

LONDON SCHOOL OF ECONOMICS

**The Information Infrastructure of Land  
Registration in England: A Sociology of Real Estate  
at the Intersection of Elites, Markets and  
Statistics**

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# Declaration

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# Abstract

*This Thesis presents a sociology of the development of land registration in England and examines its relationship to understandings of the housing market, statistics, and elites. Through approaching land registration as an information infrastructure, this research prioritizes the previously overlooked foundations of the housing market, that underpin how it operates and through which it becomes known. To do so, this Thesis combines historical methodologies with computational methods utilising contemporary big data. It seeks to track how land registration in England from its 19th century origins, solidified into an information infrastructure and by utilising this understanding to ask questions of the modern land registration, highlighting these ongoing legacies of elite power, through an analysis of its transactional data. This Thesis is split into three cases. Firstly, an examination of the early land registry, its legal and socio-material organization and standardization, addressing the context of elite aristocratic power in which the system arose. Secondly, an analysis of housing market statistics in the UK, addresses how their relationship to the information infrastructure of land registration has allowed for the exclusion of elite housing practices from official statistics. The third case study, through utilising computational methods, paints a different picture of the UK housing market by adding back in the 'missing' houses of contemporary elites, which are owned through offshore shell companies. This research therefore contributes to the study of inequality in the UK through revealing the extent of elite housing wealth held in offshore jurisdictions. Arguing that in order to better identify the relationship between the housing market and elite power the importance of understanding land registration as an information infrastructure underpinning it, cannot be understated.*

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# List of Abbreviations

ATED	Annual Tax on Enveloped Dwellings
BoE	Bank of England
BSA	Building Society Association
CCOD	Commercial and Corporate Ownership Dataset
CML	Council of Mortgage Lenders
DCLG	Department for Communities and Local Government
DETR	Department of the Environment, Transport and the Regions
DoE	Department of Energy
EPC	Energy Performance Certificates
EPC-DOM	Domestic Energy Performance Certificates
EPC-NONDOM	Non-Domestic Energy Performance Certificates
EYE	Overseas Company Ownership Data - Private Eye Release
HMRC	HM Revenue and Customs
HNWI	High Net Worth Individual
HPI	House Price Index
IOPN	Index of Proprietors Names
LPSNI	Land and Property Services Northern Ireland
LR	HM Land Registry (England & Wales)
LSOA	Lower Super Output Area
MHLG	Ministry of Housing and Local Government

OCOD	Overseas Company Ownership Data
ODPM	Office of the Deputy Prime Minister
ONS	Office for National Statistics
OS	Ordnance Survey
PPD	Price Paid Dataset
REIT	Real Estate Investment Trust
RoS	Register of Scotland
RPI-AC	Retail Price Index Advisory Committee
RPPI	Residential Property Price Index



*Land registration is about people. Of course, technically speaking, it is about estates and interests, transfers and leases, charges and incumbrances; but at its heart is the society it serves. Property ownership affects all aspects of our lives. It relates to where our children go to school, to our plans for retirement, to our partnerships, our businesses, and our work. Because all of this matters to us, disputes often arise.*

*Pownall and Hill (2018), pp 7*

# Chapter 1 — Introduction

On top of Highgate Hill in North London sits Witanhurst House, built-in 1913 it is the largest private home in London after Buckingham Palace. With 65 rooms, a 5-acre garden, a private ballroom and many other, countless, luxuries; Witanhurst seems to epitomise the vast industrial and colonial wealth that had been amassed by the British elite at the end of the long 19th century. By the 1970s, however, the fortunes of the Crosfield family, who had built and lived in the House, had dwindled, and the property was put on the market. For the rest of the 20th century, the House remained unoccupied, passing through the hands of multiple absentee owners and property developers, with many believing that such a palatial House could no longer be maintained by a single fortune (Webber and Burrows 2016).

Yet, in 2008 Witanhurst was sold to an anonymous private buyer for £50 million. The House, now restored from the dilapidated state into which it had fallen — at a reported cost of £2 million per week — is now estimated to be worth a staggering £300 million (Caesar 2015). The scale of the sums involved in the purchase and restoration of this property display the magnitude of contemporary wealth inequality in London and the concentration of wealth in the hands of an international super-rich elite for whom London is a prime 'global city'.

The lavish renovation, which included the addition of a two-story 45,000 sq ft basement underneath the House, attracted significant attention from local campaigners and the press. The scale of the work involved was highly visible to all

those who passed by, with Witanurst occupying a prominent position overlooking Hampstead Heath and the North London skyline. What was not visible, however, was who owned and was financing the vast renovation and expansion of Witanhurst.

The puzzle of Witanhurst, who was the ultimate owner of this property, was a matter of significant public and media speculation. It was a puzzle that inspired the research questions of this Thesis. And, one which was further fuelled by the name of this owner being revealed at a small academic presentation I attended at the start of this PhD on the 'super-gentrification' of Highgate. This puzzle was made even more tantalising by the senior academic speaking, warning those present not to advertise this knowledge lest they become the target of libel lawyers.

A warning that naturally sparked an interest to gather as much data about Witanhurst as was possible; a task which proved to be largely fruitless. As, the purchase of Witanhurst was carefully structured through a company registered in the British Virgin Islands in a manner that hides its true owner from being identified in legal documents. Little more information about the ultimate owner could not be gleaned through examining the planning applications, work carried out on the House by sub-contractors, and housing market statistics. Indeed, the purchase of Witanhurst, at an almost unprecedented value and at the start of the financial crisis, does not register in housing statistics for the area despite its reported cost being almost twice as large as all housing transactions in the local area that month. An omission, which as this research will detail, is a result of the way in which knowledge about the property market in England is constructed.

