

MARKETS, MARKET STRUCTURES AND MARKET CHANGE: EXPANDING THE REAL ESTATE RESEARCH PARADIGM

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ABSTRACT

This paper seeks to challenge conventional thinking about markets and issues of market structure and market change in real estate research. Using a broadly institutional economics approach to markets it proposes a framework for analysis which focuses on the range of objectives the market accommodates, the origins of pressures for change, the objectives of market actors and their market roles. Two applications are considered as illustrations of the potential of this approach to reveal important insights into how real estate markets work in practice.

Keywords: Real Estate Markets, Market Structure, Market Change

INTRODUCTION

Much of real estate research is concerned with the analysis of some form of market outcome, be it an appraisal, a rent, a return or a rate of development. However, in many cases the focus of the research remains solely on the outcome rather than the market process which generated it. As a result our knowledge of how real estate markets work is at best partial. The market is always somewhere in the background but rarely is it centre stage. Some of its well known characteristics may be listed but not explicitly incorporated in the subsequent analysis or even worse assumed away. This is surprising considering that the underlying structure of the real estate market will inevitably impact and shape the outcomes it generates. Little consideration is given to issues of market evolution and change, the range of market objectives accommodated and how the markets current structure may both facilitate and constrain the objectives of various market participants.

This paper seeks to challenge how we think about markets and issues of market structure and market change in real estate research. In particular, it attempts to illustrate the extent to which useful contributions to core real estate knowledge might be gained from placing the market centre stage for once. Starting from the perspective of neoclassical economics and its relatively rigid treatment of markets the paper explores the economic analysis of markets from both orthodox and non-orthodox perspectives. From this it constructs a

critical assessment of the respective contributions and limitations of the approaches considered.

The core of the paper centres on two illustrations of what a more 'holistic' approach to the analysis of markets, market structures and market change in real estate research might potentially contribute. The first is concerned with institutional change in real estate investment markets. By focusing on changes in the range of objectives that markets accommodate a more complete understating of investment market change and its implications for investment market actors emerges. The second illustration is concerned with how an approach to the analysis of real estate markets which focuses on changes in both information costs and information requirements can yield important insights into the market's information generation process the outcomes of which have been a primary focus for analysis. Moreover, this approach also provides a realistic account of how intermediation roles in the real estate market have changed in response to changes in both information costs and information requirements. The paper concludes with an assessment of the issues identified for the analysis of markets in real estate research.

MARKETS AND MARKET STRUCTURES IN REAL ESTATE

The Neoclassical World

In conventional 'neoclassical' economics¹ the primary function of any market is to allocate resources. This involves the allocation of resources to their highest and best use with an assumption that the resulting allocation is efficient. Market based resource allocation is predicated on some form of price mechanism. Price signals reflect market conditions - demand and supply, with prices changing in order to alter the behaviour of market participants as a means of restoring equilibrium. In this neo-classical world producers alter production in response to price signals with consumers altering their consumption behaviour likewise. The whole process of adjustment is assumed to be unproblematic and relatively instantaneous. Disequilibria are consequently temporary, prices are an efficient measure of value and markets allocate resources efficiently. All market actors' exhibit rational, maximising behaviour and chronic information problems are absent.

However, the real world reality of many markets deviates considerable from this neo-classical world (Kaldor, 1972; Hodgson, 1994). The real estate market provides a useful case in point. When this paradigm of market analysis is applied to the specifics of the real property market its deficiencies become readily apparent. Given the intrinsic legal and physical characteristics of real property, market adjustment will never be instantaneous. The producers of property cannot respond instantaneously to new market requirements due to the physical nature of property and both the complexity and length of the development process this necessitates. The consumers of property are also likely to

¹ For a discussion on meaning of the term 'neoclassical' economics see Aspromourgos (1986)

be constrained in responding fully to changes in market conditions due to factors such as property rights, lease provisions, significant transactions costs, information deficiencies and simple inertia. As a result the concept of a long-run equilibrium in the context of the real property market might be rather meaningless. Instead the market might be better understood in terms of a series of short-run disequilibria characterised by periods of over and under pricing where prices have the potential to deviate significantly from market fundamentals. The deficiencies of this approach are further exposed when consideration is given to the fact that real property markets are spatial markets by definition, with as a consequence obvious problems of both product and price information. The picture is further complicated given that the demand for property in many circumstances is highly segmented by functional motivations specifically those of use or investment.

