncertain scenarios*

The recovery of brownfield sites has been in the past and still is today at the center of urban policies that have started, set up and, in some cases, completed the main projects of urban transformation. In this regard it should be noted that large transformation areas often require a preliminary remediation before that the urban functions are established. The recovery of these areas has, among other things, the character of public interest in relation to the environmental protection and public health goals. Basically, the investment decision, concerning the development of brownfields is affected by two critical variables: the remediation costs and the market value of the area after completion of the environmental recovery. This last is in fact a complex process, which cannot be estimated with certainty, influenced by many variables, such as, for example, the cost of the single operations, the timing, the technology and the uncertainty of achieving the remediation goals (Weber et al., 2008). In the past and in many countries, the public resources were preferred to encourage the development of urban transformation projects of contaminated lands. On the contrary, the current economic scenario requires a new insight that includes the possibility of involving the private developers from the early stages of the transformation. In this regard, given the uncertainty surrounding the remediation costs, some authors (Espinoza & Luccioni, 2007) have aimed to the definition of the optimal size of the investments, able to make feasible the land transformation from the financial and economic point of view, through the Real Options Theory (ROT). In this light, the work attempts to argue and support the application of the ROT, considering a contaminated area where the plan allows the change from industrial to residential and commercial use, but where the remediation costs are unavoidable. The numerical example, that is solved using the Black & Scholes formula, shows that, the higher is the volatility – the uncertainty – of the transformation value of the land, more the deferral option value is increasing. After a year, the landlord will proceed with the remediation, only if the market value of the land is greater than the cost of its recovery; otherwise it will not. As a result, the payoff for the landlord is obtained from the maximization of the value added and from the sales price of the land, that, in turn, will result from the transformation value.

Measurement of Land Fragmentation in the Course of Building Activities

Tzu-Chin Lin, Fang- Hsin Huang

Keywords: *Land fragmentation, Gini coefficient, Land assembly, Hold-out, Multi land ownership, Land redevelopment*

Fragmented land ownership is widely believed to be responsible for the difficulties in assembling the contiguous land parcels for a more dense development. In order to acquire a large number of small land parcels, an often excessively-high price needs to be paid, if and only if all the owners finally agree to the price. Even if all parcels are assembled, the soaring land price is to a large extent responsible for a high housing price. It has been therefore in many studies concluded that the fragmentation of land ownership tends to lead to an inert supply of land, and given a strong demand, will subsequently contribute to an elevated housing price.

The above arguments seem to fit well into the scenario of Taipei City. Taipei is the capital and largest city in Taiwan, with a density of 9,593 inhabitants per km² and a growing, though steadily, number of households. In addition, the housing price in Taipei has been overvalued by 38% and 27% compared to the fundamental prices derived from price/income and price/rent relationship, respectively. In order to accommodate the expanding demand for housing, fragmented land has to be assembled to pave way for the later development. In other words, developers will constantly purchase and consolidate small parcels into a larger one in a single ownership prior to the construction of new houses. Despite the theoretical and practical significance, little research has looked into the measurement of land fragmentation and the changes in the degree of fragmentation in the course of building activities. Understanding of land fragmentation is crucial for a comprehension of how land is priced, and how land is assembled and developed.

This study examines in-depth the area of Wan-Hwa train station where was developed earliest in Taipei. We analyse the changes in land titles of every single parcel from 1970s through 1990s that cover at least two property cycles. Developers over the course of two property cycles must have engaged in land assembly for their building projects. Borrowed from other research fields such as agricultural productivity and income inequity, we apply Gini Coefficient, Simpson Index and Januszewski Index respectively to measure the distribution of land titles (shares) in this area over time. We will also examine the changes in the degree of land fragmentation within the context of property cycles. It is hoped that through observation of changes in the distribution of ownership on land, how land is assembled and buildings supplied in a city where housing affordability is a daunting problem can be better understood.

Factor Affecting Repatronage Intentions of Male Customers on Entertainment Services

Manupol Jariyagodchakorn, Supeecha Panichpathom, Atcharawan Ngarmyarn, Jittaporn Sriboonjit, Yawaman Metapirak

Keywords: *Entertainment, Repatronage, Male customer, Ambience, Design and feature*

Entertainment business is one of a profitable business in Thailand. Many shopping centers in Thailand especially in “Bangkok Metropolitan” have entertaining sections to attract customers to visit the centers more often. Though customers of entertaining business are not restricted to a particular gender, male customer is known to be more interested in using entertaining services comparing to female customer. The framework of this study adopted Hart (2007) model of shopping experience enjoyment, together with the model of entertaining shopping experience by Ibrahim & Wee (2002). This paper studies male entertaining experience on repatronage intentions to visit entertaining department within shopping centers. The total of 264 samples was drawn from single male customer aged between 20-32 years old, living in Bangkok, who had ever used entertaining services in the shopping centers. 145 samples are collected from personal interview and 119 samples are collected from on line survey.

A Model for Integrating Institutional Analysis with Mainstream Economics in Quality-Led Property Development

Ilir Nase

Keywords: *Neoclassical economics, Development models, Behaviouralism, Institutionalism, Urban design quality*

This paper seeks to bridge the gap between theory and practice in delivering quality places through urban design. It complements the behavioural-based theoretical concepts of neoclassical economics with the institutional analysis in property development from the perspective of adding value through quality design. This approach focuses on the drivers and the relationship between actors in the planning, design and development process. The paper follows a sequential path of incrementally building a framework of institutional analysis to eventually present a model for delivering quality in the built environment. The final product presents a 'meso-range' theoretical framework that links concepts of neoclassical economics to institutional analysis and follows two principles. First, mainstream economics and institutionalism in property development should be complementary rather than exclusive of each other. This is based on the concept that institutional analysis and behavioural theories can be used complementarily to understand and describe the delivery of a value added product through the property development process. Second, since very little of the broad economic perspectives have been applied to the property discipline, there should be a theory with an economic focus that serves to support and link institutional models.

Shovel-Ready? An Empirical Investigation of Stalled Residential Sites

Patrick McAllister, Emma Street, Peter Wyatt

Keywords: *Stalled sites, Development, Viability, Planning*

Through economic booms and slumps, the supply of housing has failed to keep pace with demand. The political solution to this problem has consistently focused on the supply side of the equation. The speed of the economic downturn in 2007/8 left many developers with extant planning permissions for residential developments across the country. The Government believes that if it can persuade developers to 'get Britain building' this will provide a Keynesian kick to the economy and go some way to addressing the supply and demand mismatch. But as moribund economic conditions continue, it is clear that sites are not being developed in significant numbers; they are "stalled". But why are they stalled, how many dwellings do they represent, where are they and what sort of housing schemes are involved? Organisations such as the Local Government Association and the Campaign for the Protection of Rural England have argued that the supply of housing sites is adequate with planning permission for over 400,000 housing plots unimplemented. The typical opposing view from the House Building Federation is that "Too many sites are now 'under water' due to charges levied on them by central and local government.

Planning Conditions of Investment Activity in Poland

Katarzyna Kania, Agnieszka Telega, Joanna Wegrzyn

Keywords: *Planning conditions, Investment process, Zoning plan, Building permission*

Zoning plans are the basic legal acts regulating spatial planning in Poland and they determine the rules of building and development of land by investor. Local government is not obliged to draw up the plans. The content of plans does not necessarily cover the entire territory of municipality. Nowadays not all municipalities have current plans and hence the planning situations can differ a lot. One of the consequences is that formal determinants of predevelopment phase investment process are different. Investor who wants to build on land without zoning plan is required to apply for planning permission prepared for each person.

The next step to start building process is obtaining building permission. In practice that, the most important determinant among the conditions which have the greatest impact on investment decision is planning situation.

The purpose of article is researching the impact of changeable planning conditions on investment activity of real estate developers in chosen cities in Poland. Authors want to verify the research hypothesis, which is the investment activity is increasing on the areas which are covered by local zoning plans.

In order to verify the hypothesis, authors will analyze nature and territory of local zoning plans, as well as building permissions obtained both from the local planning and planning permission (particularly if the location of investment).

Office Space per Worker: Trends, Demand Implications and Impacts

Norm G. Miller

Keywords: *Forecasting office demand, Collaborative office trends, Shared office space, Standardized office space, Office investment*

This study provides some insight into space per worker trends that are critical to any model forecasting future office space demand. A framework of analysis is provided that tries to bring goals and aspirations of cost conscience space planners into reality by considering lease terms, employee churn or turnover, time to fill positions, the growth rate of the firm, and other uncertainties that affect space utilization rates, for example, policies towards standardized space or sharing non-dedicated space or the types of space utilized by the firm including the need for collaboration. Culture, cost, firm size and industry type considerations are compared but the focus is upon the space per worker trends that affect the ability of a firm to use space efficiently as well as affect all future forecasters of office demand based on employment projections. Some consideration is given to alternative workplace strategies as well as the effect of natural light, better ventilation and better temperature control on productivity.

Quantifying External Benefits of Private Property-Led Urban and Real Estate Development Projects through Event Studies

Stefan Thiel, Michael Nadler

Keywords: *Property-led development, External benefits, Indicators, CBA, Event study*

Purpose - The main objective of this paper is to illustrate the prospects but also the limits of quantifying external benefits of urban and real estate development projects using the method event study. Another objective is the comprehensible derivation of an appropriate controlling system in step with actual practice.

Design/methodology/approach - We first provide a general theoretical background by determining the factors for urban and real estate projects and by highlighting the increasing importance of cooperative models. The presentation of the event study builds the methodological framework for the quantification of external benefits. Further, we develop a systemization of external benefits using a set of four dimensions: targets, stakeholder, space and time. Based on this, the project example Le Quartier Central (Duesseldorf) then serves both, clarifying the achieved systematization and applying the method event study.

Findings - Existing measurement and controlling instruments are only of limited use for the striven extensive analysis of external benefits in a management and controlling process. A combination or enlargement of the existing instruments (e.g. CBA or event study) towards an integrated controlling approach seems to be necessary at this stage.

Research Implications - Further research should focus on the application of suitable methods to measure or pricing external benefits within a controlling framework.

Practical implication - The intended outcome of this paper is an increasing awareness of the importance of analysing respectively measuring external benefits of urban development projects followed by an increasing application of controlling methods in the field of urban planning.

Originality/value - The results of this paper are of high value for practitioners in several fields of urban planning, e.g. municipal planners receive methodological support in all stages of a project life cycle to assure sustainable urban development.

Concept Mapping and Meaningful Learning in Real Estate Education

Rogério Fonseca Santovito, Joao da Rocha-Lima Jr

Keywords: *Andragogy, Meaningful learning, Subsumers, Real estate, Concept map*

Purpose - This paper describes a multi-year research, developed to verify the validity of Concept Mapping as a resource to promote meaningful learning, in order to cope with students' heterogeneity in a real estate education environment.

Design/methodology/approach - Three quasi-experimental, multi-year case studies were conducted at the Real Estate Management discipline of an MBA course. Each time the discipline was given, the procedure was to develop activities that involved the drafting of concept maps about specific topics on Real Estate Management; more specifically, the alignment between business strategies and real estate management. After each activity, the maps were analyzed in terms of the nature of concepts, their relations and hierarchy. The effects of the use of Concept Mapping on students' learning experience were then analyzed.

Findings - The results show a clear evolution between the concept maps produced at phase 01 (diagnostic evaluation) and phase 02 (months later), but the most important thing is that after months from phase 02, when the same activity took place in another context (phase 03), students were able to develop concept maps as complex as the ones produced at phase 02. The findings support the assertion found in literature that the knowledge acquired through the use of concept maps is anchored in students' prior knowledge, consolidating itself as new subsumers in students' cognitive structure. The use of Concept Mapping helped the educator to cope with students' heterogeneity in terms of professional experiences and academic backgrounds.

Research limitations/implications - Due to the non-randomization of the students, this research does not allow a generalization of the findings, but it does provide empirical evidence that supports the didactic use of Concept Maps in real estate education. Some practical difficulties related to the drawing of the maps were occasionally related, and future research will try to evaluate whether or not more agile, software-supported Concept Mapping techniques are appropriated to be used within this didactic framework.

Originality/value - There is no bibliography on concept mapping techniques applied to real estate education. In this paper an overview of concept mapping is provided, and presented as straightforward way to cope with student heterogeneity.

Advanced Education in Real Estate Management: Experience from an Interdisciplinary and International Approach

Tom Geurts, Peter van Gool, Kristin Wellner

Keywords: *Real estate education, Interdisciplinary, Real estate practice, International corporation, Survey*

Based on the description of a sample Real Estate Management master classes at the Technical University Berlin, which is offered in cooperation with the George Washington University (GW) and the University of Amsterdam, the authors discuss the outcome of an interdisciplinary and international study program.

The result is a set of special and unique experiences, with a wide range of diverse items, for example technical, economical, financial, ecological, planning and law matters, as well as the impact of different lecturers from different nationalities.

An important segment of this education is the connection to the real estate practice with semester projects. A semester project helps students to learn in interdisciplinary groups, as well as on their own, with actual cases of existing properties. All these items illustrate a number of imported outcomes. An auxiliary question is why students choose this avenue of advanced education.

The authors will provide results from a current survey to provide answers. Finally, the authors discuss the future of this educational approach with its threats and opportunities.

Property Industry Sandwich Placements: Impact on Students' Degree Classification and Employability Prospects

Keith Lown

Keywords: *Employability, Graduate employment, Work experience, Degree classification, Sandwich placement*

Purpose - The purpose of this research is to provide an analysis of the Nottingham Trent University's Property Management & Development department's sandwich placement scheme which provides students with the opportunity to undertake 12 months industry based work experience. The aim of the research is to determine the desirability of completing a sandwich placement in relation to the final degree classification achieved and graduate level employment secured. The department offers both a full time and a sandwich route to students studying on each of its undergraduate courses. This enables students to secure 12 months work experience in the property industry before returning to complete their final year and eventually graduate.