The owner of Witanhurst was revealed not long after the research for this Thesis began, with an expose published in the New Yorker revealing the true owner of the House to be Andrey Guryev, a Russian fertiliser oligarch. However, this revelation was not brought about by investigative journalism, or through carefully tracing the

ownership details of the property, or of any information collected by the state, but because of inadvertent postings to the private Instagram account of Guryev's daughter.

Therefore, the research presented in this Thesis considers the puzzle of how such a prominent house, and its ownership, could be so obscured from view. As far from being an anomaly, as the research presented in this Thesis will show, there are tens of thousands of similar high-value homes which are owned in a manner so as to obscure their true ownership across London and England and Wales.

The research presented in this Thesis is focused on the background and overlooked features on which this puzzle rests; of how ownership of land and housing is evidenced, recorded, and made visible through the process of registration. It seeks to understand how the system of property ownership, in which a puzzle such as Witanhurst is situated, came to be and functions. One in which the ownership of such a property can be seamlessly transacted, owned, and embedded in forms of publicly accessible information and yet remain such an enigma.

To do so, this topic is approached as a question of land registration — the system through which all property must now be owned and transacted. It asks how this system came to be and how it functions. In doing so, it seeks to investigate the process of registration and examine how the working of this system relates to and can contribute towards sociological understandings of elites and housing.

To explore this subject, this research adopts a new approach to how land registration can be understood and a novel approach to the study of elites and housing through adopting the theoretical framing of land registration as a wide-reaching information infrastructure. To do so, the research in this Thesis seeks to ask:

*How can land registration be understood as an information infrastructure and what does this mean for sociological understandings of housing and elites?*

A question through which an example like Witanhurst, and of other properties like it, can be explored; not simply as a missing data point but understood as part of a system of information structuring. Moreover, how this infrastructure is embedded within a wider set of societal relations.

To approach land registration as an information infrastructure is to approach it as a set of complex set ongoing relations. In which the legal, technical and social are continually assembled into an infrastructure through which land becomes and remains registered. This approach to land registration has a number of distinct advantages, each of which contributes to the way in which both land registration itself is understood sociologically and its wider relation to the study of housing and elites. In doing so, this approach allows the research in this Thesis to 'open up' the *Blackbox* of land registration to investigate the tangled mixture of legal standards, technical operations, political compromises and social relations on which this infrastructure has been built.

To see land registration as an information infrastructure is to recognise the extent to which the work of land registration underpins the ownership, occupation and trade in property in England and Wales. The importance of which is laid out clearly by the LR:

*HM Land Registry plays an important role in the property market, underpinning property ownership worth over £4 trillion across England and Wales, including over £1 trillion of mortgages. (Land Registry 2017b)*

This is a figure which as Dorling (2014) points out may well be a significant underestimation depending on how the value housing equity is calculated.<sup>1</sup> A figure of £4 trillion, which is underpinned by the infrastructure of land registration, makes up a shocking 61% of the UK's entire net wealth. The size of this value alone demonstrates the scale of the information infrastructure of land registration and the

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<sup>1</sup>And excluding the housing markets in Scotland, Northern Ireland, and other Crown dependencies.

importance of land registration as an area of sociological study.

However, what is meant by the term 'information infrastructure' in the context of the research presented in this Thesis? In adopting a broadly STS approach, infrastructure is approached as existing in the background, often being taken for granted or even being 'invisible' in its operation (Star and Ruhleder 1996). Trends in the average housing price are widely known, and all features of the modern housing market and economy are routinely taken for granted. However, what is made invisible in land registration is the underpinnings of how property is owned, how this ownership is evidenced and how it is transferred. Furthermore, knowledge of the housing market itself is derivative of the infrastructure of registration. The infrastructure of land registration is to be considered an information infrastructure because it is primarily devoted to the collection, validation and archiving of information. To use the words of Bowker, Baker, et al. (2010) this is to see an information infrastructure as "pervasive enabling resources in a network form".

At the heart of the research presented in this Thesis and the information infrastructure studied lies the Land Registry [LR] whose statutory responsibility is "the business of registration" (Land Registry 2015). The infrastructure of land registration, however, is not contained within the institution of the LR but spreads outwards from it to a wide range of assemblages from which the process of land registration becomes. It is therefore important to recognise the long-arch historical trajectory of land registration which has developed over the course of hundreds of years and which has become manifest in the infrastructure of today. This includes; the legal development of the ownership of real property; the way in which ownership is evidenced; how evidence of ownership is situated in material records and documents; the becoming of this infrastructure from one which registered six properties in the year of its founding to one that now handles 17,000 applications a day (Land Registry 2018c); finally the professional knowledge and networks

involved in the supporting, maintaining and utilisation of this infrastructure. It is a wide array of practices, standards, and classifications on which the property market is able to 'run' and one which has enabled the trade in property to operate as it does today.

To approach land registration as an information infrastructure is to see it not as a thing in and of itself, but as a set of ongoing relations in which the infrastructure becomes (Star and Bowker 2006). To do so has enabled scholars to ask "The moral questions which arise when the categories of the powerful become the taken for granted when policy decisions are layered into inaccessible technological structures" (Bowker and Star 1999, pp 320). It is on this imperative that this research into the information infrastructure of land registration focuses on the role of elites and what can be learned of their relation to housing and in the shaping and form of this infrastructure. In doing so, this research seeks to centre the importance of wealth and power in the infrastructure of property ownership by exploring this socio-technical configuration as one that has always been political and questioning in whose interests it serves.