While the standard neo-classical approach to markets is important in that it highlights their role as resource allocations and rightly spotlights the price mechanism as central to this process, taken on its own, it is unlikely to provide a fully adequate account of how markets work in practice. As a result it important to consider what alternative approaches exist and how they might contribute to developing a better understanding of how markets work by acting as a vital interpretative context to the basic insights revealed by this standard neoclassical approach

One obvious point of departure to improve our understanding of how markets work is to focus on issues of market structure and their implications for conduct and performance. This structure, conduct, performance (SCP) paradigm (Bain, 1956; Scherer, 1970) has been central to development of a modern theory of industrial organisation and rests broadly within the framework of neoclassical economics. Within this the structure of the market is explicitly recognised as a key influence on the behaviour of market participants and ultimately on performance measured in terms of price and output. Different models can be developed to account for the specific circumstances of particular market structures. The approach makes a number of important contributions. Focus is placed on the characteristics of the product traded, the nature of market participants and the degree of competition exhibited in the market place. This information is used to predict performance and if necessary to formulate policies to promote competition.

Applying this to the specifics of the real property market begins to yield a more in-depth account of how the market works and more specifically an appreciation of its market structure and likely performance outcomes. In particular, it highlights the complexity of the structure of the real property market, the need for an explicit and separate treatment of user and investor markets and the market rational for various groups of market participants. However, a key shortcoming of the SCP approach is that it does not explain well the performance of markets which have obvious adjustment problems such as real property. Such markets are readily labelled as imperfect or even inefficient based on their characteristics and left to one side.

At a wider level the SCP approach provides an inadequate consideration of the market rational for existing market structures, issues of market evolution and the range of participant objectives that a market accommodates. Moreover, this approach contributes little to our understanding of participant incentives, the transactions environment that participants face and most importantly of all how market changes and their implications are incorporated and analysed. As a result other alternatives need to be considered.

Institutional structures and systems

Foremost in addressing such deficiencies has been the growth in institutional economics approaches to markets and their analysis (Coase, 1972; 1984; Hodgson, 1994). The focus here is on the institutional structure of the market and its evolution. Within this framework the issues of market process and institutional change become focal points for analysis. In very simple terms the institutional structure of any market might be viewed as the set of rules governing the operation of that market (Eggertsson, 1990; Samuels, 1995). The economic rational for such rules is the reduction of transactions cost. These rules define the transactions environment and structure the transaction incentives for market participants. Some rules maybe very formal and have legislative force, while others may reflect market practices, the basis for which may have long been forgotten. These rules both constrain and facilitate the objectives of market actors at any point in time. The current institutional structure of the market will be optimal for some market participants. They can achieve their market objectives. For others it maybe sub-optimal and constrain the achievement of their market objectives.

Some actors may have been in a dominant market position at one point in time, sufficient to influence the institutional structure of the market so that they could readily achieve their objectives. As a result the current institutional form of the market may embody redundant practices or even restrictive practices designed to exclude other market participants. Pressures for institutional change come about as a result of some form of dissatisfaction with the current institutional structure of the market and the outcomes it generates. In extreme cases this might take the form of government intervention if market outcomes are deemed to be socially unsatisfactory or if the market has failed. Pressures for change are more likely to reflect wider changes in the structure of the economy brought about by factors such as the revolution in information and communication technologies or by the need to incorporate new business practices or market requirements. In order to survive market participants may have to change their core activities and hence their market objectives. Pressure for change maybe internal or external to the market concerned and may reflect the failure of existing or new actors to achieve their objectives within the markets current institutional structure.

It is important to note that institutional change and the process of market evolution it initiates will not necessarily be efficient. It may reduce transactions costs or it may not. There maybe winners and losers. Some new or existing actors may be better able to achieve their objectives while others may face new constraints. The efficiency of any given process of change needs to be judged not from the perspective of the entire market

but rather from the perspective of market participants and the objectives they seek to achieve (Keogh and D'Arcy, 1999). Processes of institutional change are most likely to be gradual in nature involving continuous marginal adjustments. As a result most markets are likely to a mixed bag of institutions (North, 1990), some of which may be in direct conflict with others. The current institutional structure of any market inevitably exhibits some element of path dependency or sensitivity to starting points, or more likely second-degree path dependency which stipulates that intertemporal effects propagate error (Liebowitz and Margolis, 1995).