Design & Methodology - The study comprises the following:

1. An analysis of the statistics relating to the proportions of each cohort that opt for the sandwich route over the last 3 academic years – 2010/11- 2012/13.
2. A consideration of the nature of work and types of companies where sandwich placements are undertaken.
3. A summary of the process developed by the University to oversee, promote, process and manage placements.

Practical Implications - The research has the following objectives:

1. Determine whether there is a connection between the final mark and level of degree classification achieved by final year students and whether they studied via the sandwich or full time route.
2. Analysis of employability levels of sandwich students upon graduation with reference to the nature of the eventual graduate job opportunity secured, compared to that of full time students.
3. A consideration of other work experience options open to students.

Developing Real Estate Education in Brazil: A Case Study of an MBA in Real Estate Development

Emilio Haddad

Keywords: *Real estate development, Real estate education, Multidisciplinarity, Brazil*

The practice of Real Estate in Brazil has gone to several changes in recent past that have resulted in an enormous development of the industry. It has implied in increasing demand for manpower training and development a local knowledge of this emerging field. Because of a virtual lack of a "Real Estate school" in Brazil, Real Estate has been approached by different educational traditions, such as construction planning and management, Real Estate business, Real Estate finance. The purpose of this communication is to present the case of MBA in Real Estate development, an educational program that seeks a more comprehensive view of Real Estate Development in Brazil, stresses the need of Real Estate interplay with regulatory city planning, and seeks also more balance between theoretic and applied teaching.

Real Estate Education and Blended Learning: An Educational Briefing on the Implementation of a Virtual Learning Environment

Bob Martens

Keywords: *Information retrieval, Knowledge management, Virtual learning environment, E-Learning, Integrated learning*

Purpose - It is the purpose of this contribution to discuss the possible benefits of a virtual learning environment (VLE) for postgraduate real estate education activities and present considerations on the implementation of such a VLE. The paper primarily addresses people who have already heard about e-learning and are considering becoming involved in it. One of the objectives of this paper is to whet the appetite of potential users of such applications while also providing an insight into their potential usefulness. Experiences gathered in the context of a continuing-education activity at a German-speaking university are presented in case-study format and subjected to in-depth analysis.

Design/methodology/approach - Issues relating to real-estate education have grown in importance in recent years. Hence, developments regarding the exchange of information and knowledge merit closer attention. The present considerations focus on the interrelation between face-to-face learning and the virtual learning environment (VLE). This contribution presents the Moodle environment (an acronym denoting 'Modular Object-Oriented Dynamic Learning Environment'), which is used as an implementation tool. Real estate education serves as the working context and provides the third element in the triangular structure of a VLE.

Findings - Exaggerated expectations regarding the benefits of VLEs should be avoided. While face-to-face learning has not become at all obsolete, blended learning can be considered as a meaningful addition. Furthermore, the consistent 'feeding' of data into a digital repository promotes the transparency of educational activities and, thus, all aspects of quality management. Sustainable documentation is another aspect worth mentioning.

Originality/value - Apart from the intention to provide a model for others with similar needs, it is recommended that teaching institutions familiarise themselves with the different aspects of 'e-learning' and start adopting these methods. A step-by-step approach seems the most sensible.

The Significance of Capital Flows into United Kingdom Commercial Property Markets

Graeme Newell, Stanley McGreal

Keywords: *Commercial property, Property investment, Capital flows, Cross-border investors*

Global capital flows into property markets accounted for over \$800 billion in 2011. Of these capital flows, the UK is an active, major property market in a local, European and global sense. Using the Real Capital Analytics database, a detailed analysis of these capital flows is carried out for a fuller understanding of the dynamics of these capital flows to UK commercial property over 2007-2012. A range of strategic property investment issues are assessed, including the role of cross-border capital flows and investor type to UK commercial property investment. The significance of these UK commercial property capital flows is also assessed in a European and international context.

German Open Ended Real Estate Fund Performance

Michael Stein

Keywords: *German real estate funds, Performance, Liquidity crisis, Secondary market*

The liquidity crisis in the German Open-Ended Real Estate Funds (GOEREFs) industry was characterized by large outflows of money in several funds. Large and ongoing redemptions of fund shares held by both institutional and private/retail investors led to suspensions of redemptions, termination of funds and, ultimately, a new law.

This study provides the most comprehensive overview of how the funds performed and how pronounced the differences between classes of funds in the â‚¬80bn+ industry are. Using not only the net asset values of the funds as reported by the fund management companies, but the prices obtained at the secondary market when redemptions are suspended, indexes are constructed in order to provide a clear view of the performance of GOEREFs when the most relevant prices are used - those that may be achieved directly, rather than using book values. In this sense, the indexes provide a liquidity-corrected picture of fund returns.

The Determinants of Mutual Fund Starts: Is Real Estate Different?

David H. Downs, Steffen S. Sebastian, René-Ojas Woltering

Keywords: *German open-ended real estate funds, Optimal liquidity, Fund flows, Economies of scale and scope, Mutual fund family strategies*

We examine the decision to start a new mutual fund with particular emphasis on how this decision differs for the case of real estate funds. Our sample includes 1016 fund openings within the German mutual fund industry for the period 1992 to 2010. Within a logistic regression framework, the fund opening decision is related to explanatory variables at the level of (i) the investment objective, (ii) the fund family and (iii) the investment objective within the fund family. To test whether the decision is different for real estate fund openings, we interact the explanatory variables with a dichotomous variable. The results are consistent with the different considerations associated with the decision to open or start a fund which invests in direct real estate as opposed to the opening of indirect investment vehicles such as equity and fixed income mutual funds. We find that all fund opening decisions are positively related to past inflows into the investment objective – an indicator for the growth potential of the industry. Interestingly, this effect is even more pronounced for real estate funds. At the family level, we find that larger fund families and those with more fund openings in the prior period are more likely to open new funds. For real estate fund openings, the size of the fund family is not as important, whereas the total number of fund openings of the family does not increase the real estate fund opening likelihood. As is the case for all other funds, the larger the fraction of the family assets invested in real estate, the higher the probability of another real estate fund opening. This suggests that fund families tend to specialize rather than diversify their product portfolio. At the family-objective level, only the real estate fund opening decision is positively related to past inflows into existing funds. This real estate specific result highlights the importance of existing fund liquidity. Additional analysis, unique to this study, examines the associated own-product cannibalization caused by new real estate funds starts and the impact on liquidity. Overall, these results aim to enhance the decision-making of fund managers and investors.

On the Performance of Core, Value-Add and Opportunistic Private Equity Real Estate Funds: The Art of Financial Leverage

Jamie Alcock, Andrew Baum, Nicholas Colley, Eva Steiner

Keywords: *Private equity real estate funds, Performance analysis, Style analysis, Attribution analysis, Financial leverage*

We employ an original dataset of primary fund information to examine the performance of 162 global private equity real estate investment funds across the core, value-add and opportunistic investment style categories over the most recent property cycle (2001-2011). We employ a multi-factor asset pricing model to measure the impact on the funds' total excess returns of the underlying real estate market, broad managerial skill captured by 'alpha', overall financial leverage and, for the first time, specific managerial skill as it relates to timing leverage decisions to anticipated market and economic trends.

We find evidence consistent with the hypotheses that i) fund performance is almost directly proportional to the return on the underlying real estate market, ii) managerial skill as measured by 'alpha' can be virtually fully explained by fund style, leverage, sector and geography, iii) leverage cannot be viewed as a long-term strategy to enhance performance, and iii) even in the short term, managers do not seem to add value by timing leverage choices to the market and economic environment.

Public Sector Real Estate Asset Management Models and their Financial Evaluation: The Case of Estonia

Kaia Kask

Keywords: *Public sector real estate, Benefit-cost analysis, Asset management, Social discount rate, CREM*

Estonian government, having started to adopt the ideas of the theory of New Public Management, has decided to apply private sector best practices also in its public sector real estate asset management (PREAM). In order to evaluate the possible performance of the reforms, outlined to implement on the state level of real estate portfolio, a general theoretical concept of PREAM and also four basic PREAM models have been developed. According to these models, two basic views of Estonian state buildings portfolio are empirically analyzed: 1) the portfolio of general-purpose property and 2) the portfolio of special-purpose property. The results of the research is given, based on the two main analysis methods - fiscal impact analysis (FIA) and benefit-cost analysis (BCA), where the discussion about the appropriate level of discount rate application to long-term cash-flow forecast plays a significant role. Implications made out of the research should give some broader enlightenment about the problems arising from the similar kind of model-based analysis of the performance of public sector real estate asset management in other countries. The results and conclusions of the paper may be useful to countries still considering the application of improving reforms of real estate management in their public sector.

Financing Urban Redevelopment in Kuala Lumpur, Malaysia: Prospects and Challenges

Sabariah Eni, Alastair Adair, Lay Cheng, Jasmine Lim

Keywords: *Property development, Urban regeneration, Property financing, Value creation, Value capture*

Urban regeneration has always been seen as an expansive and pervasive measure to policy making decisions. Despite the challenges in this period of economic uncertainty and financial constraint, urban regeneration is viewed as a key driver of economic, physical and social growth. However sustainable economic growth demands considerable investment to finance the development and associated infrastructure. The traditional practice to finance the development is by way of public investment. This places a huge burden on governments in terms of raising sufficient investment. One possible alternative financing tool is value capture. Large public investment in infrastructure can substantially increase the value of land in close proximity to the development. Capturing the value of this benefit through land use policy and alternative financing instruments is increasingly important to urban regeneration projects. This study explores an alternative financing mechanism designed to capture the uplift in land value due to development activity. This paper examines how the concept of “value capture” in terms of its prospect and challenges can be applicable to stakeholders in urban regeneration decision making in Kuala Lumpur city centre. Here the particular interest is to explore the arguments for value capture as a tool for funding and how this does relates to land management and land markets in urban regeneration context. A case study in Kuala Lumpur demonstrates the potential for application and effectiveness of a land value capture model as an alternative financing vehicle in promoting urban regeneration. Initially a literature review is conducted on the subject matter as well as in depth interviews with the property players and discusses various aspects of its applicability in the context of Malaysia. The outcome of this paper comprises recommendations for more viable strategies and policies that land value capture offers to finance urban regeneration and make a significance contribution to research which is currently on going.

Alternative Investment Vehicles on Emerging REIT Markets: The Case of Residential and Commercial REICs in Turkey

Kerem Arslanli, Dilek Pekdemir

Keywords: *REITs, Turkish REICs, Risk premium, Return*

Turkish REICs background goes back to late 1990s and their portfolio structure diversifies between different assets. Since 2005, REICs became specialized in certain areas, such as retail, residential, logistics and hotel.

Residential REICs have a 'develop/sold' strategy while commercial REICs have 'buy/hold' strategy in Turkey. Therefore, residential REICs focus on 'developer's profit' instead of 'rental income and capital gains' and it causes high risk premium due to uncertainty in development projects. Over the period 2005 - 2010, residential investments have delivered higher returns than commercial, while return of commercial investments have been volatile.

Turkish REICs present an alternative investment vehicle for both individual and institutional investors. Investors and fund managers search for accurate information on the performance of REITs, so this paper attempt to analyze the underlying drivers of performance of total return for Residential and Commercial REICs of Turkey, over time.

This paper is a part of research project titled 'Performance Analysis of Real Estate Investment Companies and Direct Real Estate Investments in Turkey', supported and financed by EPRA.

Global Real Estate Securities Funds. An Emerging Asset Class?

Alex Moss

Keywords: *Asset allocation, Real estate securities funds, Global real estate, Portfolio management*

Purpose - The objective of the study is to examine the structure, growth, risk adjusted returns and future of the global real estate securities funds sector. Historically these funds have been straightforward actively managed funds benchmarked against an Index such as the EPRA Global Index. Recently there has been increasing specialisation, on, inter alia, emerging markets, income, and passive exchange traded funds. This study looks at the performance of these different fund types across the cycle, and examines how they can be incorporated into a modern asset allocation strategy.

Design/methodology/approach - We have used the proprietary database of funds provided by Consilia Capital for this study. Initially we have split the funds into their different mandate sub sectors (global/global REIT) then by structure (open ended / close end) followed by style (active/multi manager/ETF) and finally specialisation (income fund/emerging market, fundamental/standard index/no benchmark benchmark) and size.

We have then examined how these different Funds have performed across the cycle, both in absolute terms as well as tracking error against a benchmark. In addition we look at which strategies have been most successful in growing Assets under Management.

Findings - The number of styles within this category increased in 2006/7 with the growth of the listed sector and launch of a number of absolute return funds and hedge funds. These imploded in 2008/9 and we are now seeing the next wave of refinements to the structure, which are focussed on low cost passive funds (ETFs), income funds emerging market funds and non-benchmarked funds. With liquidity an increasingly important element of asset allocation decision making we believe that these funds will attract greater levels of capital, and suggest further refinements to the existing models, based on existing categories of general equity mutual funds.

Originality/value - It is believed that this is the first study of this nature which looks at the universe of global real estate securities funds.

Liquidity Premiums in the Global Listed Real Estate Sector 2002-2012. An Analysis of Size and Importance under Dynamic Market Conditions

Alex Moss, Nicole Lux

Keywords: *Liquidity premium, Global listed real estate, Volatility, Returns*

Purpose - The purpose of this paper is to quantify the changes in the liquidity premium for the real estate equities markets of the United States, Europe and Asia during the period of 2002 – 2012. The liquidity crisis of 2007-8 had a dramatic impact on returns, valuations and capital raising abilities of the listed real estate sector globally, and the paper focuses on understanding and explaining relative liquidity premiums under dynamic market conditions.