To approach this question and to handle the complexities of dealing with the scale and size of the infrastructure of land registration, the research conducted for this Thesis was split into three case studies. Each case study seeks to open up the *Blackbox* of the infrastructure of registration from a different angle. In doing so, each case study explores a different aspect of the infrastructure within a broader set of interconnections and relations. Each case study seeks to build on the others to further the central research question of this Thesis.

Each of the three case studies presented in the following chapters explores a different time period and scale of the information infrastructure of land registration. The first case looks at the early development of the land registration from before the LR's founding in 1862 to the start of the twentieth century. With this case being split

into two Chapters; the first focused on the socio-material and legal *Blackboxing* of transactions in property as a standardised and registrable unit, and the second placing this development in the wider configuration of land law and land ownership as a mechanism of elite power. The second case is primarily concerned with the period 1945-2018 and traces the development of aggregate national statistics through the growth of the information infrastructure of land registration. As with the first case, this is split into two Chapters; the first focusing on the development of housing market statistics in the UK over this period, and the second on the econometric methodologies used in quantifying the housing market and what can be learnt about elites from housing market data. The final case is contained in a single Chapter which returns to the puzzle of 'hidden' high-end properties, such as Witanhurst, and uses computational methods applied to land registration data to develop a sociological understanding of these practices. In doing so, it brings together the focus on individual transactions and aggregate statistics by working within the data of the infrastructure to investigate single data points and build them up into a comprehensive national picture. The Final Chapter is, therefore, the culmination of the research presented in this Thesis and its analysis draws on the historic legacies of the development of the infrastructure of land registration presented in Chapters 4 & 5, as well as on the quantification of the housing market analysed in Chapter 6 & 7.

The case study presented in Chapters 4 & 5 asks questions that focus on the formation of land registration as an information infrastructure and of the act of registration as a single unit. With Chapter 4 asking:

*"What were the socio-material and legal conditions for the development of land registration? What can be learned about the current system of land registration through understanding these conditions?"*

This Chapter analyses the individual transaction as the foundational feature of the



infrastructure of land registration. The research in this Chapter focuses on how land is owned, how ownership is evidenced, and ownership is transferred. In doing so, this Chapter addresses a long-arch historical trajectory of land registration from the first registries in Middlesex and West 1764 to the implementation of compulsory registration across London at the start of the twentieth century. Through examining the socio-material and legal development of land registration, this Chapter argues that the fundamental innovation of the infrastructure of registration was the *Blackboxing* of the complexity of the conveyancing processes. One which reaches beyond the institutional confines of the LR to encompass the reform of English land law, the development of administrative and professional competencies, the mapping and standardisation of the representation of land and the assemblage of these elements into an enduring infrastructure of land registration. Demonstrating how this process of creating a standardised legal exterior for the ownership and transfer of property, and which continues to remain the kernel around which the LR today continues to operate.

Chapter 5 picks up where the first case study ended and places the development of the infrastructure of land registration discussed in the previous Chapter in the context of land ownership, elite power and legal complexity. It asks:

*What effect did real estate law and elite power have on the development of the information infrastructure of land registration?*

To do so, this Chapter starts with a current definition of the LR's role and a distinction contained within it — of that between freehold and leasehold land — as the entry point for opening up the *Blackbox* of registration and exploring the set of power relations which are embedded within. This Chapter starts with the early origins of the split in ownership through medieval copyhold leases and from here developing an understanding of the power of elites through the system of land estates, the protection and enforcement of this power through land law and its

complexity, and the relation of these elements to the development of the infrastructure of land registration. The research presented in both these Chapters covering these long historical time spans through drawing on a wide variety of sources, including; secondary historical and legal literatures, parliamentary statutes and debates, historical texts and archival LR documents.

The second case study presented in Chapters 6 and 7 approaches the information infrastructure of land registration from a different angle by enquiring how the property market comes to be known and what can be learnt from this process. The vantage taken in this case study differs from that of Chapters 4 & 5 by moving away from the level of the individual transaction — which did not significantly change in the time span covered in this Chapter, from 1945 to 2018 — to the infrastructure at an aggregate level. Which starts with Chapter 6 asking:

*What is the relationship between the information infrastructure of land registration and statistical knowledge of the housing market?*

This Chapter uses the relationship between these two elements to trace out the development of the infrastructure of land registration and of how the housing market became known. One which moves from only London being covered by compulsory registration in 1945 to all property market transaction in England and Wales being registrable by the early 2000s. Similarly, knowledge of the housing market, and the means through which it becomes known, has undergone significant change during this period, from the first crude nationally produced housing index in 1952 to the creation of the Single National House Price Index in 2016. In this Chapter it will be argued that much of the development of the information infrastructure of land registration was for the sole purpose of enabling the conveyancing of property and, as a result, has not been used to develop statistical knowledge of the housing market. A position which was augmented in the early 1990s as the need for more detailed and accurate statistical knowledge of the housing market, for the purposes

of macro-economic management, saw the start of information collected by the LR being used to better quantify the housing market.