So what is the benefit of using such an approach to markets and market change in the context of the real property market? In short, it provides important insights into, the rationale for current market processes, the markets evolutionary path, the objectives it accommodates, the objectives it does not and how and why institutional change takes place (Keogh and D'Arcy, 1994; 1999). It shifts the focus from an attempt to rationalise change and its drivers at the aggregate level of 'the market' to understanding change from the perspective of market participants both old and new in pursuit of their particular market objectives. This allows the micro-level drivers of change and their implications to be more readily identified and understood and their implications for market structures and outcomes assessed.

The approach has also the advantage that it does not assume that change will be necessarily efficient for all. It allows for the possibility that their maybe winners and losers from the process who can be identified. Within this it permits a consideration of how markets are inevitably constrained by their history and how certain groups of market participants exhibit considerable inertia to change as they cling to outdated market practices which promote their objectives. The approach also has sufficient flexibility to consider the origins of change at number of levels both from within the market itself and outside. Overall it deepens our understanding of how markets work how market change takes place and as a result makes a significant contribution to our interpretation of observable market outcomes and their implications.

A further strand of analysis which again is concerned with the institutional structure of markets is what might be described as a systems approach to the interpretation of market structures and activities. Following the approach of Casson (1990; 1995) the economy can be considered as an information system rather than the more conventional treatment of it as a system of materials or product flows. The focus is on handling information relating to goods and services rather than on the handling of final or intermediate products. Within this system, economic institutions, markets or firms evolve to allocate decision-making responsibilities and structure information flows (Casson, 1990; 1995). This highlights the importance of information, its characteristics and costs, as drivers of institutional formation and evolution. Focus is placed on information intermediation through market-making, with the market-maker performing a key role in adding value and reducing information costs by structuring information flows and creating an information synthesis.

Within this framework the form that market institutions take might reasonably reflect information costs both collection and communication and also the potential for information asymmetries. The structure of institutions themselves becomes a direct response to the magnitude of the information problems exhibited. As information costs change due for example to improvements in communications technology the structure of these institutions change to reflect this. For example, institutional change driven by falling communication costs might over time, increase the geographical scope of firms and markets. Likewise changes in the information requirements of market activities prompt institutional change through the requirement for new market marking roles and new categories of information flow.

The institutional structure of the real estate market broadly reflects its information costs and potential problems of information asymmetries. This in particular, is reflected by the active market participation of a wide range of professional experts and service providers whose primary function is to reduce information cost through intermediation activities. Experts in the real estate market collect information relevant to real estate involvements, add-value to it through its interpretation and communicate it to various groups of market actors such as occupiers, investors and developers, who in turn use this information to achieve their market objectives.

While both of the institutional approaches outlined have considerable merit over their alternatives, a key issue of measurement exists. It is essential to establish at the outset appropriate quantitative-qualitative indicators which fully capture any insights revealed by the analysis. In many cases a detailed survey methodology may be necessary in order to fully utilise these approaches.

SUMMARY

This section has provided a critical account of the treatment of markets and market structures from a variety of economic perspectives. Table 1 provides a comparative overview of the key features of each approach. The principal area of divergence is the issue of how to both account for and analyse market structures and their implications.

Table 1: Economic Approaches to Understanding Markets

Approach	Key Issue	Focus	Outcomes	Problems
<i>Neoclassical</i>	Resource Allocation	Price Mechanism, Instantaneous Market Adjustment	Market Clearing, Equilibrium, Efficiency	Assumption of unproblematic adjustment
<i>Structure-Conduct-Performance</i>	Market Structure	Firm Characteristics, Competitive Environment	Price and Output Determination, Performance Benchmarks	Description not explanation of market structure
<i>Institutional Structure</i>	Market Evolution	Transactions costs, Institutional Structure of Market, Objectives accommodated, Institutional change	Institutions as market rules, Actor Objectives, Market structure efficient for some not for others	Measurement, Indicators
<i>Information System</i>	The Market as an information system	Information Flows, Information Generation, Intermediation Roles	Information costs, Information Requirements	Measurement, Indicators

REAL ESTATE MARKETS AND MARKET STRUCTURES IN PRACTICE

The objective of this section is to provide some illustrations of how expanding the scope of the analysis of markets and market structures in real estate can contribute important insights into how real estate markets work and the principal components of market changes. The first illustration considers the issue of institutional change in the real estate investment market by explicitly considering how the range of objectives accommodated by markets has shifted and the implications this holds for both investor behaviour and market structures. The second uses an information system approach to examine the changing intermediation roles performed by information intermediaries and their

implications for the intermediaries themselves, the structure of the real estate market and the process of information generation within it.