Design/methodology/approach - Market liquidity is measured in each market, U.S, Europe and Asia by analysing liquidity in three different dimensions of tightness, depth and resilience. We calculate percentage bid-ask spread as a measure of market tightness, market depth is given by the Hui-Heubel (HH) liquidity ratio (Hui and Heubel, 1984), while resilience refers to the speed at which the price fluctuations resulting from trades are dissipated using a Market-efficient coefficient (MEC) (Hasbrouck and Schwartz, 1988). The company data sample groups securities into large, medium and small market capitalisations across each of the three regions.

Finally the dependency of real estate firm liquidity with other securities market indicators is measured in each market, U.S, Europe, Asia by constructing the Hui-Heubel liquidity ratio on a selection of key companies and correlating this with the VIX index. A higher HH ratio indicates higher price to volume sensitivity.

Findings - In all three markets bid-ask spreads reduced significantly, and market liquidity and efficiency increased during the period of 2002 – 2007. Since that date the results have a more regional bias, and we examine the reasons behind this. The MEC confirms that European companies exhibit lower levels of liquidity than their US counterparts, and this a contributing factor behind periods of relative underperformance. We discovered a high correlation between market correlation and the VIX Index.

Originality/value - The results provide important clues for investors and real estate companies in pricing liquidity throughout the cycle and illustrates the regional differences over the period. This has important implications for investors regarding the pricing of risk, and absolute and relative returns, and for companies, in terms of capital raising ability. In addition the finding of the close relationship between RE stocks liquidity and the VIX index confirms the importance of equity market influences on public real estate valuations.

Explaining Rental Depreciation of United Kingdom Commercial Investment Properties: A Panel Regression Approach

Neil Crosby, Steven Devaney

Keywords: *Rental depreciation, Real estate investment, Performance measurement, Commercial property, UK*

This paper extends work that was funded by the UK Investment Property Forum over the last 8 years and which used longitudinal methods to measure rental value depreciation rates for commercial properties in the IPD UK annual database.

Past work has concentrated on measuring rates of depreciation and a succession of projects and papers has developed the methods of measurement and the data. A research team including Baum, Crosby, Devaney and Law (IPF, 2005) identified 10 and 19 year average rates of depreciation over a period expiring in 2003. They examined aggregate rates for the UK office, retail and industrial markets over 19 years, as well as rates for 10 IPD Portfolio Analysis Service segments for the period 1993 to 2003. Crosby and Devaney (IPF, 2011) then extended the 10 year data set to 2009 measuring rental value depreciation rates over 16 years for the same 10 IPD PAS segments.

This paper uses panel regression methods to attempt to explain the depreciation rates found within the IPF (2011) study for individual office and industrial properties. Explanatory variables such as age, location, land values and building quality indicators are tested for significance using both fixed effects and between effects panel regressions that control for unobserved heterogeneity. Age, benchmark rental growth, capital expenditure and macro-economic controls appear to exert statistically significant feedback effects on the depreciation rate. These results are reasonably robust across several model specifications and samples.

IPF (2005). Depreciation in Commercial Property Markets. Investment Property Forum / IPF Educational Trust. London.

IPF (2011). Depreciation of commercial investment property in the UK. Investment Property Forum: London.

Liquidity and Asset pricing: Evidence from the European Real Estate Stock Market

Stephan Lang, Alexander Scholz

Keywords: *European real estate, Asset pricing, Liquidity, Fama-french, Risk factors*

The purpose of this paper is to provide evidence of the ability of liquidity to serve as a systematic risk factor in real estate asset pricing models in Europe. Using general equity data of 8.500 listed European firms, we construct 18 portfolios by a three-sequential, independent sorting procedure (Size, B/M and Liquidity) to compute the common risk factors SMB and HML as proposed by Fama and French (1993) as well as a liquidity risk factor. Our empirical findings suggest that liquidity is a significant pricing factor in real estate stock returns after accounting for the established asset pricing factors. These results are robust to conditional market tests and possible country effects. Furthermore, we run a comparative analysis with alternative multifactor models and prove that the liquidity-augmented pricing model is most appropriate for explaining real estate stock returns.

Do REITs' Stock Prices Reflect Financial Information? Evidence from European REITs

Massimo Biasin, Emanuela Giacomini

Keywords: *Market efficiency, Financial information, Earnings, Disclosure, Price reaction*

There is a large amount of evidence that stock prices are predictable, some research shows that stock prices appear to drift after important corporate events for up to several months (Fama (1998)). Indeed, stock prices rather than adjusting immediately to news information often tend to drift over time. Previous literature suggests several explanations for its existence and persistence in the general stock market. For instance, the persistence of this anomaly may be due to high transaction costs (limits of arbitrage), alternatively, the drift may be a function of the type of information agents receive.

The information content of public events and of financial statements is extremely relevant for REITs since real estate assets are traded infrequently and the market has incomplete information about their true value.

In this paper, we look at stock returns after major public announcements and stock return reaction to disclosure of accounting information for a sample of European REITs from 2000-2011. Precisely, we first investigate how REIT market prices are affected by public announcements at corporate level; and then, we focus the attention on the ability of accounting information, such as accounting-based performance measures, to be informative for investors as reflected in stock return. We investigate price reactions over both short and long windows to assess whether the REIT disclosures are not only useful for explaining security returns but whether they are in fact used by investors (Easton, 1998). Finally, we investigate which market and firm characteristics effect the stock returns' reaction to information disclosure. For instance, we look at whether the number of investment analysts following a REIT effects on the speed of adjustment of the firm's stock price to new information. We expect that, ceteris paribus, REITs that are followed by many analysts react more promptly to new information than those of firms that are followed by fewer analysts.

Performance Drivers of German Institutional Property Funds

Jaroslav Morawski, Tom van den Heuvel

Keywords: *Performance drivers, Real estate funds, Spezialfonds, Panel regression*

The goal of this paper is to improve the understanding of what drives the performance of non-listed real estate funds, adding to the limited literature on this topic. We performed a panel regression analysis on the basis of an extensive sample from Investment Property Databank (IPD) covering returns and selected characteristics of German Spezialfonds over a period of five years from 2006 until 2010. The analysis was performed for the whole sample as well as separately for three distinctively different subperiods: the boom of 2006-2007, the downturn of 2008-2009 and the recovery of 2010. The analysis uncovered significant differences in the drivers across the cyclical phases. During the boom phase, leverage and global portfolio allocation positively affected returns, while allocation to Germany had a negative effect. In contrast, fund volume, management costs and allocation to offices led to underperformance. Finally, in the recovery of 2010, leverage, allocation to Germany and diversification across property types improved performance, while higher liquidity and focus on retail had a negative impact. In addition to providing extensive and unique insights into the determinants of performance of the German Spezialfonds, the results should be of interest to fund managers looking for advice on the optimal positioning of their funds in response to changing economic environments.

Capital Structure Research for REITs and REOCs

Ralf Hohenstatt, Bertram Steininger

Keywords: *Capital structure, Real estate investment trust, Real estate operating company, Financial flexibility, Leverage ratio*

This paper presents a dynamic multi-equation model based on a balance sheet identity, where technical aspects of capital structure are highlighted through separately observing debt and equity and their relationship to investment. Additionally, leverage dynamics are interpreted in their role for liquidity management. Interactions of leverage with lines of credit (LOC) and cash are considered in the light of financial flexibility. The major findings obtained by observing US REITs and REOCs from 1995 to 2010 are as follows. In accordance with the existing literature, cash and LOC reveal a substitute relationship. However, the calculus of financial flexibility and our findings suggest that leverage positively drives cash, which is consistent with Gamba and Triantis (2008), and also with the accepted perspective of debt minus cash being net debt (Spotlight A). Consequently, the very robust results indicate that leverage eliminates a significant amount of information. Further mechanical relationships, especially for market leverage, are suggested (Spotlight B).

The Problems of Real Estate Financing in the Post-Crisis Period in Slovakia

Koloman Ivanicka, Daniela Spirkova

Keywords: *Real estate finance, Slovakia, Post crisis period, Private equity funds, Real estate markets' recovery, Banking regulations*

The objective of the paper is to study the changes in the real estate financing in the post crisis period in Slovakia. Slovak transition to market economy enabled to create the booming real estate markets in the 21st century. The FDI inflows and the integration processes, inclusion to Euro zone, were the important catalysts of such progress. Yet the global financial crisis substantially decelerated existing development and revealed the vulnerabilities of the economic growth model, the institutions, public finance and banking systems. The changing macroeconomic fundamentals negatively influenced the real estate vacancies, returns, and investments. The global financial crisis had revealed the serious problems of financial markets, such as the inadequate oversight, and banking regulations. Three new important regulations: Alternative Investment Fund Manager Directive, Basel III, Solvency II aim to prevent the risky behavior of banks. Based on them, many banks have implemented very restrictive criteria for the provision of the real estate credits. At the same time banks had to resolve the problems of distressed loans. This is the opportunity for the debt companies, private equity groups, the sovereign wealth funds, the insurance companies, mezzanine lenders and other investors with flexible capital to step into the market and to take the larger role in financing the real estate developments. This tendency is well observed in the developed countries with stabilized real estate markets, good returns or low risk return, while they are less obvious in CEE (Central and Eastern Europe) region. The consequence of restrictions on the provisions of banking property credits opens the new business opportunities in real estate sector for insurance companies, debt funds, off shore funds, mezzanine funds, private equity funds, etc. The serious problem is still the high public debt, and its negative impact on Eurozone. Many investors had fled from the European periphery into the EU core also because the competitiveness issues of European periphery, including the CEE countries, are not resolved. Recovery of real estate markets in Slovakia is under the way, yet the attainment of the pre-crisis real estate boom is not very probable. Much will depend on economic growth, important institutional reforms, especially in banking, economics, and in European Union as well.

Factors Affecting Investment Decisions and Impact of German Open-Ended Funds in the City of London Office Market

Gheorghe Multescu, Martin Lake

Keywords: *German open-ended funds, City of London, Property investment market, Property and development cycles*

German funds increased their ownership levels in The City of London Office market from 0.7% of the sector to 18% between 1985 - 2006. This period of concentrated growth of ownership coincided with several peak-to-trough cycles in The City of London Office market.

The paper aims to assess the impact of the GOEFs in the passage of that cycle and determine what role, if any, they play in the movement of cyclic patterns in the UK's most prominent and diverse office market. Key theory points are assessed as part of a literature review focusing on the GOEF's sector's vulnerability to liquidity crises and legislation changes.

The findings of a combined quantitative and qualitative survey suggest that GOEF liquidity has a positive correlation with the development cycle, capital value and rental value of The City of London Office market, with liquidity of the funds partly explained by movements in City Office cycle indicators. The paper argues however that liquidity alone does not play a central factor in the investment and divestment decisions of the GOEFs in The City of London.

Are Real Estate Banks More Affected by Real Estate Market Dynamics? Evidence from the Main European Countries

Lucia Gibilaro, Gianluca Mattarocci

Keywords: *Real estate banks, Bank default risk, Real estate market trend, European market*

Real estate market trend could affect the value of both the direct exposures in property loans and the real estate collaterals of loans, therefore banks' performance and/or risk could change significantly in the case of real estate market collapse or expansion (i.a. Wheaton, 1999). Indeed, during the recent financial crisis, the real estate was features by a strong decrease in loans with respect to the before crisis period (Ivashina and Sharfstein, 2010).

Literature focuses the attention prevalently on the effect of a change in the property prices on the macro-variables and the monetary aggregates (Quigley, 1999). Only few studies look at the effect of the real estate market trend on the banks' lending policy and bank's performance (Davis and Zhu, 2004) taking into account bank's characteristics. In the analysis of the banking features, no evidence is provided on the relationship between real estate market trend and the bank's performance and risk. Moreover, the evidences provided by such studies do not control for the type the bank and the loan purpose.

Considering a representative sample of European banks and using the BIS property index for the reference country of the bank, we study the relationship between the property market trend and the bank performance / risk exposure, considering also lagged relationships and testing for any relevant causality relationship.. Following the approach proposed by Eisenbeis and Kwast (1991), we identify real estate banks in our sample and we test for the existence of any significant difference respect to other banks. Moreover, we control the evidences for the pre and post financial crisis period. Results demonstrate that real estate banks do not perform always the worse (the better) during a real estate market downturn (upturn) and the reaction to the market trend is driven also by other features of the bank.

Efficiency in the United Kingdom Commercial Property Market: A Supply Perspective

Steven Devaney, Oliver Holtemöller, Rainer Schulz

Keywords: *Informational efficiency, City of London, Office Markets, Development*

Informational efficient prices are a necessary requirement for optimal resource allocation in the commercial real estate market. Prices are informational efficient if they reflect buildings' benefit to marginal buyers, thereby taking account of all available information on future market development. Prices that do not reflect available information may lead to over- or undersupply if developers react to these inefficient prices. In this study, we examine the efficiency of the UK commercial property market and the interaction between prices, construction cost, and new supply. We employ a dataset in our study that relates to the City of London office market over the period 1972-2011. First, we assess if real estate prices are in accordance with fundamental values, thereby testing for informational efficiency. By comparing prices and fundamental values, we can measure informational inefficiency and explore possible causes for it. Second, we assess if developers reacted correctly to the price signals. Development (or the lack thereof) should be triggered by deviations between fundamental values and cost; if prices do not reflect fundamental values, then they should have no impact on development decisions. We study empirically whether or not this was the case in what is commonly held to be one of the most mature and transparent real estate markets in the world.