Chapter 7 further develops the way in which the housing market has been quantified by critically approaching the statistical methodology through which the House Price Index is calculated. Secondly, by interrogating the resulting data for what can be learnt about the relationship between elites and the housing market. This Chapter therefore asks:

*What can be learnt about elites and housing from statistical knowledge which derives from the information infrastructure of land registration?*

This Chapter is split into two sections. The first address this question through an examination of the HPI itself, starting with the econometric assumption on which it is based, and working through the meeting of the theoretical quantification of the housing market in relation to the material collection and processing of housing information by the infrastructure of land registration. While the second section turns to what can be learnt from this aggregate information about elites and housing, first from the HPI statistics themselves and then from an alternative exploration of the 'raw' data on which they are based. These two Chapters draw on archival LR documents, official methodological publications, secondary historical sources, statistical data of the housing market, and the 'raw' data from which it is derived.

The case study presented in Chapter 8 seeks to marry the approach and data discussed in the previous two Chapters by working directly with the data of land registration and using it to shed light on the puzzle of the 'missing' high-end homes, like Witanhurst, discussed in the introduction. It asks:

*How does the information infrastructure of land registration complicate knowledge of elite homeownership?*

And:

*How can Land Registry transaction data be used to gain a better understanding of elites and housing?*

In doing so, this Chapter initially approaches these questions as a point of breakdown in the information infrastructure of land registration. By researching these question through the lens of infrastructural breakdown, the research in this Chapter engages with the data-structuring of contemporary LR records. In so doing, the research in this Chapter draws on the findings of the previous Chapters to show that the ‘missing’ homes uncovered by this research are not the result of an breakdown of the infrastructure of and registration, but rather, a feature of how the system of land registration was intended to work. It both explores the contemporary information infrastructure of land registration and, through the use of computational methods, seeks to identify the high-end homes that are ‘missing’ as a result of these practices. This Chapter drew on three datasets published by the LR, further price information leaked to Private Eye and two Energy Performance datasets. From which this Chapter engages with what can be learnt about elites and housing from these practices.

Running throughout all these Chapters are four themes which are at the heart of STS scholarship on infrastructures have long focused “quantification, standardisation, classification and representation” (Vertesi and Ribes 2019, pp i). Each of which is foreground in different parts of the research. The standardisation of how ownership is documented and recorded is a key theme in Chapter 4 & 5. The theme of standardisation is addressed again in Chapter 6 & 7 in a different guise as to how are these already established standards translated into the differing requirements need for the production of statistical knowledge. While in Chapter 8, the classification involved in data-structuring of the LR’s digital data is at the heart of why high-end properties are ‘missing’ from other accounts of the housing market. While the theme

of representation is present in all Chapters. The focus of this representation — in line with the importance of property as a means and marker of wealth and power — is confined to how this relates to elites, in either their presence, as in Chapter 4 & 5, where the politics of aristocratic landowners are prominent in shaping the development of land registration, or their absence, as in Chapter 8.

Tying together each Chapter is the purpose of the information infrastructure of land registration; to facilitate the ownership, transfer, and market in property. This is a recurring theme in each Chapter, with each providing a unique contribution to the way in which the information infrastructure of land registration has been designed to, and has facilitated, the running of the housing market. It will be shown how this is the impulse behind the creation of the LR investigated in Chapter 4 & 5; the driving reasons behind the expansion of the infrastructure of registration and the quantification of the housing market in Chapter 6 & 7; and one of the reasons behind the 'breakdown' that is traced out in Chapter 8.

Together the research presented in this Thesis seeks to understand what can be gained by understanding land registration as an information infrastructure. In doing so, it seeks to consider what this lends to sociological understandings of housing and elites.

# **Chapter 2 — Literature Review:**

## **Housing, Elites and Inequality**

### **through Infrastructure**

The research presented in this Thesis investigates the information infrastructure of land registration and, in doing so, seeks to engage with contemporary inequality through the study of elites and housing. This Chapter, therefore, develops an overview of the academic literature on which this research draws and to which it seeks to contribute.

The structure of this Chapter is arranged to reflect the engagement of the research presented in this Thesis. This Chapter is split into two halves; with the first section of this Chapter reviewing the literature on the sociological study of housing, elites, and inequality; and with the second section addressing the means through which the research in this Thesis address these topics and the information infrastructure literature on which it draws.

### **Housing, Elites and Inequality**

Sociological research into housing takes many forms, with the home being a fundamental feature of many areas of sociological research, from the macro-level of

city-wide urbanism to the micro-level of family dynamics. Indeed, given that the need for the security and shelter which housing provides, as a basic human right and fundamental characteristic of any modern society, housing in its multitudes is a necessary feature of any sociological research (Marcuse and Madden 2016). Within the broader realm of sociological research, however, there are many areas of research for which houses and housing are the specific objects of study.

Of sociological research, which specifically focused on housing as the object of study, one of the primary motivations for this is the role housing plays in the causes and creation of forms of inequality in society. Indeed, within this strand of sociological research on housing and its role in how inequality is understood, this Thesis is located. In focusing on housing as the primary object of study in the relationship between housing and contemporary forms of social inequality, there are two important and inter-related trends to which sociological research has paid particular attention.