Institutional change in the real estate investment market

The structure of the real estate investment market has undergone significant changes in recent years. An obvious manifestation of such change has been an increase in the number and diversity of indirect investment vehicles offered. This growth in indirect vehicles reflects a combination of their favourable investment characteristics, changes in the attitude of investor groups towards property, positive legislative change, financial innovation and improvements in information flows. Overall significant institutional changes have taken place in the structure of real estate investment markets. The range of investment objectives accommodated has significantly increased and likewise the investor base. However, to understand the full implication of these changes it is important to examine in more detail the intrinsic characteristics of real estate investment vehicles and the investment objectives they accommodate. This is important as investors are not only faced with ever increasing choices but even more complex investment structures and associated risks. From the insights gained an assessment can be made of the implications for both investors and investment market structures.

The analysis which follows attempts to provide a clear illustration of the full spectrum of available real estate investment vehicles in terms of the range of investment objectives they accommodate. This is structured at a number of levels in order to fully illustrate their complexity and associated risks. Table 2 (below) provides an overview of the current spectrum of investment vehicles and their intrinsic investment characteristics. This illustrates the diversity of such vehicles which range from the liquid to the illiquid, from direct property to property derivatives. It also illustrates the complexity of the choices now faced by property investors

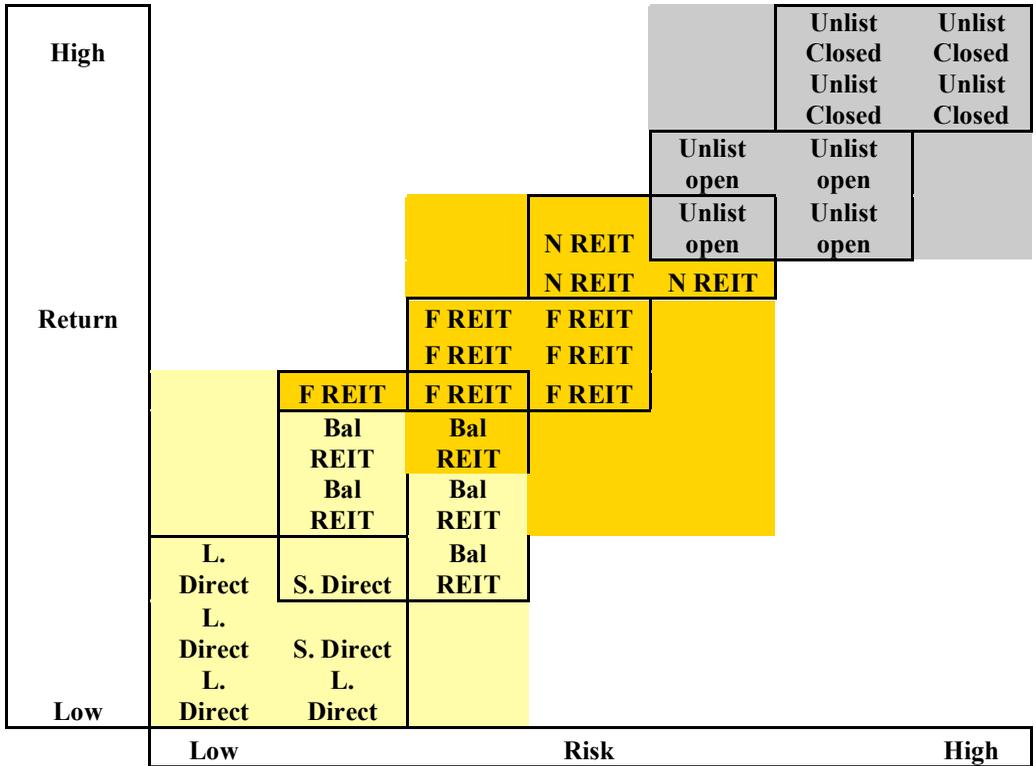
Table 2: The Spectrum of Real Estate Investment Vehicles