Performance Drivers of United Kingdom Unlisted Real Estate Funds

Kieran Farrelly, George Matysiak

Keywords: *Unlisted funds, Asset pricing, Investment, Financial performance, Risk, Leverage*

An unlisted real estate fund is a private investment vehicle, which aims to provide direct real estate total returns and may also employ financial leverage which will accentuate performance. They have become a more prevalent institutional real estate investment conduit since the early 2000's. Investors have been primarily attracted to them due to the ease of executing a real estate exposure, both domestically and internationally, and for their diversification benefits given the capital intensive nature of constructing a well diversified commercial real estate investment portfolio. However, despite their greater prominence there has been little academic research conducted on the performance and risks of unlisted real estate fund investments. This can be attributed to a paucity of available data and limited time series where it exists. In this study we have made use of a dataset of institutional UK unlisted non-listed real estate funds over the period 2003Q4 to 2011Q4, using a panel modelling framework in order to determine the key factors which impact on fund performance. The sample provided a rich set of fund factors including market exposures, direct real estate characteristics and the level of financial leverage employed. The findings from the panel regression analysis show that a small number of variables are able to account for a significant proportion of the performance of unlisted real estate funds. These variables should be considered by investors when assessing the risk and return of these vehicles. The impact of financial leverage upon the performance of these vehicles through the recent global financial crisis and subsequent UK commercial real estate market downturn was also studied. The findings indicate a significant asymmetric effect of employing debt finance within unlisted real estate funds.

Real Risk-Adjusted Performance and Capital Structure: Theory and Evidence from Real Estate Investment Trusts

Jamie Alcock, Eva Steiner

Keywords: *REITs, Inflation hedging, Capital structure, Real risk-adjusted performance*

Firms can choose a capital structure that maximises real risk-adjusted performance by matching nominal liabilities with nominal assets. In doing so, firms minimise the sensitivity of real risk-adjusted returns to unexpected inflationary shocks. We develop a model of real risk-adjusted performance as a function of nominal and real assets and liabilities and demonstrate the solution to the maximisation problem. We explore the empirical support for our theoretical prediction using a sample of US Real Estate Investment Trusts (REITs), as their regulated business model allows for a straightforward distinction between real and nominal assets and liabilities. We find evidence that firms observe the predicted linear relationship between nominal assets and liabilities, and that real risk-adjusted returns to firm equity are inversely related to deviations from the optimal nominal liability holdings, as are inflation hedging qualities of investments into the firms' equity. Lastly, firms' holdings of nominal debt appear to increase in times of higher inflation uncertainty, supporting the notion of nominal liabilities as a buffer against unexpected inflationary shocks.

Commercial Real Estate and Nonlocal Investors: Price Disparities on Entry and Exit

Yu Liu, Paul Gallimore, Jon Wiley

Keywords: *Investor behaviour, Information asymmetry, Anchoring, Market efficiency*

We investigate whether nonlocal buyers of real estate pay different prices for similar assets as compared to local buyers. An efficient real estate market would operate against this but empirical studies leave the question unresolved. While some studies fail to detect or confirm price differences (Turnbull and Sirmans, 1993; Watkins, 1998; Clauretie and Thistle, 2007), other studies do detect them (Miller et al., 1988; Lambson et al., 2004; Ihlanfeldt and Mayock, 2012). Most studies of the question have utilized residential real estate and have focused on owner-occupiers. Two studies have used investors, but these have each considered only a single market (Phoenix; Las Vegas). We extend the literature in this study by examining investors in office properties across 138 US markets and, uniquely, by considering the question of price differences when investors sell as well as buy. We investigate this using a CoStar database of 10,971 purchases and 11,444 sales between 1996 and 2012. Aware of limitations in some previous studies, we use a propensity score matching approach to produce matched samples that reduce the potential effects of conflating factors such as selection bias, investor clienteles (Wiley, 2012) and marketing duration. We find nonlocal investors significantly overpay on purchase by an estimated 13.8% relative to similar assets purchased by local investors. We attribute this to a combination of information asymmetry and anchoring (by those investors from markets whose prices are higher than where they buy). We find that, upon exit, nonlocal investors sell a discount of 7% relative to similar assets sold by local investors. This is again attributable to information asymmetry but is not explicable by anchoring. Overall, nonlocal purchases and sales result in significant relative capital value underperformance.

Securitized Real Estate Regime-Switching Behaviour and the Relationship with Market Interest Rates

Alexey Akimov, Simon Stevenson

Keywords: *REITs, Public property companies, Interest rates, International real estate, Asymmetry*

This paper examines the regime-switching behaviour of the six major international securitized real estate markets by utilizing the Dynamic Markov-Switching methodology. Using crises-rich sample period of 1993-2010, we find that international securitized real estate returns can be sufficiently characterised by two distinct domestic regimes of high return-low volatility and low-return high-volatility that are substantially different from the underlying stock markets in terms of the duration and risk-return characteristics of the regimes in each market. The presence of two distinct regimes provides new international evidence on the sector's relationship with interest rates and the fact that securitized real estate reaction to unexpected market interest rate changes is of the asymmetric nature.

We also analyse each countries securitized real estate volatility reaction to the state-dependent measures of the interest rates uncertainty using GARCH models. GARCH models are augmented with conditional volatilities of the interest rate variables and are estimated with the maximum likelihood functions suggested in Bollerslev & Wooldridge (1992). We find that the volatility of securitized real estate markets is affected by the interest rates uncertainty across our sample. Moreover, we find consistently that higher variance in securitized real estate is associated with either the absolute change or increased conditional volatility of domestic interest rates. The asymmetry in the variance sensitivity to interest rates is dominated during regimes shifts within the listed real estate sector and not the overall stock market. In the latter case, the evidence of asymmetries in variance is much weaker. A potentially mistaken assumption that securitized real estate markets are driven by the underlying stock markets explains a lack of significant findings in Chen et al. (2012). One the last two findings reveal a counter-cyclical behaviour of the securitized real estate sector when compared to the stock market. Therefore, the real estate sector yet again can be viewed as a separate market from the general equities. This can be potentially useful from the portfolio management point of view since we find that the impact of the potential risk proxies is weaker during the periods of the general market instability.

Performance and Cash Flow Drivers of Private Real Estate Funds

Kieran Farrelly, Simon Stevenson

Keywords: *Unlisted funds, Finance, Investment, Performance, Performance persistence*

This study makes use of a unique dataset of predominantly US and global closed-ended unlisted real estate funds to investigate their performance characteristics. The sample covers multiple vintage years and includes a number of fund specific features. These are used to identify the key performance drivers of these vehicles through cross-section regression analysis. Particular attention is paid to the study of the performance persistence of managers. We also are able to make use of detailed cashflow histories for a number of the funds. This enables us to explore the investment timing abilities of fund managers and the determinants of both capital drawdown and distribution rates.

Change of the Tools Used for Real Estate Risk Analysis

Rafal Wolski, Magdalena Zaleczna

Keywords: *Risk, Measures, Real estate, Capital market, Investment*

Market situation fluctuates under the pressure of macroeconomic factors between periods of strong growth and deep fall passing through shorter or longer periods of stabilization. The real estate market was traditionally considered as a competitive in relation to the stock market, experiencing declines and economic growth at a different time. From this point of view the real property added to the portfolio of an investor can give the risk reduction through diversification. This approach suggested the use of specific risk measures. However, the authors pose the hypothesis that the observed changes in the nature of the contemporary instruments of real estate market require a change of the tools used for risk analysis. The authors test the nature of real estate investment by analyzing results of direct and indirect real estate instruments used on the Polish real estate market and confront them with instruments used on the capital market.

Capital Expenditures for Fixed Asset in Private and Public Sector: Polish Experience

Anna Wojewnik-Filipkowska, Krzysztof Szczepaniak

Keywords: *Infrastructure, Capital expenditures, Fixed assets, EU funds, Poland*

Poland is one of the largest net beneficiaries of European Union funds. Many investments were completed in the public and private sectors in Poland in 2005-2010 thanks to EU funds, which had a positive impact on the situation in the construction sector in Poland. We will investigate which sectors received the largest expenditure for fixed assets and to what extent these investments were related to EU funds. We will carry out a thorough analysis of the available statistical data on fixed asset investments in the private and public sectors in 2005-2010. The aim of the research is to assess the relationship between the available resources from EU funds and the economic situation in the construction sector. Some experts argue that the lack of EU funds will significantly worsen conditions for the development of the construction sector and will increase unemployment. We decided to verify this thesis. The results of the research will also determine if the trends in capital expenditure on fixed assets in the public and the private sectors in Poland are similar to other European Union countries. Moreover, however, the results could be used to develop plans to reduce the negative effects of downturn in the construction sector in Poland. The research over Polish experience may also support other countries. The research results will depend on the completeness and quality of data collected.

Inflation-Protecting Asset Allocation: A Downside Risk Analysis

Tim Koniarski, Steffen S. Sebastian

Keywords: *Downside risk, Inflation-hedging, Asset allocation, Vector autoregression*

This paper studies the ability of cash, bonds, stocks and direct real estate to hedge inflation and optimal inflation-protecting asset allocations within a downside risk framework. Using a VAR model to capture predictable price dynamics, we find that the inflation-hedging properties of assets substantially change over the investment horizon. Cash clearly hedges inflation best in the short run. However, as the investment horizon increases, bonds, stocks and real estate become more attractive with respect to inflation-hedging. Real estate has the best qualities to protect investors against inflation on a medium and long-term basis. While cash plays the most important role in short-term portfolios, the weights of the inflation-protecting portfolios shift to real estate, stocks and bonds as the investment horizon increases.

Real Estate Fund Active Management

Giacomo Morri, Stephen Lee

Keywords: *Active share, Tracking error, Real estate funds, Performance, Portfolio allocation*

The traditional measurement of active management is to calculate the tracking error of the fund; as measured by the standard deviation of the difference in a fund's returns versus its benchmark returns. However, tracking error alone is an inadequate measure of fund activity since even very actively managed funds can in fact generate rather low tracking errors. Therefore judging the activity level of a fund based solely on tracking error can be misleading. In addition, while tracking error volatility is easy to calculate, it only infers what the manager is doing at the portfolio level and does tell you how the tracking errors were generated. For instance, Cremers and Petäjistö (2009) argue that the two distinct approaches to active management, stock selection or factor timing, can produce significantly different tracking errors. Therefore, instead of using tracking error alone, Cremers and Petäjistö (2009) suggest that a more comprehensive picture of active management can be achieved by including Active Share into the calculations, where the Active Share of the fund is measured by the weighted difference between the fund's holdings and those of the benchmark portfolio. In other words, Cremers and Petäjistö (2009) claim that using Active Share and tracking error together enables investors to distinguish between the types of active management used by funds, stock selection and factor timing, and so identify whether the fund is using one of the following active management approaches: diversified, concentrated, factor bets, moderately active and closet indexers.

The Case for Risk Parity as an Alternative Strategy for Asset Allocation in Real Estate Portfolios

Mutale Katyoka, Simon Stevenson

Keywords: *Risk parity, Risk allocation, Diversification, Estimation error, Risk contribution*

Following the recent financial crisis, the need for diversification cannot be over emphasized. This notwithstanding, some concerns have been raised regarding the efficacy of the conventional asset allocation methods. These traditional strategies encompass equal weighting, minimum variance, and mean- variance optimization based on modern portfolio theory (MPT). MPT remains the most widely used method despite its inherent estimation error in the determination of expected returns and correlations. Portfolio construction using MPT in real estate presents similar challenges where naive diversification is predominantly used to diversify portfolios. Thus, these conventional strategies have been questioned especially in the wake of the financial crisis due to poor performance of portfolios.

This paper introduces an alternative strategy of asset allocation called 'risk parity' to real estate portfolios by using the framework from mainstream finance. In contrast with the traditional strategies, the aim of risk parity is equal risk allocation across asset classes in a portfolio. To achieve the broad aim, the paper relies heavily on a systematic analysis of listed as well as direct real estate to ascertain whether risk parity provides a better alternative to the traditional allocation strategies employed in the real estate market. The paper argues that compared to the traditional allocation strategies, a risk parity based portfolio is likely to produce superior risk-reward tradeoff. Utilizing risk parity strategy in constructing a portfolio does not require the creation of expected return assumptions as only the asset class covariances are needed. These covariances can be more accurately estimated from historical data than expected returns. In lower risk portfolios, leverage can be employed in order to increase return expectation while derivatives can be used as a way to attain desired market exposures more safely and inexpensively.

The City of London Office Bias

Stephen Lee

Keywords: *Institutional office portfolios, City of London bias, City office weight, Economic cost*

It is well known that institutional investors are noticeably overweight in the City of London office market and substantially underweight in offices in the rest of the UK. An economically sensible way to measure this bias is to calculate the additional required return on offices outside the City of London necessary to tilt the intuition's allocation away from that observed. In other words, in a world without any bias, this number would reveal how much return offices outside of the City of London would have to exceed those in the City to motivate investors to diversify their holdings into other markets. Using quarterly data from 2001-2011 the results indicate that this bias is large and cannot be easily explained by lot size, illiquidity, and familiarity.

The Restructuring of the Institutional Real Estate Portfolio in United Kingdom

Neil Dunse, Colin Jones, Nicola Livingstone

Keywords: *Portfolio restructuring, Temporal patterns, Investment change, Property cycles, IPD data*

The last three decades have seen substantial change in real estate portfolios of financial institutions. This paper begins by first charting this restructuring of the institutional real estate portfolio between industrial, offices and retail classes over the last thirty years in the UK. This restructuring will be disaggregated over different timescales from say decades down to individual years. The research will therefore seek to distinguish short term, medium term and long term temporal patterns of investment change. It will then assess to what extent these components are linked or can be explained by reference to the internal dynamics of property market cycles, levels of transactions activity and investment returns. Time lags in causal relationships will also be assessed. The empirical analysis will be based on the IPD database. Finally some general conclusions will be drawn.

Preliminary Proposition of a General Theory of Property Investment Decision Making

David Parker

Keywords: *REIT, Fund, Decision-making, Investment, Australia*

Following an extensive literature review (Parker 2011a), the property investment decision making process was hypothesised to be linear, sequential and circular in form comprising 30 steps capable of classification into six stages and three phases. Based on the findings of semi-structured interviews with ASX200 REIT CEO's, the hypothesis was found to be supported for Australian public funds (Parker 2011b). Further, following semi-structured interviews with principal and senior decision makers within Australian wholesale property funds, the hypothesis was also found to be supported for Australian private funds (Parker 2012). Based on the findings of this previous research, the similarities and differences in property investment decision making between Australian public and private funds are considered with a view to identifying whether a general theory of property investment decision making may be proposed, for discussion with and feedback from ERES conference delegates.