The first is a scholarship that focuses on the societal effects of poor quality housing provision. Research in this area has ranged from studies on immediate interventions, such as Clark and Kearns (2012) who have shown that improvements in the quality of housing result in greater wellbeing, to longitudinal studies which have focused on the long term impacts of housing quality. In the U.K., Barnes, Butt, and Tomaszewski (2011) have shown through detailed longitudinal work that the poor life chance outcomes for children increase the longer they are exposed to sub-standard housing. While in the U.S., work by Conley (2001) has shown that both housing quality and homeownership have significant impacts on both the immediate and long-term life chances, in a manner that particularly intersects with racial inequality. Indeed, there is a growing area of research in which the socio-economic inequalities of poor quality housing are being shown to impact health inequalities (Baker et al. 2017). Indeed, the impact of 'ontological security'

afforded to those with the secure housing tenure provided by homeownership (Hiscock et al. 2001) is a theme that has been addressed in both quantitative and qualitative studies. With this area of research having been explored qualitatively by researchers in the sociology of health (Searle, Smith, and Cook 2009), and its disproportionate impact on long-term renters and the young (Morris, Hulse, and Pawson 2017), being used as the basis for social theorising (Boatright 2015).

These lines of research highlight the primacy of housing, focussing on the materiality of the built form of the 'house' in terms of its effect on inequality. This research does not consider that the structuring effects of materiality are beyond the individual house on understandings of inequality.

While centring housing in its analysis, the second line of scholarship seeks to address and attempt to structure materiality outside of the built form of the home itself to that of price and its effect on social inequality. This was a question which was forcefully posed by Hamnett in 1991 when he asked if the U.K. was becoming a '*Nation of Inheritors?*' (Hamnett 1991). This, while firmly focused on the topic of housing, asks if the changing material circumstance in which families, through the rise of house prices and generational transfer, is going have a profound impact on national inequality as a whole. This question, in hindsight, appears to have been both prescient and one which still could not envisage the extent of the dramatic house price growth of the past three decades. Indeed, recent studies have shown that social mobility is becoming a matter of inter-generational wealth transfer, with the trajectory of young people's hopes of homeownership becoming increasingly reliant on inheritances (Köppe 2017). A trajectory that has been driven by both the growth of homeownership, the neglect and decline of social housing, and the growth of house prices that have taken places since the reforms of the 1980s and the acceleration of these trends through the 1990s and 2000 (Hills and Karagiannaki 2013). This trend is a result of the growth of private landlordism, particularly



amongst the ageing and has further enforced inequality at both an inter and intra generational level (Arundel 2017). In combination, these two trends have contributed to a growing interest in the measurement of wealth for sociologists — one in which the role of housing and its intergenerational transfer cannot be ignored. Research into the measurement of wealth — a far trickier and more nebulous concept than that of income (Hamilton and Hepburn 2017; Hills, Bastagli, et al. 2013, See:) — has shown a consistent trend of a rising concentration of wealth towards those at the top of the distribution across rich western democracies (Milanović 2016). For sociologists, this research has both reawakened interest in wealth as a subject of study. Furthermore, this has coincided with new ways to study wealth through both access to new administrative data and their collation into comprehensive datasets (Killewald, Pfeffer, and Schachner 2017). This research has revealed the strength of the relation between the dynamics of housing markets and growing wealth inequality (MacLennan and Miao 2017).

Such research paints a national picture of the changing nature of inequality. However, it is beholden to the production of representative national statistics. A national picture, which, while showing the extent to which inequality has been rising as a whole, is often due to the measures on which they rely, unaware of the extent to which the very far tail is pulling away from an already unequal national picture.

One area of research which has taken a housing centred approach to the long tail of inequality has been sociological research into elites. This research has taken advantage of the spatial fixity of housing to understand this often hard to research group. An area of research that has taken several different and innovative methodological positions. For example, Cunningham and Savage (2017; Cunningham 2017) makes use of the oversampling amongst the most affluent in the Great British Class Survey (Savage, Devine, et al. 2013), as a means of identifying

elite spatial distinction within London and how these fit into a wider picture of inequality in the U.K. While in a move away from the uses of survey techniques Burrows, Webber, and Atkinson (2017) make novel use of the data collected by geo-demographics as a means of further uncovering the distribution and micro-geographies of London's elite, which have subsequently driven the changing patterns of the Capital's urban fabric (Cunningham and Savage 2015). Indeed, the importance of space in the patterns of elite formation which drive inequality in London is a theme which has been explored by Atkinson, Parker, and Burrows (2017), one which is global but in which London forms a crucial node (Hay 2013) in the specific network of elite mobilities (Birtchnell and Caletrío 2013) — with this pattern not being confined to London but is being replicated in global urban centres around the world (Hall and Savage 2016).

The spatial concentration of elites and its importance to the process of elite formation is not something that happens in isolation but is a crucial part of an urban dynamic driving contemporary inequality. The relationship between elites, their housing, and the urban form has been a particular focus of sociological research and has drawn on the wider study of gentrification within sociology (Lees and Phillips 2018). In particular, Butler and Lees coined the term 'super-gentrification' to describe the process which was distinct from normal patterns of gentrification, one which has been chronicled by sociologists who have recorded already established elites being 'gentrified' by those who are not merely wealthy but are international 'super-rich' (Burrows and Knowles 2019; Webber and Burrows 2016). A pattern that is not unique to London with parallel processes happening in cities around the world that is by an international super-rich elite (Forrest, Koh, and Wissink 2017).