Direct/indirect	Control	Management Input/cost	Liquidity	Performance Information
Direct				
Internal Investment	High	High	Low	High
External Management	High/medium	Medium	Low	High
Indirect				
Real Estate Funds	High/low	Medium	Low	High
REITs: listed	Depends on holding	Daily monitoring/Low cost	High	High
REITs: Unlisted	Depends on holding	Low cost	Low	Low
Property Companies	Depends on holding	Daily monitoring/Low cost	High	High/low
Derivatives				
Total return Swaps	None	Monitoring/high cost	Unknown	None
Futures	None	Daily monitoring/Low cost	Unknown	None

Source: D’Arcy and Lee (2006)

To help in understanding further the investment objectives accommodated by each type of real estate opportunity Figure 1 (below) adds further depth to the analysis, by considering the spectrum in terms of the vehicles risk - return characteristics. This again illustrates the wide menu of choice available to potential investors. It also demonstrates that like other asset classes there is a clear correlation between risk and return. It further suggests that investors who embark on a strategy of indirect investment in the real estate market take on more risk on the expectation of higher return.

Figure 1: The Risk-Return Spectrum of Real Estate Investment Vehicles



Source: D'Arcy and Lee (2006)

Key: L= Large; S=Small; Bal= Balanced;

F= Focus – Type/Region; N=Niche

In Figure 2 (below) further aspects of the investment objectives accommodated by the spectrum of real estate investment vehicles are examined. In particular, it illustrates that indirect vehicles require asset management skills outside the competencies of most traditional real estate professionals. With indirect vehicles, investors loose control and often have to deal with significant problems of performance information. Again the figure demonstrates the complexity of the menu of investment vehicle options and objectives facing the real estate investor.

Figure 2: The Spectrum of Real Estate Investment Objectives

Core Skills	Control						Specific Skills
	High					Low	
Finance						Unlist Closed Unlist Closed	Real Estate PLUS High finance
					Unlist open	Unlist open	
Asset Management				N REIT	Unlist open	Unlist open	Real Estate PLUS Corporate finance
				N REIT	N REIT		
			F REIT F REIT	F REIT F REIT			
		F REIT	F REIT	F REIT			
		Bal REIT	Bal REIT				
		Bal REIT	Bal REIT				
		L. Direct	S. Direct	Bal REIT			
Real Estate	L. Direct	S. Direct				Real Estate PLUS Portfolio construction	
	L. Direct	L. Direct					
	High	Performance Information				Low	

Source: D'Arcy and Lee (2006)

Key: L= Large; S=Small; Bal= Balanced;

F= Focus – Type/Region; N=Niche

Using this analysis of investment objectives we can begin to assess the potential implications that institutional change in the real estate investment market holds for the real estate investors. On the one hand the greater choice of investment vehicles has the obvious advantage that investors can now invest in vehicles to achieve their own risk/return objectives across the full investment policy spectrum. Thus, for larger investors who favour direct real estate the spectrum of indirect vehicles can offer added value to their traditional direct portfolio. Indirect vehicles also offer existing direct investors the opportunity to invest easily and quickly in particular real estate markets to capture any anticipated market upturn without undue price impact, while the investor searches for the right direct investments, a process which may take up to nine months to complete. Smaller investors may adopt an indirect route as the easiest and cheapest way to gain access to an additional asset class previously denied to them due to lack of capital and management expertise.

However, the introduction of so many vehicles will necessitate a major re-education program for investors and their advisors. For instance, the vast array of investment vehicles means that investors now face the problem of the correct classification of the various investment vehicles to meet their objectives. As shown in Figure 1 there is a huge overlap between the vehicles across the spectrum of opportunities. Therefore, is a listed REIT that invests solely in retail properties a value added or an opportunistic investment vehicle? Such a REIT could be either depending on the types of properties held, primary, secondary; the re-development potential within the portfolio; their location (major or secondary cities) and so on and so forth. An investor hoping to use such a vehicle to add value to their core private portfolio when in fact the vehicle is an opportunistic fund could be opening up the institution to risk that they never considered. In other words, the management of an indirect portfolio present whole new challengers to traditional and new real estate investors alike.

A number of important implications for the future structure of real estate investment markets also follow from this analysis. The increased range of investment objectives accommodated has the potential to distribute institutional money to a wider range of geographical locations. This addresses a long-standing criticism of the real estate investment strategies of major investors namely that they only invested in core markets with well known product and performance characteristics. With the advent of indirect vehicles many regional markets will benefit from core investment flows for the first time. This is likely to happen as the introduction of REIT type structures in more countries may result in a number of regionally based property companies converting to a REIT structure. Such developments are also likely to expose regeneration areas to significant flows of institutional money. While some locations may benefit from new investment flows the development of indirect vehicles and more importantly a strategy of indirect only investment may also result in the migration of capital from low growth to high growth regions both within and in particular across national boundaries. The change in the range of objectives accommodated allows investors to pursue a global real estate investment strategy with greater ease and at lower cost. This is likely to increase the

importance of cross-border capital flows in real estate. This may be bad news for regions whose growth prospects are poor relative to other global regions.