Identifying Switching Signals Across the Four Quadrants of Real Estate: A United Kingdom Case Study

Alex Moss, Malcolm Frodsham

Keywords: *Risk and return, Four quadrants, Pricing signals, UK cycle*

Purpose - The purpose of this paper is to identify and quantify the importance of the major market factors driving the relative risk and returns across all four real estate quadrants (public/ private, debt/ equity) in the UK over the period 1992-2012, and to identify the pricing signals for investors to alter portfolio weightings across the four sectors at different points in the cycle.

Design/methodology/approach - For consistency we have taken the IPD All Property Index as a proxy for the returns available in the direct market. This represents the base case ungeared returns available. We have then replicated each of the four quadrants as follows: 1) Listed real estate – we have geared the direct real estate returns using the actual LTV ratios throughout the period of a leading UK company, and replicated the impact of a listed valuation by applying the EPRA discount /premium to NAV to the underlying NAV changes. This allows us to decompose returns into separate gearing and valuation impacts. 2) Listed debt – we have used the return and volatility series of listed real estate bonds available throughout the period 3) Unlisted real estate . We have looked at the IPD Index, AREF leverage ratios and secondary market pricing to replicate these returns, and 4) Unlisted debt – we have modelled these returns using available data and assumptions regarding fees, LTVs and delinquency rates.

Findings - We aim to show, using the listed sector as a leading indicator, the pricing signals to switch portfolio weights through the cycle using all four quadrants available to investors.

Originality/value - We believe that there is a lack of literature on this topic, in particular focussing on the interdependence and relationships between the four quadrants. By using a consistent measure for direct market returns and then constructing the risk and return for all quadrants rather than using disparate indices we believe we provide a more consistent methodology for evaluating the risk and return characteristics than has hitherto been undertaken.

Sustainable Real Estate and it's Effect within a Multi-Asset Portfolio

Peter Geiger, Marcelo Cajias, Franz Fuerst

Keywords: *Social responsible investment, Sustainable real estate, Portfolio optimisation, Asset allocation*

Current research on sustainable property investment focuses mainly on property-level profitability of green buildings along with the development and implementation of eco-certifications. A second strand of studies investigates the company-level financial implications of corporate social responsibility agendas. This paper seeks to expand the current literature by analysing the effect of responsible investments within a multi-asset portfolio optimisation model. It also attempts to bridge the existing gap in the real estate literature between sustainability principles and investment analysis. To this aim, listed real estate companies with an active sustainability agenda are identified as the sustainable real estate asset class. Applying a number of robust optimisation techniques, we establish empirically whether diversification benefits can be achieved by investing in companies with a proven track record in sustainability. The results of the study highlight the potential contribution of listed real estate companies with high sustainability ratings to an institutional investor's portfolio taking into account differences in investment style and risk aversion.

ESG = Environmental, Social and Governance

The Significance and Performance of United Kingdom REITs in a Mixed-Asset Portfolio

Graeme Newell

Keywords: *UK REITs, Risk-adjusted returns, Portfolio diversification, Post-GFC performance, Future property implications*

UK REITs have been established since 2007, taking on increased significance in recent years as part of the global REIT markets. This paper assesses the significance, risk-adjusted performance and portfolio diversification benefits of UK REITs in a mixed-asset portfolio context in the UK over 2007-2013. The impact of the GFC on UK REITs and the post-GFC performance of UK REITs is also assessed via sub-period analysis, as well as the strategic implications for the future development of the UK REIT market.

Do Specialised REITs Outperform Diversified REITs during the Credit Crunch?

Leonard Daniel Lin

Keywords: *Specialised REITs, Diversified REITs, Portfolio construction, Credit crunch, REIT return-risk characteristics*

This study looks at the return and risk characteristics of the Diversified and Specialised REITs in the UK over the last four and half years commencing January 2007.

The methodologies used in this study incorporate some simple statistic tools, multiple factor Sharpe ratio regression, and portfolio construction and use of efficient frontier models.

In summary, the hypothesis that the Specialised REITs can perform better than the Diversified counterpart during recessions can be supported. The Diversified REITs show a moderate return with lower level of volatility. However, the Specialised REITs track the market more closely. The Office REITs and Retail REITs produce significant impact on the risk-adjusted performance.

The Specialised REITs portfolio under the equal-weighted portfolio construction produces a better mean return at a similar level of the volatility, than the Diversified REITs portfolio.

Real Options Approach for Valuing Green Certificates

Jussi Vimpari, Seppo Junnila

Keywords: *Real option valuation, Green certificate, Investment valuation, Uncertainty*

It seems that there is not a clear consensus among industry professionals on how green certificates should be valued, even though, there seems to be a consensus that certified properties are potentially valued higher than non-certified properties. This study aims to find out whether the potential extra value of a green certificate could be measured with real option valuation (ROV). Data was gathered from industry professionals using a standard discounted cash flow valuation method constructed in a spreadsheet. ROV was applied in the data using Collan's pay-off method. The results show that an average real option value of 985,000 Euro (or 8.8% premium to the average property value) was found for the green certificate. The main finding is that by examining the certificate as a real option, the potential extra value of a green certificate could be added into min and max case scenarios, thus, making it not necessary to alter the normal cash-flow scenario that should be based on the comparable data available from the market which is scarcely available for certified buildings.

Relevance of the use of YP[Dual Rate] in the Valuation of Leasehold Interests in Contemporary English Practice

Raymond Abdulai, Anthony Owusu-Ansah

Keywords: *England, Dual rate, Valuation, Leasehold interests*

The purpose of this paper is to empirically investigate the extent to which the use of YP [Dual rate] model for leasehold valuation actually reflects market conditions in practice in England. The qualitative research methodology is adopted where interviews have been conducted via face-to-face and phone with 105 purchasers of leasehold interests in the residential Cressington Heath neighbourhood of Liverpool in 2012. The analysis of the data has been facilitated by the use QSR NVIVO 10 to code the data. It has been established that purchasers of leasehold interests rarely make provision for an ASF in practice. Indeed, what actually happens is the direct opposite of what the model posits - purchasers borrow from banks to procure the property after which they commence paying back by instalments periodically. Also, there are other methods that can be used to make provision for future expenses but the use of the YP[Dual rate] model implicitly assumes that ASF is the only approach, which is unsustainable.

Using the model for every leasehold valuation leads to undervaluation of such interests where investors do not actually use the ASF method in practice and the undervaluation is even more pronounced when taxation is introduced. The model should only be considered when a valuer is confronted with a practical situation where the ASF method is used or will be used by a leasehold investor. This study is based on empirical evidence and it is the first of its kind in the UK - arguments against or in favour of the use of the model tend to be theoretical or based on personal opinions uncorroborated with any empirical evidence.

Accurate Statutory Valuations

John MacFarlane

Keywords: *Estimation, Statutory valuation, Quality assurance, Bayesian*

In many statutory valuation jurisdictions, the penalty for over-valuation is greater than the penalty for under-valuation. This follows the principle that tax payers should not knowingly be over-charged when applying ad valorem taxes.

In NSW, the main standard for valuation accuracy is framed in terms of the mean value price ratio (MVP). The prior standard for the MVP has been a range of 85% to 100%. That is, a reasonable level of under-valuation is tolerated but not so any level of over-valuation (MVP above 100%). At present, this standard is being reviewed with a suggested range of 90% to 100%.

Clearly, a standard for the accuracy of valuations is impacted on by the variation in valuations. This raises a number of considerations. What should be the target level of valuation accuracy in an asymmetric penalty environment? What is an appropriate standard for valuation accuracy and how is impacted by different levels of valuation variation (as will occur for different classes of property)?

These issues will be considered in the paper. Penalised least squares and Bayesian approaches will be considered.

These ideas may also be applicable in other property applications, such as for investment allocation decisions, where under-performance may be penalised much higher than over-performance.

Contingent Valuation: How Accurate is it when Valuing Impacts on Property Values?

Judith Callanan

Keywords: *Willingness to pay, High voltage transmission lines, Effect on property value, Contingent valuation*

Purpose - The purpose of this paper is to determine the accuracy of Contingent Valuation when assessing the value attached to the presence of a negative environmental impact, such as High Voltage Transmission Lines (HVOTLs)

Design/methodology/approach - A case study was undertaken to:

- i. Carry out a quantitative analysis to determine the effect of the HVOTL on property values.
- ii. Determine the perceptions of property owners to the presence of the HVOTLs, and
- iii. Determine the property owners' 'willingness to pay' to have the HVOTLs removed,

Findings - The results show a negative effect of 20% to those properties that are adjacent to the HVOTLs. This effect drops to a negligible amount at 100 metres. Owners believe there is a 10% effect whether they are adjacent or up to 400m from the HVOTLs. The majority of owners opposed any contribution towards removing the HVOTLs. A better understanding is required by Property Valuers, regarding how to appropriately measure the effect of HVOTLs on property values.

Research Implications - The implication of this research is that Property Valuers need to change the way they take into account the presence of HVOTLs when valuing property, with more attention being taken to proximity. Three different approaches were taken to determine impact on property values, with each providing a different result.

Originality/value - Results expand on current knowledge by demonstrating a disparity between what people say the value effect is, and what the actual effect is on their property value. Property owners showed a resistance against contributing towards removing the HVOTLs, although expressed their belief that their presence created a negative effect.

The Value of Priceless: A Hedonic Approach at Valuing Ireland's Archaeological Heritage

Ronan Lyons

Keywords: *Hedonic valuation, Cultural amenity, Ireland, Willingness to pay, Income elasticity*

Fiscal policy and the allocation of public resources is often done on purely a cost basis, rather than a cost-benefit basis, with the implicit assumption being the calculation of benefits is not possible. At the same time, there is growing recognition among social scientists that house prices can be used to develop estimates of the value of access to a range of location-specific amenities, including national cultural heritage.

This research uses a large and detailed dataset covering the Irish residential property market over the period 2006-2012 to investigate whether six categories of national monument in Ireland, from castles and country houses to holy wells and stone monuments, are reflected in house prices. Both price and rent effects are estimated, while income elasticities are also explored. Lastly, as the dataset covers both boom and bust periods, the stability of the valuations is also explored.

Valuation and Lending Policies in Germany and Sweden

Sviatlana Anop

Keywords: *Banking, Lending, Policy, Value, Mortgage*

Purpose - Similar development of economic fundamentals in Germany over the last fifteen years did not lead to dramatic house price increases as in Sweden. What can explain this house price stability over a long period? This paper attempts to find the answer this question.

Design/methodology/approach - A comparative analysis approach is used to examine the differences in the banking sector policies on mortgage financing and approaches to valuing the mortgage properties in two case countries – Germany and Sweden.

Findings - The extreme rise in Swedish house prices above the long-term trend was created by expanding bank lending policies. Excessive bank lending was not a sole reason for increase in prices, but was supported by the general macroeconomic factors and regulation environment determining supply and demand on the housing market. Banks should implement mortgage lending value as a base for mortgage lending together with amortization requirement for mortgage loans. Lending limits based on mortgage lending value will contribute to the stability in house prices in the long term period and it will create a safe lending environment on the housing market.

Originality/value - The paper contributes to a better understanding of necessary conditions for the house prices to rise in the long run above the fundamentals level and suggests policy solutions that can reduce the risks of housing bubbles and increase financial stability.

Impact of High Voltage Overhead Transmission Lines on Property Value – An Australian Residential Case Study

Peter Elliott, Hoon Han

Keywords: *HVOTL, Hedonic models, Externalities, Property value, Risk perception studies*

This paper examines the impact of high voltage overhead transmission lines (HVOTLs) on the prices of detached houses in Queensland. Perceptual studies and hedonic price modelling undertaken confirm that proximity to HVOTL has an important influence on property value but the bearing of a view and tower structure is more significant. A case study analysis of Eight Mile Plains, Brisbane, indicated mean house prices within a 50 metre buffer zone of HVOTL were 20% lower than the median house price for the suburb but were not significantly different in the 200 metre and over buffer zone. Perceptual studies indicated that the home owner's perceived impacts of HVOTL on property value are on average up to 38% reduction in value at 100 metres whereas property valuers and real estate agent perceptions ranged from 5.4% to 17.2%. Hedonic regression models also suggested that proximity to HVOTL and visual presence is significant as far house price is concerned but has no impact on the capital growth of house prices over time post HVOTL placement.

Asset Price Inflation in Dutch Real Estate Office Markets

Dennis Schoenmaker, Arno van der Vlist

Keywords: *Asset pricing, Commercial real estate, Credit availability, Rental space market*

This paper considers commercial real estate markets relative to credit cycles of expansion and contraction. In this paper we integrate insights from the credit literature with insights from the long-standing literature on rental price adjustments in the space market. Do rental prices determine real estate asset prices? What effect do bank loans have in real estate asset prices? These questions are central in this paper. We present a simultaneous equation model with fitted values to examine dynamics of asset prices, rental prices, capitalization rates, and credit availability. For this we use a unique dataset with office asset transaction and rental transaction prices from 1995-2010 for twenty-two cities in the Netherlands. These cities account for over 60 percent of the national office market. No previous European work has been able to address the interplay between the space market and asset market at such a comprehensive level of coverage. We investigate the time series properties by testing for unit root and co-integration of the series. Econometric analysis suggests that the asset price is significantly affected by the rent and credit availability whereas the capitalization rate is not significant.