Reflecting these trends, research into the impact of elite housing practices on the long tail of inequality in the U.K. has been particularly concerned with 'overseas

investors'. For example, research by Scanlon, Whitehead, and Blanc (2017) found that over 50% of newbuild housing in Central London was sold to investors and owners who were primarily based overseas. Research by Hamnett and Reades (2018) makes use of House Price Index data to suggest that the 'gap' in house prices between the most desirable areas of London and the rest of the U.K. is being driven by international investment. However, this research, as with that on inequality being driven by inter-generational housing wealth, relies on general national statistics. Such measures, in the context of this research area, often result in the 'gap' being highlighted as an emergent trend. This gap has already been established by qualitative research, but quantitative research has been unable to provide causal explanations when utilising the current data sources. In contrast to the limitations of quantitative attempts to analyse the impact of super-rich investors, qualitative research in this area has produced authoritative findings. In skirting the need for quantification, these studies have investigated what is driving the phenomenon of the 'elite villages' of super-expensive Central London real estate from the accounts of those involved. This research has suggested that these residences and the growing demand for them are being driven not for their use-value as homes, or indeed as long term investments, but as a new form of 'safety deposit box' for the capital of the international super-rich (Fernandez, Hofman, and Aalbers 2016). Beaverstock, Hubbard, and Rennie-Short (2004) has noted, "the contemporary super-rich are becoming increasingly adept at investing their wealth to avoid the negative consequences of redistributive policies, often positioning themselves beyond the jurisdiction of nation-states". A process, which further sociological studies have shown is not only evident in the way in which this capital is spent and stored, but in the way in which this is manifest in the built environment; from the architectures of concealment employed by these elites (Atkinson 2016) to the growing conspicuousness of the dark skyline of uninhabited luxury flats (Atkinson 2019).

The study of elites by sociologists has, however, been stymied by the methodological challenges present in researching this privileged group. In particular, it has been argued that the traditional range of social scientific methodologies is not suited to researching a small, exclusive and powerful elite (Savage 2014b). The challenge presented by 'researching up' manifests itself in the positionality of researchers, who often find themselves as unwelcome interlopers, posing awkward and unwelcome questions about power and wealth. While some ethnographic researchers have adroitly adapted their research to fit this challenge – for example, the excellent work of (Khan 2012a) and Glucksberg (Glucksberg and Burrows 2016) – the positionality required by 'studying up' stands in contrast to the dominant mode in which social scientific research is conducted, one which is based on a relationship of consent between researchers and participants. To this end, to use housing as a vector for the study of elites anchoring materiality of the built form provides access for new methodological approaches to be developed. Sociological investigations into the location of homes of elites, how they are owned, and their value, is a potential avenue for new research.

However, the opacity of how super-rich elites structure their investments, and their ownership of residential properties, means that research into such wealth holdings remains limited and circumspect of definitive conclusions. It is, however, clear that the holding of real estate makes up a significant portion of the overall wealth holding of High Net Worth Individuals<sup>1</sup> [HNWI].. A survey of Private Bankers and Wealth Managers who work structuring such holdings reports that the ownership of real estate forms a substantial part of their overall wealth holding – between 11 - 25% for their primary residence and second homes and 11 - 33% in real estate investments depending on the region in which they are located (Knight Frank 2017). The location of residences is equally of crucial importance, as a matter of perceived personal safety (Webber and Burrows 2016), and for the maintenance of business networks and social

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<sup>1</sup>Usually defined as having at least \$4 Million in liquid investments

prestige (Glucksberg 2016).

The investments of the super-rich directly into housing (overall investment in real estate is likely to be much higher if financial investments through a vehicle like REIT's are taken into account) do not, however, happen in isolation. Rather they are connected to a wider system of the financialisation of housing, through which house prices continue, and many of the fortunes of the international super-rich are made and held. Such fortunes are part of the 'wall of capital' unleashed by financialisation flooding into real estate around the world. This deluge of capital has resulted in the uncanny convergence of housing markets globally, each of which is based on a different national housing system (Kemeny 1994; Kemeny and Lowe 1998), towards compound year-on-year price growth, rising levels of private debt and increased international investment (Aalbers 2015; Hay 2013). A process which Fernandez and Aalbers (Fernandez and Aalbers) argue is being driven by processes of financialisation of housing being used to 'absorb' the glut of global capital. To the extent that "mortgaged homeownership is there to keep financial markets going, rather than being facilitated by those markets" (Aalbers 2017).

Research into financialisation has been a growing field of research within sociology and is reflective of the growth of the process of financialisation within society, wherein the daily activities of individuals, households, corporations and states become enmeshed with financial markets; as Davis and Kim (2015) state "nearly every domain of our social life, from inequality and social mobility to local politics and urban planning to social movements and state power, has been touched by financialisation." At the heart of the growth of financialisation has been the shift in the way contemporary capitalism generates profits, having shifted from the post-war production boom (Brenner 2006), to one in which profits are, for the modern corporation, now primarily derived from financial activity — of which real estate is a core component (Krippner 2005).

The extension of financialisation extends beyond that of the corporation to changing patterns of ownership at an individual level, with Keister (2005) finding that financial assets have grown significantly as a proportion of household assets. This trend holds at all wealth levels but is particularly significant amongst those at the top of the wealth distribution. This trend is mirrored in the expansion of increased levels of household debt, which is then securitised by lending institutions (See: Lounsbury and Hirsch 2010), for the population at large, but has proportionally expanded far more for those at the bottom of the income distribution (Hyman 2011). Housing is shown to be one of the most important contributors to the changing nature of what assets and debts households hold and why. The combined effect of which Davis (2009) has been to fundamentally reshape the relation between financial markets and American society as a whole.