The process of institutional change examined also holds important implications for the base of human capital in real estate as suggested in Figure 2. A key issue in this context is that many property professionals and real estate service providers in some regions are only comfortable with advising on direct real estate investment strategies and have little experience of indirect. Their skill base is incompatible with the needs of the indirect market. Ultimately the logic of such change is emergence of a new generation of real estate asset managers who are equally comfortable with the direct and indirect, the national and the international. This also has obvious implication for real estate education programmes and the core skills delivered by real estate educators.

The approach taken has allowed the components of institutional change in real estate investment markets to be identified and their implications assessed. A number of important insights have emerged. The range of investment objectives accommodated has expanded considerably in recent years causing significant changes in the structure of the market. Such changes have presented the investor with a greater menu of potential real estate investment strategies which straddle the full gambit of potential investment policies. These changes have also contributed greatly to the internationalisation of real estate investment activities and the development of truly global investment strategies. However, at the same time these changes introduce a whole new level of risks which some investors may not have seen or wanted. Some markets will benefit from new investment flows others will loose. Likewise, change makes the core skills of a number of existing market actors redundant but will at the same time create a market for a new set of actors and skills.

Information generation and intermediation roles in the real estate market

The second illustration examines what insights might be gained into the process of information generation in real estate markets if an approach which views the real estate market as an information system is adopted. Within this framework the primary function of the market is to structure information flows. Markets evolve institutional solutions to deal with the problems of information costs and asymmetries and to cope with changes in information requirements. Within this framework the markets information costs and information requirements determine the characteristics of market intermediaries and the intermediation roles which they perform. In the real estate market, real estate service (RES) firms have traditionally performed the bulk of such intermediation roles. Their primary function is that of information intermediation. They add-value and reduce information costs by structuring information flows and creating an information synthesis. Therefore, it is important to examine how changes in information costs and requirements over-time have conditioned the evolution of such intermediaries and their intermediation roles and how in turn such changes have created new intermediation roles. Given the central role played by information intermediation in the information generation process such an examination is likely to reveal important insights in this process in real estate

markets. Directly related to this it is also useful to consider how the process of information generation will itself be conditioned by both the range of intermediation roles which exist at any point in time and the efficiency of the intermediaries which perform them.

The origins of the vast majority of RES intermediaries are to be found in transaction and appraisal services. Information costs directly related to the intrinsic physical and legal characteristics of real estate create obvious intermediation roles for professional experts in the provision of such services. As a result the intermediaries evolved significant intermediation capacities with respect to structuring information flows and creating an information synthesis necessary to support transactions related activities. Initially, the expertise of intermediaries was confined to well-defined local market areas, reflecting the importance of local market information for transaction activities. Overtime such activities created cumulative experience in constructing an information synthesis with the development of proprietary methodologies for information collection, synthesis and dissemination. This provided an impetus for some firms to expand beyond their original market areas in order to exploit the intermediation advantages they had developed and ultimately some form of economies of scale in the provision of such services.

The growth strategies of RES firms also reflected the incentive to overcome problems of information quality through an extension of property rights over information sources and flows and the increased standardisation of information processing this implies. Such developments can be viewed as a rational response to the information problems relating to uniqueness and spatial fragmentation in real estate markets. Expansion allowed intermediaries to service consumers requiring transactions services in multiple locations a factor which would stimulate further growth and reinforce some existing intermediation advantages while offering the potential to develop new ones.

The evolution of large players in RES allowed for the development of new intermediation roles beyond those with a purely transactions motive. Specifically many of these roles reflected developments in commercial property investment markets which required new types of information synthesis to meet client needs. In particular, those related to strategic investment advice, portfolio and asset management. New roles also evolved with respect to more complex occupier requirements and development advisory. Economies of scale in service provision allowed cross-subsidisation of service categories to take place within firms ensuring that sufficient resources could be committed to the development of new intermediation roles. These roles now spanned both transactions and consultancy as firms grew a consultancy business out of their transactions base. As a result of this movement to a more consultancy base many intermediation roles inevitable became more specialised and client specific with less scope for the use of existing proprietary methodologies.