The Impact of Valuation on House Prices: A Case Study of Singapore Housing Market

Nai Jia Lee, Qianyi Yeo

Keywords: *Housing market, Excess returns, Market behavior, Signaling, Speculation*

In recent years, it has become a usual practice for buyers of public housing in Singapore resale market to fork out additional cash upfront to sellers to sweeten the deal. This additional cash premium, also known as cash-over-valuation, ranges from 10 -20% of the valuation of the property. The amount of cash-over-valuation paid in the secondary market has been consistently high, despite Government intervention to soften the market. This phenomenon has generated concerns among the public on housing affordability and the valuation methodology adopted. Even though it is reasonable for transacted price of the property to vary $\pm 15\%$ from the valuation in appraisal report, it seems puzzling to observe the variation to be persistently positive. What makes it even more puzzling is that both buyers and sellers know the valuation of the house before the transaction is completed. Given that the objective of the appraisal report is to reflect the true value of the house, we expect the rational buyers and sellers to set their agreed price near the valuation reported. We suspect that buyers and sellers use the appraisal report as a source of information on the supply of units of similar attribute to derive their bargaining power. In this paper, we attempt to find out the determinants of the cash-over-valuation. As we do not have valuation data on the appraisal reports, we derive the valuation using the Hedonic Regression approach to proxy the sales comparison approach. As the cash-over-valuations for each district are published for some years, we use them to corroborate our valuation. After controlling for possible market exuberance and anchoring behavior, we found preliminary evidence that the valuation reports serve to inform the scarcity of property and determine the bargaining strength of seller.

Is 'Green' Capitalized to Residential Property Price? Taiwan's Evidence

Fong-Yao Chen, I-Wei Peng, Jen-Hsu Liang

Keywords: *Green building, Residential property, Property value, Taiwan, Hedonic price model*

Purpose - Global environment has worsened since the 20th century, hence the development and research of green building has become a global concern. The literatures have found that green building will increase its property value. Green building has been developed over a period of time in Taiwan. However, the relationship between green building and property price is not significant. This study aims to test the actual 'green' premium on property price and explore the reasons why it was slowly promoted in Taiwan.

Design/methodology/approach - This study is based on the Hedonic price model to estimate the price premium of green building in Taiwan by adopting a least squares regression model. Firstly, we get the variables of green building characteristics by literatures reviewing, questionnaire and interview. We then analyze the effects of 'green building'.

Findings - We found that the number of green building, EEWH (Ecology, Energy Saving, Waste Reduction, Health) in Taiwan, increased slowly. Consumers recognize green is helpful to health and the earth. However, it is less price premium. The developers have less incentive to build EEWH building beside renewal project and luxury house. The 'Floor Area Ratio Incentive Policy' should be expanded to general housing.

Originality/value - The achievements help to analyze the effect of green building on property value much more, and improves the green knowledge to community. It will also make the developers realize which indicator of 'green' affects property value more. As for the government, it can support the improvement on green policy, and promote more prosperous green building in Taiwan.

The Implicit Pricing of Property Attributes

Neil Crosby, Cath Jackson, Allison Orr

Keywords: *Property pricing, Revealed preferences, Risk premia, Capitalisation rates, Office market*

Investment theory dictates that capitalisation rates for freehold property should be determined by the risk free nominal rate of return plus the risk premium less the expected growth rate. The capitalisation rate will therefore vary depending on the growth potential and risk attached to investment returns. The risk premium will be governed by factors based around the location, physical characteristics and leasing, including both the quality of the tenant and existing lease structures. In reality, capitalisation rates within market valuations are often determined by reference to direct comparison with other similar property investments, especially in mature, transparent markets.

The purpose of this micro-level study is to examine the pricing of property investment focusing on the determination of capitalisation rates and the property attributes that determine the risk premium. A robust micro-level hedonic model is developed to attempt to disaggregate the capitalisation rates observed for office properties to examine the location and property specific factors that influence the risk premia set by investors. The cross-sectional inter-temporal analysis employs a dataset composed of property transactions that occurred in the London office sector over the preceding decade and contains property specific information not previously released by CoStar.

It is widely recognised that multiple factors affect the risk attached to the expected income stream of a property. A review of the sparse literature reveals that this area of property pricing has received little attention. This ongoing, exploratory study could take an important step forward in this field by identifying and measuring the impact that factors such as location, physical characteristics, leasing details and tenant characteristics have on the risk premium and pricing of direct property.

Little is known about the derivation of property risk premium, despite its importance in pricing. This project will attempt to bridge this knowledge gap by identifying the drivers of capitalisation rates and help to develop a better understanding of how investors perceive individual property attributes. This explorative research should be important to practice and academia, not least because it will employ a revealed preference method and transaction dataset that have not been used before to examine the pricing of commercial property investments.

The Reexamination of the Impact of Mass Rapid Transportation on Residential Housing in Metropolitan Taipei

Ying Hui Chiang

Keywords: *Housing prices, Nonlinearity, Mass rapid transportation, Spatial regression*

Many previous studies have shown that the Mass Rapid Transportation system has a positive impact on property prices due to its availability. But this impact reduces as distance from the station increases. The pattern of the change between different stations in different locations has not been fully discussed. Additionally, most of the studies usually ignored spatial interdependence among regions. Coupled with the advancement in geographical information system and the proliferation of spatial data, Real estate researchers have demanded advanced spatial analysis tools.

This paper collects the data from 11,509 house transactions during 2007 to 2008, which are near the Taipei Mass Rapid Transportation system within the radius of 1 km, to examine the impact of Mass Rapid Transportation system on metropolitan housing prices in different locations. We classify locations of the samples into CBD, CBD fringe, and suburbs in the metropolitan area. And then the types of stations are divided into two types, single-line station and multi-line station.

This research uses spatial econometrics to estimate a residential housing model that includes cross-region interdependence. The empirical results find the price effect of distance from the MRT station is nonlinear. This effect tends to be stronger at certain distance intervals. The effect of MRT stations between urban and suburban areas is pronounced. The effect tends to get stronger in certain area, the closer the property lies within to the suburbs area the greater the effect is. Also, we find price gaps between different metro station types. Multi-line stations have greater positive effect on residential price.

Land Taxation: An Idea Whose Time Has Gone

Alan W. Evans

Keywords: *Land, Taxation, Henry George, Politics, Valuation*

The idea of tax on the value of land was put forward by Henry George in his book "Progress and Poverty". Its influence was great. Political parties were formed on the basis of the ideas it put forward and pressure groups still exist to promote those ideas. But despite this quasi-religious belief in the efficacy of land value taxation it has never been widely adopted. Only two countries in western Europe have any kind of land tax, most have some form of tax on the value of the whole property. The reasons for this would seem to lie in problems of practicality and politics.

As regards practicality one country which does whole heartedly apply land taxation is Taiwan. The problem there is that in Taipeh at least very little undeveloped land comes onto the market. Therefore in order to value the land on which a building sits, two valuations have to be carried out. First the value of the entire property has to be estimated. Second, the cost of construction of the building has to be estimated. Deducting one estimate from the other the valuer arrives at an estimate of the value of the underlying land. It is evident that the cost of the valuation is twice as great as if a tax were being levied on the value of the property and the result is less certain.

In New Zealand municipalities can choose which form of land or property taxation to use to raise money. This problem of practicality is, one would expect, the main reason why none of the major cities use land taxation. Land taxes are used only in the rural areas, where, it is evident, there is land being sold on the market so that valuations can be made both easily and reliably.

The political problem is that levying a tax on land might have been politically popular in the nineteenth century when most of the population rented their homes. A land tax would then have been a form of wealth tax - a tax borne by the rich. But in countries where most of the population now own their own homes a land tax is not going to be popular if it is levied at anything other than a low rate. But if it is levied at a low rate then it will not achieve the economic effects that its supporters believe that it could. Its time has passed.

Legal Counsel in European Real Estate Conveyances: Brokers and Notaries

Hans Ola Jingryd

Keywords: *Residential housing market, Property transactions, Brokers, Notaries, Real estate conveyances*

Purpose - Real estate conveyances are accomplished in different ways and by different players in the EU member states. In Sweden, the key player is the broker, whereas in France and other civil law countries, the notary has that role.

The purpose of the paper is to examine the scope and nature of the non-litigious legal counsel buyers and sellers of residential real estate can expect to receive from the broker under the Swedish regime, compared to the notary under the French regime. The purpose is also to discuss and evaluate the two regimes, with respect both to the desirability of legal counsel in residential real estate conveyance, and to assigning those tasks to the broker and the notary respectively.

Methodology/approach - The paper is based on my doctoral thesis presented in January, 2013. The study is a comparative legal study conducted in two steps: first, the role of the broker is compared to that of the Latin notary in nine civil law countries. After that, the duty to counsel of the broker is juxtaposed with that of the French notary. Being a legal study, it is based on legal sources such as statutes, case law, and jurisprudence.

Findings - The Swedish broker and the Latin notary are both held to a duty of impartiality and a duty to counsel. The duty to counsel of the Swedish broker and the French notary consists in four sub-duties: to conduct verifications and ascertain certain facts, to disclose relevant information, to give adequate advice, and to draw up the necessary deeds.

The desirability of mandatory legal counsel, as well as the choice of assigning counseling role to the broker or the notary, has clear economic implications. However, it is less than clear whether or not regulation of the examined kind is conducive to economic efficiency. One problem is that the existing models fail to take into account central factors such as one's ideological view on consumers' rights and state intervention in the marketplace. Therefore, it seems a more fruitful enterprise to evaluate the regimes' institutional robustness; that is, their ability to fulfill their intended purpose. For instance, the incentives of the key players may be detrimental to the proper functioning of the regime. Future research should focus on institutional robustness.

Originality/value - The paper highlights an important, though often neglected, factor for evaluating the regimes for conveyances, namely impartial legal counsel to consumers.

A Theory of Urban Villages

Zhigang Albert Nie, Kwok Chun Wong

Keywords: *Urban villages, Property rights, Urban development, Transaction cost, Land economics*

The two papers by Nie and Wong (2012a, 2012b) have explained the causes of the higher density and shorter life expectancies in China's urban villages using a property rights based model. Meanwhile, in the paper by Nie and Wong (2012c), exceptional cases in Shajing, Shenzhen have been discussed, which shows that it is also possible that property rights can play a less decisive role for some occasions. Not only so, some patterns can hardly be explained conveniently using the existing literatures. Given the fact that the land law in China has not undergone any major changes in the past 20 years, in late 1990s and early 2000s, illegal construction by villagers themselves was basically "allowed" at the time, but such construction is no longer allowed in recent years, except in Shajing, Shenzhen and some remote areas. This paper provides a general method defined by some rules, built upon the existing institutional theories but reorganized, to explain the different outcomes in urban villages. The rules mentioned, of course, can also be applicable for many other cases, which then will be illustrated further in an ongoing paper following this (Nie and Wong, 2013).

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The Empirical Evidences on the Link between China's Public Land Leasing and Local Fiscal Revenues

Wen-Chieh Wu

Keywords: *Public land leasing, Conveyance fees, Local fiscal revenues, China local financing*

The public land leasing has been increasingly used as the instrument of generating revenues for local governments as well as the tool of regional competition for manufacturing investment. The local government can generate two revenue streams from leasing public land: land conveyance fees and future formal tax revenues. These formal taxes include value-added tax (VAT) from enterprises, business tax from services, and income tax from profits. In order to raise sustainable tax revenues from manufacturing capital in the future, the local government usually sacrifices conveyance fees and reduces the public land leasing price through one-on-one negotiation. Using the provincial-level data, this paper empirically examines the impacts of public land leasing on the lagged revenues from major local taxes. Our dependent variable is either total fiscal revenue or specific tax revenue. The candidate variables of public land leasing include the number of land sites leased, the total area of land sites leased, the leasing revenues, and the leasing price. The empirical analysis provides the evidence that the public land leasing has a clear effect on the future revenues from both VAT and enterprise income tax.

The Legal Conditions for Neglected Buildings in Germany

Andreas Saxinger

Keywords: *Neglected buildings, Demolition order, Building law, Expropriation, Planning law*

During the last few years a new phenomenon arose in some cities in Germany. Especially in Eastern Germany and in economically undeveloped regions a significant number of houses are in poor condition. House owners are not able or not willing to maintain their buildings. Neglected buildings may have a negative impact on the attraction of the surroundings, but also may represent a danger for the public security. Efficient legal activities against the house owners are difficult for the authorities. Building law is in the legislative competence of the German Länder. Usually the range of legal activities is focussed on illegally erected buildings, but many neglected buildings were erected legally. Some Länder decided to add a new regulation to the building law, which permits the authorities to demolish neglected buildings even against the home owner's will. It is only necessary, that a building is not in use any more, is in dilapidation und there is no public interest in the conservation of the subject building. The question, if the neglected building has been legally erected, is not a condition of the new regulation.

German planning law, which is in the legislative competence of the German Federation, was for a long period only applicable to whole quarters or entire streets of neglected buildings. Without a plan of the municipality, measures were not possible. In 2012 the Federation changed the planning law to make it better applicable also to single neglected buildings. Now a demolition order is allowed for the municipality even when there is no local statute for the quarter. On the contrary an expropriation of neglected buildings needs a local statute for the quarter far off. In the next years it remains to be seen, if the new federal planning law will solve the problems of the municipalities with neglected buildings.

Legal Due Diligence in Commercial Real Estate Transactions

Martin Foerster

Keywords: *Due diligence, Austria, Commercial real estate, Real estate transactions, Law*

Purpose - The purpose of the paper is to give an overview on the goals of the legal due diligence in the greater context of commercial real estate transactions.

Design/methodology/approach - The paper first analyses the purpose of the legal due diligence in an acquisition process. In a second step it analyses those legal issues that – in the experience of the author – frequently arise in standard transactions and how to address them. Thirdly, it analyses the consequences of each of these issues on the acquisition process.

Findings - Legal issues that frequently pop up during a due diligence are categorised in (a) deal breakers, (b) issues that need to be resolved before signing the purchase contract, (c) issues that need to be addressed in the acquisition contract and (d) risks that need to be accepted but may have implications on the purchase price.

Research limitations/implications - Although the legal issues are similar in most continental European States, the overview is limited to Austrian law and limited commercial real estate transactions. Non legal issues (in particular: tax, financial, environmental and technical issues) as well as other areas of real estate (residential) are excluded. As each real estate transaction is different, the list is non-exhaustive.