The growth of financialisation is furthermore directly linked to the growth in inequality through the growth of remuneration to those working in the financial sector itself, which has been one of the main drivers of income inequality in America, and one which has contributed to “asset bubbles in stock and real-estate markets made a major contribution to the wealth of the top one per cent” (Volscho and Kelly 2012). While much of the sociological work in this area has focused on America, which may be at the forefront of trends in financialisation, they are not unique to America, with research by Roberts and Kwon (2017) show has been advancing, albeit at different rates, across all developed ‘liberal market economies’.

The study of financialisation within sociology forms part of the field of research into the sociology of markets. The sociological study of markets seeks to “understand the origins, operations, and dynamics of markets as social structures” (Fligstein and Dauter 2007). Although, Fligstein (2002) seeks to make a distinction between economic sociology as a broader field of study — which in its modern form he traces

back to the canonical work of Polanyi (1957) — with the study of markets being the specific study of the sociality of market exchange under contemporary capitalism. This distinction strikes at the disciplinary separation between the study of markets by present-day sociology, and the overlapping interest between both contemporary and classic sociology and economics, in their research into the organisation of systems of exchange and production (Biggart and Beamish 2003). This is particularly evident through how many contemporary studies of finance within sociology have sought to understand their object of study through a framing of economic performativity first developed by Callon (1998) and the ANT methodology on which this work draws.

The ANT methodology on which a performative understanding of markets is based not only seeks to engage with the power of calculative agencies but with the materiality conditions of market formation. It is this approach to the study of markets that lead Beunza, Hardie, and MacKenzie (2006) to declare that “Prices are physical entities”; which is demonstrated through their research into arbitrage trading, in which they demonstrate that the speed and mobility of price information are crucial to profitability. A line of research that sociologists have further investigated following the rise of high frequency and algorithmic trading (Borch 2016; Lange, Lenglet, and Seyfert 2016; MacKenzie 2018)

MacKenzie (2006) applies this approach to the study of specific economic models. In tracing the effect of the Black-Scholes-Merton model on U.S. derivatives markets, MacKenzie demonstrates how the model, which initially sought to capture the dynamics of the market, end up shaping the practices of trading in its image. He describes( in a clever inversion of the famous quote of Milton Friedman) economic models not as engines of analysis but of engines of financial markets themselves. Through their influence on traders’ calculative agencies, they reshape the market as a whole in their image. A market artefact which researchers have characterised as a

form of 'distributed cognition' through which the abstract formulas of economic models come to reshape the workings of markets themselves (Vollmer, Mennicken, and Preda 2009). Indeed, the performativity of economic models has been demonstrated similarly with several other markets and models (MacKenzie and Spears 2014), with such an approach to the study of economic formula now being highly influential in the way in which the algorithmic knowledge is critically interrogated by sociologists (Seaver 2017, 2019).

Indeed, the materiality of market devices has been the focus of much of the research into economic performativity, particularly how this has shaped the development and function of markets. The research of Preda (2009) has focused on the early development of financial markets and has demonstrated the importance of the materiality of prices in the functioning of prices, through tracing how the trading decisions of individual investors — and consequently the market as a whole — were reshaped as a technological advance of the price ticker tape and the 'flow' of information it enabled. While in a contemporary context of digital flows of information research by Cetina and Bruegger (2002) has similarly demonstrated how liquidity in financial markets is manifested on the computer screens of traders. Indeed, as with Callon's application of performativity and its ANT roots, the study of financial markets has often contrasted the abstractions of finance which they study with the ethnographic means through which it is often approached (Ho 2009).

However, the extent to which the questions of performativity can address the markets, in their totality, has been questioned. For example, based on their research on radio spectrum auctions Nik-Khah and Mirowski 2007 suggest that performativity places too much emphasis on the power of economists and their models, often at the expense of the entrenched interests of powerful economic groupings. While concerns are raised by Dore of the limits of 'financialisation' as a



term which is described as “bit like “globalisation” a convenient word for a bundle of more or less discrete structural changes in the economies of the industrialised world.” (Dore 2008). Furthermore, as a result, it is a term which the utility of which diminishes the further and more expansively it is used.

Within the study of economic performativity, there has been a specific focus on financial markets, one which, given the power and influence of finance, has resulted in researchers advocating for social studies of finance to be a post-disciplinary field of study in its right (Samman, Coombs, and Cameron 2015). A move that stands in contrast to the approaches taken in both housing studies and the revival of elite studies. For example, Kemeny argues that as a denominator subject, housing researchers could import disciplinary theory to apply to the study of housing, but that its wider application was limited. Furthermore, Davis and Williams embrace of multi-disciplinarity in the study of elites is one in which synergises disciplines but do not seek to break free of the disciplines in which they originate. Therefore, the potential for post-disciplinary social studies of finance speaks to both the reach, power and embeddedness of financial markets and financialisation in contemporary society.

The connection between financialisation, global real estate, and the elite’s fortunes highlight the extent to which the study of housing is both an interconnected area of study in sociology and across the social sciences. Indeed, Housing Studies has been defined as a multi-disciplinary area of study, one which has brought together different areas of social scientific research, from anthropology to economics, through a shared focus on a specific object of study — housing — rather than a unified theoretical or methodological programme (Clapham 2009). The multi-disciplinarity of the study of housing reflects the centrality and importance of housing in all forms of social life and consequently has played at least some role in any field of social scientific enquiry.