Changing market information requirements have also generated new intermediation roles for non-traditional RES providers. The changing requirements of real estate investment

markets in particular have been a significant catalyst in this respect. The emergence of new explicitly investment information driven intermediaries such as *Investment Property Databank* (IPD) in the United Kingdom and other benchmark providers elsewhere serves as a useful illustration of such developments. The requirement for the benchmarking of investment performance was an intermediation role beyond the capacity of existing intermediaries. The emergence of IPD allowed existing intermediaries to pool their information flows to create a necessary information synthesis which over-time contributed to improvements in investment market transparency which in turn has benefited existing RES providers through investment market growth.

However, not all changes in market information requirements have been beneficial to existing intermediaries. Changes associated with the growth in both listed and non-listed indirect real estate investment vehicles and the increasing prevalence of outsourcing and public-private partnership type structures have created new intermediation opportunities for non-traditional RES providers. In particular such developments have facilitated the entry of established intermediaries from both financial and other professional business services (PBS) whose existing intermediation expertise allowed them to perform these new RES intermediation roles with ease. A number of specialised boutique RES providers have emerged to fulfil some of these new roles. New entry may also reflect the inability of existing intermediaries to respond to new market requirements as a result of ingrained market practices, professional biases or simple inertia.

Irrespective of its primary cause, new entry has increased the competitive pressure on existing intermediaries and prompted them in some instances to compete aggressively for business with the new entrants and to a reorientation of their intermediation roles to support this. This reorientation has resulted in the increased specialisation of leading intermediaries in high-value added intermediation roles and their exit from more routine and less profitable roles. As a result it has created new relationships in RES intermediation between the leading national and international firms and locally based routine intermediaries, in order to service the leading firm's requirements for local market information. Very recent investment market developments such as the introduction of property derivatives and the continued growth in the listed and non-listed markets are likely to see the advent of further new RES intermediation roles and relationships.

The revolution in information technology and its impacts in terms of falling information costs have also played an important part in facilitating the evolution of new intermediation roles for traditional RES providers and new entrants. This revolution facilitated the creation of more versatile service products that economise on information costs while at the same time favouring the production of a wider variety of more information intensive bespoke service products. This latter factor greatly assisted a shift in intermediation activities to a more consultancy focus. At a very basic level the revolution in information technology has increased the number of information flows which intermediaries need to incorporate into their synthesis. As a result it increases the

complexity of intermediation activities. Paradoxically while it reduces information costs from one perspective, it may because of the extra resources needed to deal with the increased volume of flows and the necessary assessments of their quality and relevance, partially offset some of these cost reductions. For a wider perspective the greater availability of real estate market information at lower cost may reduce the intermediation advantages of some RES providers.

The information revolution has created a direct substitute for some traditional types of intermediation in the form of digital intermediation. Again the impact of such developments will increase competition on existing intermediaries particular on providers offering more traditional transaction based roles where the information flow involved, lends itself to digital codification. The survival of some traditional intermediaries may depend on their ability to embrace new technology and offer both digital intermediations in addition to more tradition forms of intermediation. The potential for digital intermediation in the real estate market will also act to induce new entry from non-traditional RES intermediaries. In the context of more complex intermediation roles the potential to offer clients some element of digital intermediation such as client intranets and play-books may enhance the position of intermediaries and will reduce the management complexity of some intermediation roles. The potential for clients to access some forms of intermediation and market information via digital means has fundamentally changed the information cost landscape in real estate markets for certain types of information synthesis.

Falling information and communications costs have increased the geographical scope of professional experts, market actors and the market itself. Falls in information costs over time both in collection and in particular, in communication have resulted in the increased internationalisation of the market, with significant evidence available of the emergence of international professional expert and actor groups. In RES the recent rapid internationalisation of the sector and the creation of the first global delivery platforms in service provision may be viewed as evidence of such a trend. Internationalisation itself has been a catalyst of product change, with the increased standardisation of proprietary methodologies, product innovations, new roles for professional experts and the emergence of new multinational groups of professional RES experts in the market. This process of internationalisation has also allowed many of its participants to exploit new economies of scale and scope in service provision.