Uncovering Private Real Estate Fees

Maarten van der Spek

Keywords: *Fee, Private real estate, Agency theory, Simulation, Alignment*

One of the most important topics for investors in the private investment market is also one of the least researched subjects: Fees. There is hardly any public information and only limited research available and there seems to be no standardisation. On the other hand, the impact of fees on the net performance of investors is substantially. Phalippou showed, for instance, that the average private equity fund charges 7% fee per annum. This research will examine the fee structure and total fee load for private real estate funds on a ex-ante basis. Fee structures as agreed between investors and fund manager and documented in placing documents are used to analyse the total fee load per fund. Based on this fee load, differences between funds (for instance different styles, countries, property types, etc) will be analysed. Finally, also insight will be provided on which fee structures offer better alignment between fund manager and investor.

The Financial Performance of Non-Listed Funds

Franz Fuerst, Casper Hesp, George Matysiak

Keywords: *Nonlisted real estate funds, Performance analysis, Commercial real estate, Panel data analysis*

This paper investigates the major determinants of fund performance and outperformance for the non-listed fund sector. More specifically, it seeks to understand whether fund performance reflects management and stock-selection skills or whether performance is mainly in line with average returns in the markets to which the fund is exposed. It also elucidates fund allocation and leverage strategies and seeks to detect whether successful funds anticipate upturns and downturns in sectoral markets. Using a unique database compiled by INREV for the 2001-2011 period, we analyse the characteristics and performance of non-listed funds and investigate whether funds depend solely on leverage and market/sector exposure for financial performance or whether there are additional value-adding factors at play. We also track fund performance through the years of rapid expansion of the non-listed sector before the onset of the global financial crisis to get a better understanding of the differential impact of performance drivers in market upturns and downturns.

Do Public Real Estate Returns Really Lead Private Returns?

Elias Oikarinen, Martin Hoesli, Camilo Serrano

Keywords: *Direct real estate, Securitized real estate, Vector error-correction models, Generalized impulse response function, Escrow lag*

We use sector level REIT and transaction-based direct real estate data for the period 1994-2010 to provide a clearer understanding of the dynamic relations between public and private real estate returns. We add leverage to private returns to make the private data more comparable with the REIT data. We also include economic fundamentals in the analysis to take account of the influence of fundamentals on real estate market dynamics. Moreover, we consider the influence of the 'escrow lag' in the recording of private market prices. The estimated vector error-correction and vector autoregressive models, Granger causality tests, impulse response functions and variance decompositions all provide evidence of REIT returns leading private returns in the office, retail, and apartment sectors. These lead-lag relations appear to be due to the slow reaction of private market returns to shocks in REIT returns and in some economic fundamentals. In the industrial sector, such lead-lag relation cannot be observed, however.

Managing Public and Private Real Estate in the Real Estate Allocation

Andrew Baum, Alex Moss

Keywords: *Asset allocation, Real estate allocation, Listed real estate, REITs, Portfolio management*

Purpose - The objective of the study is to assess the extent to which the hypothetical attractions of listed real estate products as part of a real estate allocation are being over-ridden by the lack of integrated solutions to managing public and private real estate in the same portfolio.

Design/Methodology/Approach - To assess this, we undertook a pilot survey of 20 investors and fund managers. Following this, we target two interviewee groups: 'pure' investors (investors who manage mainly in-house capital); and the investment consultants who advise them. The method used is semi-structured interviews, and we have targeted a minimum response of 25 investors and 10 consultants.

Findings - The pilot survey found that for some European investors and managers listed real estate is clearly part of the equity allocation. For others, there is some evidence that pension funds and consultants regard (or would like to regard) listed real estate as part of the real estate allocation. Within the sub-set of those for whom listed real estate forms part of the real estate allocation, some have an integrated approach to public and private real estate; but more (80% of 20 interviewees) do not, sub-contracting public real estate to a dedicated team, the equity desk, or even to an external manager. It appears that this goes some way to defeating the object of a combined mandate

Originality/Value - With liquidity an increasingly key criterion in the asset allocation process, and the increasing introduction of compulsory defined contribution pension schemes in Europe we believe that understanding how listed real estate can be managed effectively alongside private real estate . We believe that this is the first survey to be undertaken with this specific objective.

The REIT Mix: Examining the Case of European Listed Real Estate within a Multi-Asset Investment Portfolio

Martin Haran, Peadar Davis, Michael McCord, John McCord, Stanley McGreal, Davis McIlhatton

Keywords: *Real estate investment trusts, REITs, Portfolio optimisation, REITs, Blended real estate portfolios, Multi-asset investment*

The continued roll-out of Real Estate Investment Trusts (REITs) around the world offers investors expanded investment horizons as well as increased diversification opportunities. Within Europe, REITs continue to trade at a discount to NAV making equity raising problematic and with banks continuing to show reluctance to lend to the real estate asset class alternative sources of finance (most notably bonds) are being sourced in order to capture investment/development opportunities and to avail of the 'added value' and 'diversification benefits' afforded by mergers and acquisitions.

Whilst the European REIT market (most notably in France and the UK) exhibits increasing levels of maturity and sophistication, the contemporaneous relationship and performance attributes of REITs vis-à-vis direct real estate remains a subject of contention. In particular, the extent to which securitised forms of real estate are a 'proxy' for direct holdings and deliver the 'real estate effect' benefits required by investors continues to be contested. In an asset class disaggregated into national and sub national markets, bounded by differing socio-economic, legal and cultural contexts, questions remain regarding substitutability of direct and listed forms, both within and between countries. Concerns also pertain regarding the temporal aspect of the relationship – with considerable implications for interpretation of market activity and trends, multi-asset portfolio construction as well as 'buy-hold-sell' decision making.

This research paper explores the rationale for including REITs within a European multi-asset investment portfolio. A diverse spectrum of analytical techniques including lead-lag correlation and Granger Causality measure alignment between REITs and direct real estate performance within Europe. Optimal portfolio analysis will serve to demonstrate the role of listed real estate within a multi-asset investment portfolio in terms of both risk diversification and performance enhancement.

Listed and Direct Real Estate Investment: A European Analysis

Steven Devaney, Qin Xiao, Mark Clacy-Jones

Keywords: *Return volatility, Price discovery, Transaction based indices, Real estate cycles, Spectral and cross-spectral analysis*

This study investigates the extent to which returns from the listed real estate sector are related to returns in the direct real estate market for the US and for six European countries: France, Germany, the Netherlands, Sweden, Switzerland and the UK. Past research has often used valuation based indices for the direct real estate market, but this study uses transaction based indices of direct real estate prices, as well as valuation based ones, for the purpose of comparison. Returns, standard deviations, correlations and peaks and troughs are compared before the techniques of spectral and cross-spectral analysis are used for examining the cyclical attributes of the data. The main findings are that transaction based series imply a smaller difference in volatility between direct real estate and the listed sector, but movements in listed sector returns lead those in direct markets regardless of whether a transaction or valuation based series is used to represent the latter. This is consistent with the idea that price discovery occurs first in one market and then in the other. The results largely support conclusions from earlier research, but help widen the spatial scope of research in this area by exploring European markets.

0D2-1**Securing Management Rationality with Real Estate Controlling**

Doris Grill

Keywords: *Management, Management control, Rationality, Controlling*

Due to the current dynamics of real estate business, the requirements for efficiency and transparency in real estate management are rising. Real estate markets are characterized by uncertainty and distrust. Proprietors, shareholders, partners and lenders require more and more detailed information and institutional real estate managers have to meet these requirements. Managers have to justify every decision and underpin them with hard figures. However, their purposive rationality is not guaranteed because they see themselves confronted with loads of unstructured information, inconsistent data, unclear corporate objectives and uncertain future. The need for information, planning and control systems (controlling) becomes evident.

'Securing the rationality of management' is the definition of one special concept of controlling. This concept was developed by Jürgen Weber and Utz Schäffer. From their point of view, it is easier to explicate problems from professional practice and embed them into a theoretical framework with this concept. Rationality is here defined as purposive rationality.(*)

In the field of real estate controlling, there is no consistent and accepted theory. Therefore, it might happen that in practice controlling fulfills the position of a stopgap, which means that functions that are not covered by any other organizational unit are assigned to it. Consequently, a lot of isolated applications are developed so that the bureaucracy increases. Meanwhile, the flexibility of the company decreases and the management is not promptly supported with the required consolidated data and facts.

This paper investigates if this concept of controlling is able to support and secure the rationality of the real estate manager. The article first reviews the general real estate literature and summarizes special requirements and problems of the real estate sector. After the discussion and delineation of this special concept of controlling, its limits and potentials in the context of real estate management are shown. Finally, it is discussed from a theoretical and holistic point of view, what is needed to secure rationality and analyzed where this concept of controlling should be adjusted to the special needs of the real estate industry.

(*) Weber, J./Schäffer, U. (1998): Sicherstellung der Rationalität von Führung als Controlleraufgabe, Vallendar/Rhein 1998

0D2-1**The Impact of Implementation of 'Individual Visit Scheme' Policy on Prices of Street Level Retail Shops in Hong Kong**

Yan Liu, Kwong Wing Chau

Keywords: *Tourist shopper, Street level retail shops, Hedonic price model, Individual visit scheme, Hong Kong*

Hong Kong is regarded as one of the most fantastic shopping paradise for tourists. Retailing is a major economic activity here and highly correlated with tourism industry. Implementation of "Individual Visit Scheme" (IVS) policy since July, 2003 which allows Mainland China citizens to visit Hong Kong on an individual base has significantly increased proportion of tourist shoppers and affects greatly on retail property. Based on 635 transaction record of the street-level retail shops between 1991 and 2011 in Hong Kong, and with the use of hedonic price model, this study examines hedonic attributes that affect this specific retail property type and also makes use of the IVS event to analyze and evaluate the changes in the implicit prices of certain attributes. The empirical study shows positive correlation between increase of tourist shopper and retail property price, and strongly supports our hypothesis.

New Approach to Design the Knowledge Based Urban Development (KBUD) Using Agent Based Modeling

Satyanarain Rengarajan, David Ho Kim Hin

Keywords: *Real estate development, Post industrial cities, Urban design, Knowledge based urban development, Knowledge cities*

Throughout the OECD world and beyond, localised cluster based initiatives have increasingly being seen as the main industrial policy option to sustain regional competitiveness and economic prosperity (OECD, 2000). Industrialized nations in particular have come up with large scale plans to develop what is known in the literature as the 'Knowledge Based Urban Developments' (KBUD). This paper focuses on the urban design aspect of such large scale long term developments which has been given less importance in the planning literature. The paper discusses two important challenges related to land use design planning currently faced by planners of such specialized spaces. Firstly, Long term land use designs have become inefficient tools to guide development as they are constantly subjected to changing market forces. Second, design criteria for fostering interactive environments remains sketchy for such knowledge precincts. We discuss one possible design criteria with a primary aim to enhance 'knowledge interactions' between different participants and their relevance to progress of knowledge intensive communities. Using the unique criteria a new framework for a simple land use design model (LUDM-KBUD) is proposed using Agent Based Modelling (ABM) technique. Such a land use design model can help planners to develop physical planning guidelines in a continuous manner that would create a spatial design with the goal of maximizing knowledge/information interactions between participants.

The research will provide planners with an alternative dynamic methodology to design such long term post-industrial mixed use developments. Future work in this direction and their ensuing implications on zoning practices of Knowledge Based Urban Developments (KBUD) and similar large scale urban developments will also be discussed.

Real Estate Investment Risks in Central and Eastern Europe

Kateryna Kurylchuk

Keywords: *Risk factors, Investment returns, International investment, CEE countries and region*

Decision making for international real estate investment requires a thorough analysis of options in order to take into account a substantial uncertainty and foreignness implied by international investment per se, as well as the real estate market risks inherent in foreign countries. These factors are intensified by economic distresses and make real estate investors use more discretion in their operations abroad.

A similar situation can currently be observed in Central and Eastern Europe (CEE). Before the crisis, it saw active international real estate investments owing to higher expected returns and surging economic growth in the emerging and quickly developing real estate markets. Through the appearance of the downturn, however, many business players have become cautious about investing in this region. In other words, the crisis resulted in an increased perception of risk and a change towards more selective investment strategies in CEE, with international investors unprepared to take high country risks even though property risks may be low. Hence relatively more importance is attached to country risks vs. property specifics and gains when making investment decisions.

Despite a growing body of publications on real estate investment risks and decision making factors in the international context, limited research has been undertaken on the CEE countries in this respect.

This study aims to identify, structure and compare major risks of investing in real estate, with a particular focus on selected CEE countries, in order to see if they are high enough to hinder further investments. It reviews in the first instance the existing publications on international real estate investment and summarizes common risks and factors affecting relevant decision making. Real estate investment trends and issues in the CEE markets are discussed, with specific investment risks for the CEE region identified. Finally, importance of the factors influencing investment decision making, as perceived by international investors in the region, is studied through a questionnaire survey.

Altogether this explorative research paper contributes to the understanding of barriers and risks of international real estate investment while assisting the investors in improving their perception of opportunities and implications associated with real estate investments in the CEE region.

0D2-2**Efficiency in the Real Estate Market: Case of Energy Efficiency**

Ari Laitala, Kauko Viitanen

Keywords: *Efficient market hypothesis, Subjective value, Transaction costs, Objective value, Building commissioning*

Purpose - One suggestion of the Efficient Market Hypothesis (EMH) is that efficient market maximizes the value accumulation of market players. Based on the literature review, framework and prerequisites for the value maximization in efficient real estate market is constructed. This framework is preliminary tested by the case study exploiting focus group discussions. Purpose of the paper is to clarify how market efficiency and value maximization are interwoven.

Design/methodology/approach - Hypothesis development is based on the literature review focusing on areas of market efficiency and value theory. In the empirical part study employs the focus group method.

Findings - Based on the literal part it can be shown that informational efficient market makes the value maximization possible. On the other hand, value maximization is a driver for the efficient market behavior. Empirical results indicate that suggested framework for the value maximization seems to have a real life relevancy.

Research limitations/implications: Due to a nature of the research methodology, empirical validation of the developed framework has an indicative value at this point.

Originality/value - In this paper EMH and value theory are brought together. It is shown how they are linked on each other. Nature of the EMH is broadened by the concepts of subjective and objective value.

The Climate Change: Constructed Environment and Labour Market Trilogy

Peter James Glynn, Roslyn Taplin

Keywords: *Climate change, Constructed environment, Employers organisations, Labour, Trade unions*

Climate change will have a considerable impact on the constructed environment. More specifically, policies and regulations made will impact on construction labour and have future implications for the delivery of climate adaptive property. This paper will examine the implications of climate change policy for the constructed environment labour market. It discusses whether policymakers and regulators are sufficiently informed and aware to accommodate the requirements of a low carbon workplace and whether the actors in the workplace can effectively implement the technical, regulatory and social reforms. The paper concludes that the current initiatives are individually suitable but government models are generally incomplete, lack cohesion and so do not deliver to the extent required by industry or the workplace actors.

Recent studies find that there are changes occurring in the labour market as a consequence of climate change (GHK Consulting 2007; ETUC, 2007; Worldwatch Institute, 2008). They also find that skills shortages are a binding constraint on the sector, and that it will continue to be difficult to source workers in the number and with the skills required. These changes are a reflection of the industry's moves to adapt to the new conditions, and the scaling up required to undertake the work that will reduce the energy consumed and the volume of emissions for which the constructed environment is responsible.

Employers' organisations and trade unions play an active role in the provision of sector and labour market information to policy makers, advocating the collective interests of their constituents who otherwise do not have the opportunity for input on policy and regulatory matters. They also serve as the interface between business and labour interests, and policy makers and regulators. Employers' organisations and trade unions responsibilities include labour relations and social dialogue in respect of climate change. The paper finds these objectives overlap in some areas and therefore create the potential to infringe regulatory jurisdictions. Diligence is necessary to ensure that labour and management can remain focused on the delivery of goods and services, while also undertaking the measures necessary to adapt to the requirements of a low carbon economy. The constructed environment: is a major contributor to economic growth and employment, providing 10% of global gross domestic product and employing 5-10% of total employment.

How does the Change in Accessibility Impact Commercial Property Values?

Jae-Kwang Lee, Qiulin Ke

Keywords: *Longitudinal analysis, Commercial property, Rental value, Gravity-type accessibility indicator, Pricing accessibility*

As numerous transport infrastructure projects have been implemented, recent years have witnessed a significant increase in transport network in urban and regional areas. A number of studies have been undertaken to examine whether transport improvement impacts commercial property values and have found that proximity to public transits leads to an increase in rental values of commercial properties. Few studies, however, have focused on investigating the relationship between change in accessibility and commercial property values with a longitudinal analysis. This study therefore seeks to investigate how change in accessibility impacts commercial property retail values. A gravity-type accessibility indicator will be developed in order to enhance the measurement of accessibility in the analysis. This accessibility will gauge accessibilities of commercial properties to the market potential for two time points: 2000 and 2010. Drawing on that accessibility indicator and commercial property attributes collected from private companies, this study will develop a longitudinal econometric model to analyze the impact of the change in accessibility on commercial property rental values. A hypothesis to be tested is that an increase in accessibility does not lead to a rise in rental values of commercial properties.

0D3-1**Hong Kong's Direct and Indirect Real Estate Markets: Are they Integrated or Not?**

Belinda Lau, Kwong Wing Chau

Keywords: *Market integration, Common risk factors, Risk premia*

This paper revisits an old but relevant and imperative question in the field of real estate investment and portfolio management: are the direct and indirect real estate markets integrated? The authors aim to provide the answer for the Hong Kong context by examining the effects of common risk factors on the variations in excess returns for these markets. Adopting the multifactor asset pricing model (MAP), the Fama-MacBeth two-pass regression approach is applied to estimate the time-varying risk premia for the model. The pooled-variance t-test is then performed for the risk premia coefficients to determine if the direct and securitized markets are linked. Preliminary analysis of the results shows that the markets in Hong Kong are not integrated, and the authors attempt to provide some explanation to this based on the unique characteristics of the Hong Kong real estate market.

Strategic Behaviour in Tenure Conversion: Moral Hazard in the Swedish Housing Sector

Fredrik Kopsch, Henry Muyingo

Keywords: *Property investment risk, Cooperative housing, Tenant-ownership, Moral hazard*

Purpose - Recent evidence finds that monthly fees paid by owner-tenants in cooperative housing are kept artificially low in newly established cooperatively owned apartment complexes as compared to already established ones. This finding has been accredited to the lack of knowledge about future renovation needs of the building by their occupants, thus resulting in optimistic net present values of future costs and consequently in property management fees lower than they ought to be. However, the fact that the division of over-estimated and under-estimated fees is not close to unity points to the presence of some other underlying factor contributing to what is observed. One possible, and we argue, more credible explanation is that the tenant-owner agents of the cooperative who are involved in the tenure conversion process from rental ownership act strategically with the aim of profit maximizing for personal gain. As Swedish law requires that 70 percent of the households be in favor before a conversion can take place there is an incentive for the agents to strategically keep artificially low fees so as to acquire the 70 percent acceptance as lower fees will seem more beneficial to the uninformed occupant. The second incentive is a result of a conflict between short- and long-term interests. Some agents view their apartment mainly as a good where you intend to live for a long period of time, while others view it as an investment opportunity to be sold within a short period of time. If the driving forces behind the transfer of ownership are conceived out of short-term interests there will be an incentive to keep fees lower in order to attract a higher sales price in the immediate future. The aim of this paper is explore the existence of such strategic behavior in the market.

Methodology – Quantitative analysis of sales data over a 10 year period as well as a case study of recent converted objects.

Originality/value – Correctly understanding the underlying forces to this problem is important for a well-functioning market. New buyers are concerned with the monthly expenses. Artificially low fees lead to allocation inefficiencies in the market with tenants over-paying and thus buying the 'wrong' apartment. If this is due to lack of information, it might be warranted to educate those who take part in the transfer of ownership. If this is due to strategic behavior, it might be warranted with some sort of governmental intervention to protect buyers.

Service Perspective in Real Estate Management - A Study of the Swedish Real Estate Industry

Peter Palm

Keywords: *Service dominant logic, Real estate management, Service orientation, Customer focus, Customer orientation, Customer service management*

Purpose – The purpose of this paper is to investigate the Swedish real estate industries shift towards a service focus. The focus is on how service companies (such as commercial real estate companies) consider their business, if they see themselves as deliverers of a product or service.

Design/methodology/approach – The paper discusses the characteristics of the Swedish real estate industry and the relation to the theory of Service dominant logic. The study consist of both an inventory of annual reports, during the last 5 years, and an interview study with top-level managers within the firms studied in the annual report inventory.

Findings – The industry has traditionally been focused on technics and the buildings. From the mid 1990s there has been an increased interest in service and customers. It is argued that although the Swedish real estate industry today has a more service and customer orientation it has not made a definite shift from a product focus towards a service focus.

Research limitations – The study only considers the Swedish real estate industry. Furthermore it is limited to the outspoken words of the companies. The customer perspective in words of the customers perceived degree of service orientation is not included.

Practical implications – This approach enables the real estate industry to relate their work to the Service dominant logic. Furthermore it enables the industry to see improvements in their service offer.

Originality/value - The paper presents an empirical test of the Service dominant logic framework within the real estate industry.

Poster

Use of the Conjoint Analysis Technique to Establish the Perceived Quality of Building Materials in the Residential Use - Preliminary Studies

Silvia Spairani Berrio, Josep Roca Cladera

Keywords: *Property valuation, Construction materials Choice indicator, Conjoint analysis, Survey analysis, Construction materials*

In a highly competitive industry as is the current context, accentuated also by growing globalization, the perception of the quality of the building materials in residential use represents an impact on the estimation of the market value and consequently in the behavior of the user. Therefore the satisfaction of the needs and preferences of users should be clear, allowing evaluators to maximize the market value estimate and possibly increase profits in companies aimed at the construction industry.

Starting from a critical analysis and reflecting on a previous research study that was designed an indicator of the perceived quality of the building materials used in houses (Alicante, 2009). In this article, we propose the study of the subjective perception by house users and professionals on the suitability of particular building materials in a specific location using the technique of Conjoint Analysis. To achieve this objective, a preliminary survey was designed and carried out in various public places throughout the province of Alicante (Spain) during the months of September and October (2011), and was completed by 36 users and 31 professionals. The obtained information was crucial to acquire scientific data that measures the implicit weight of variable quality for its subsequent application in the calculation of the market value estimate.

In the case of paving, the best perceived materials according to users and professionals are parquet and wooden flooring when asked about bedrooms and living rooms and then ceramic or natural stone, for "humid areas" like bathrooms and kitchens. On the other hand, in the case of interior linings users and professionals prefer the marble and ceramics for "humid areas" and the paintings and the papers in "other rooms".

Poster

Understanding Affordability to Improve Resiliency: Linking Housing Costs, Transport Costs and Foreclosures

Ann Hartell

Keywords: *Foreclosure, Housing affordability, Transport costs, Locational costs, Resiliency*

Purpose - As mobility is inextricably linked to housing location, the relationship between transport costs and housing costs is a component of neighborhood-level economic condition and resiliency. A number of studies and policy tools have mapped combined transport and housing costs, but these largely rely on affordability thresholds of income-to-housing costs developed in the 19th century (Hulchanski). For example, the Housing + Transportation (H+T) Index displays location costs and defines neighborhoods above the thresholds as 'unaffordable' (CNT). Notably, the H + T Index and similar analyses do little to link these costs to neighborhood outcomes.

Methodology - This study seeks to address this gap by using a regression model to evaluate the joint effect of housing costs and vehicle ownership costs on foreclosure rates.

Findings and Limitations - The model reveals that both vehicle costs and housing costs are important factors in neighborhood-level foreclosure rates. In interpreting the results of the analysis it must be kept in mind that it is relevant for the neighborhood level not the household level, having some degree of aggregation. Further, high transport costs may be indicative of other spending behaviors that are the actual factors in increased foreclosure rates. Despite these limitations, the finding that transport costs are an important influence on foreclosure rates raises questions about what the true affordability ratio is for housing, and whether high housing prices and nontraditional mortgages can fully explain the dramatic rise in foreclosures.

Value - The study has value for regional planners, providing evidence that transport planning and programs are an important component of neighborhood-level economic conditions, thus lending support to integrated programs. The findings can also help refine definitions of affordability so as to better align programs with policy goals. For the transport sector, the model could be used to assess benefits and costs of potential transport investments. For housing developers, the analysis suggests that marketing messages highlighting affordability could be enhanced by including information about transport costs.

Poster

Effect of Cross-Cultural Environment on People's Job Satisfaction in Foreign Invested Real Estate Companies in China

Jing Jiang

Keywords: *Cross cultural environment, Job satisfaction, Foreign invested, Real estate company, China*

As China join into the WTO for over 10 years, increasing number of foreign investors show their interests in Chinese market, as well as foreign property companies.

However, due to the cultural differences between foreign and local companies, the foreign investor will face with many challenges when entering into Chinese market. These challenges may lead to difficulties not only in establishing relationships with government offices, customers, labor and suppliers but also in managing local staff.

While more and more employees working in foreign real estate companies now, it is not clear whether they feel live up to their expectations. Previous research show that cross-cultural environment in real estate industry has drawn much attention^{1,2} although some influence of cross-culture was concluded, how people's job satisfaction would be affected under the cross-cultural environment in foreign real estate companies is not examined.

In this paper, both quantitative and qualitative approaches are taken as the main research method. The quantitative questionnaire is designed by taking reference of previous researchers' suggestion and incorporating a number of existing scales for the measurement.

A pilot study will be firstly conducted in Guangdong province in China. Respondents will be invited to provide feedback on the design of the questionnaire and suggestions for refining the survey instruments.

After that, the reliability and validity of the instrument will be examined. In addition, according to the suggestions from the respondents in pilot study, revision will be made to refine the questionnaire for the main survey.

And then is the main survey, Shanghai will be chosen as the main sample area due to the distribution of foreign property companies in China. Questionnaire will be delivered to at least 200 respondents in foreign companies and collected back immediately after they complete. Same number of questionnaire will be sent to local companies to collect control data. And if possible, some experienced managers will be asked to do interview.

To find out whether cross-cultural environment has an effect on employees' job satisfaction and which factors are more significant compared with traditional situation, structural equation modeling and multiple regression analysis will be considered as main data analysis methods, depending on the amount of data collected.

Poster

The Spatial Analysis of the United Kingdom Commercial Property Market

Ignas Gostautas

Keywords: *Spatial econometrics, Real estate investment, Real estate finance, Risk*

Values of the properties in nearby locations almost never differ drastically. This indicates that the values are dependent on their surroundings. Yet, the impact of the location on the value of a property is not constant and reacts in a unique way to changes under different economic events. To date, few authors have examined and exploited these spatial relationships in property markets.

In the current research I focus on the commercial real estate market in the UK from a spatial perspective. I use prices of the commercial real estate and employ spatial econometrics to examine the UK property market and its phenomena, such as the spillover effect, prime and peripheral areas, 'fly-to-safety' areas, agglomerations, clusters that act differently from the whole property market or dominant areas that have influence on other areas.

The commercial real estate market problems tackled are of importance for real estate investors. I aim to simplify the ways of examining a range of property market issues, to investigate spatial phenomena and to add value for commercial real estate investments decision making. Moreover, the spatial differences observed between the areas in the UK could be of interest for real estate market participants, for example in risk diversification when creating direct commercial real estate portfolios.



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