Our principal objective is to assess the implications of all these changes in intermediation roles for the process of information generation in the real estate market. With the advent of the global delivery platforms many information generation processes have become more centralised and in theory more standardised than every before in the history of real estate markets. Given the desire of such entities to promote best practice on a global basis, the quality of the information generation process should be improving. However, the creation of a global delivery platform significantly increases the range of potential information inputs controlled by the firm. Useful information may be generated at

numerous points in the intermediaries' global network. This makes the information synthesis potentially more complex and possibly less accurate. Distance related information costs might increase with new sources of information cost related to differences in language and business culture emerging. The quality of the information inputs used maybe significantly uneven with as a consequence an increased potential for an incorrect information synthesis to emerge. Increased internationalisation and the standardisation it brings suggest that information generation processes are now less influenced by national factors or biases. The quality of the process has become more firm specific and less subject to national arbiters of quality such as professional bodies.

New entry stimulated by new information requirements has increased the diversity of information intermediaries in the real estate market. This has the potential to act as a conduit for change in the markets information generation process through the introduction of new methods and fresh thinking. Ultimately this might induce innovations in the process. Given the characteristics of some new entrants they are likely to bring with them a wealth of experience and best practice in information generation from other business service sectors. The overall impact of such developments is likely to be beneficial for the process of information generation in real estate markets.

While the information generation process has as a result of internationalisation and new entry undergone significant changes, the revolution in information technology has also in many respects redefined such processes. Changes relating to information technology, for example the increased availability of information and falls in information costs have fundamentally modified the organisational structure of intermediaries, complex and routine alike, with significant positive implications for the transparency of information generation processes. Informational technology has redefined the processes relating to the core intermediation roles of information collection, synthesis and dissemination. The increased codification employed has improved significantly the transparency of the information generation process. The importance of digitally based accessible information sources and various forms of digital intermediation have likewise had a positive impact on the transparency of information generation processes.

The approach to markets taken in this section has revealed a number of important new insights into the operation of commercial real estate markets, and in particular, the process of information generation. It has placed the spotlight on both the characteristics of information intermediation roles in the real estate market and the information intermediaries who perform them. Considerable changes have taken place in the structure of intermediaries and in their intermediation roles in response to changes in information costs and market information requirements. Such changes have facilitated the internationalisation of intermediation activities and stimulated new market entry. The characteristics of information intermediaries have become more diverse reflecting a trend towards greater market segmentation and specialisation. The majority of new market-making roles require complex information synthesis with obvious implications for significant changes in human resource requirements. Technology has been an important

driver of changes in the information generation process even to the extent of replacing some more routine forms of intermediation with the possibility of digital intermediation. The combined effect of these changes have increased the complexity of the information generation process in the real estate market but on balance improved its transparency and quality. This analysis highlights the need for a better understanding of the characteristics of the information generation process which underpins market outcomes and in particular the efficiency of the intermediaries involved.

CONCLUSION

The objective of this paper has been to illustrate how alternative approaches to the analysis of real estate markets can provide important insights into their operation. The arguments made suggest an approach which has as a starting point, an understanding of the structure of real estate markets from a broadly institutional economics perspective. This allows focus to be placed on the range of objectives which the market accommodates and how these objectives meet those of current market actors and their market requirements. Using this framework an analysis of market change can be constructed with focus placed on identifying pressures for change – for example new entry, new market requirements - the translation of such pressure into actual changes in the range of objectives the market accommodates and finally the implications of these changes for both established and new market actors, their objectives and their market roles. The approach adopted explicitly recognises that all processes of market change will generate both winners and losers. Change will be efficient for some but not for others. As a result a key question which emerges is that of for who is the market efficient for? This contrast with the more tradition one of is the market efficient?

The two illustrations contained in the paper provide relevant examples of how such an approach to issues of market structure and market change might be applied in practice. Which recognising at the outset obvious concerns about quantification and measurement the applications nevertheless demonstrate how the approach taken serves to significantly clarify and structure thinking on what in reality are quite complex processes of change. These applications lead directly to the identification of the components of market change involved, their principal implications and the parameters necessary for empirical investigation. The second application also demonstrates the approach's potential to contribute to our understanding of the information generation process in real estate markets an area where despite its obvious importance, serious knowledge deficiencies persist. Research on real estate markets is littered with empirical investigations that have failed to contribute to core knowledge due to a failure to identify the correct parameters to investigate in the first place. As a result the approach proposed in this paper has much to offer research and researchers on real estate markets.

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