However, the multi-disciplinarity of Housing Studies and the resulting profusion of competing for theoretical and methodological perspectives has been critiqued for the lack of shared research agenda this can produce. In particular, Kemeny (1992), a leading housing studies research, has commented that the ubiquity of housing in social science research can result in housing becoming the “lowest common denominator” rather than a unifying program of research. As a result of the tension which Kemeny identifies — of housing as both uniting areas of research while potentially reducing their disciplinary richness — he cautions that researchers should be careful to ensure that Housing Studies does not become “sterile and limited [in its] empirical focus, concentrating on analysing the housing market and housing policy” (pp 13). The thinking on which Kemeny argument is based continues to be a core justification for the multi-disciplinarity of contemporary housing studies, with the prospect of developing a discipline or generalisable theory of housing studies as neither desirable nor possible (Ruonavaara 2017).

Acknowledging the broad multi-disciplinarity of Housing Studies is particularly important in the context of the research presented in this Thesis. As the research in this Thesis draws on several areas of housing studies research, each has distinct disciplinary backgrounds — from the legal development of housing transactions in Chapter 4 to the use of econometric methods used in the calculation of house price indexes in Chapter 8. However, while a wide range of Housing Studies research is drawn on throughout this Thesis, it is not housing studies as a whole that has informed the development of the research presented here, but the specific contributions of sociological approaches to the study of housing. As a result, the methodological approach taken in this Thesis is in line with Kemeny (1992) original suggestions for multi-disciplinary Housing Studies in which research must iteratively use social theory from their disciplines in pursuit of Housing Studies research with the findings from which must always seek to contribute back to more general debates within their disciplines.

One example of the dividing line between the overlapping areas of interests between Housing Studies and distinct disciplinary contributions is the work of Piketty. As MacLennan and Miao summarize:

*“Piketty’s work has direct relevance for housing researchers. Wealth and income inequalities shape many spatial segregations and segmented socio-economic structures apparent within housing systems (van Ham et al., 2012). The evidence presented in CTFC gives even greater significance to housing outcomes as they appear to be a major reinforcer of wealth and income inequalities in some advanced economies. Remarkably, given that significant role and the emerging conclusions from research on housing wealth (Searle and Koppe, 2014; Ronald and Forrest)*

...

*[Furthermore,] housing policymakers show little sign of engaging with the insights of [Piketty’s work], not least the implication that core housing policies may be reinforcing rather than reducing inequalities within and between generations.”(MacLennan and Miao 2017, pp 127)*

The importance of Piketty’s work in this regard cannot be understated, with ‘*Capital in the 21st Century*’ (2014) capturing the zeitgeist of the moment to find a receptive audience both within academia and the wider political arena. One which, as Savage (2014) has noted, has driven forward the realignment of contemporary research into inequality.

Indeed, Savage has argued that wave of research on wealth and the interest generated by Piketty must be used to move:

*“beyond the recognition of the growth of income inequality driven by the accelerating incomes and wealth of the super-rich, to a more wide-ranging sociological programme of analysis which can fully explicate the wider social,*

*cultural and political issues posed by this development*”(Savage 2015)

To focus the gaze of sociologists engaging with this programme of research upwards, to those who have continued to prosper from the dynamics which Piketty has documented. Indeed, the need to ensure that this line of enquiry should not be limited solely to quantitative questions of calculating and recording this growing wealth gap, Fernandez and Aalbers have cautioned that similarly, the role of housing in this new focus on wealth should not be to “reduce housing researchers to housing economists and political economy to political-economy-within-economics” (Fernandez and Aalbers 2017).

However, while Piketty’s work may have acted as a ‘call-to-arms’ over the pressing necessity of research into wealth inequalities, the programme of research that he has engendered has now extended far beyond the premise of his original analysis (Savage 2014b). The extension of which is telling of the operation of disciplinary boundaries in Housing Research. For Davis and Williams (2017), his work is a clear example of this disciplinary split, as his work is both an exploration of elite power and financialisation, but one that does not directly engage with these subjects as part of its exploration of inequality as a sociologist would understand it. With critiques of Piketty’s work arguing that this distinction is to be found in the ‘conservative’ economic approach in which this work is founded (Soskice 2014); one which is most visibly manifest in the  $r > g$  formula, which is at the heart of his analysis. There is both a doctrinal expression of elite power and a set of implicit assumptions about the workings of finance itself. Indeed, the formula itself assumes a “division of intellectual labour” in which the non-economic social sciences the limited role of, “referenc[ing] economic analysis before adding descriptions of the consequences: in this case, describing the milieu and social characteristics of specific elite groups” (Davis and Williams 2017).

As a result, of these developments, there has been a revival of interest in the field

of 'elite studies' within sociology (Khan 2012b). The study of elites has long been recognised as a legitimate area of scholarship within sociology; however, until the early 2010s, there were few researchers actively working in this tradition. In part, as the study of elites had been addressed in the now-canonical work of Mills whose book 'The Power Elite' (1959) established a clear model of elites and how to study them, and consequently elites had become something of an 'overlooked' topic within British sociology (Savage and Williams 2008).

The question of how to define elites has not been one of particular concern to contemporary elites studies — with there appearing to be a broad agreement in the literature over the application of the term 'elite'. The consensus may be attributable to the broad and flexible nature of the term 'elites' that has enabled the application of a broad working definition to be adapted to various contexts and methodologies. Flexibility which is evident in the definition offered by Khan:

*To study elites, then, is to study the control over, value of, and distribution of resources. In simpler terms, this means studying power and inequality—from above. Though elites are not representative of society, the distribution of power in their favor often means that elites are the engines of inequality.*(Khan 2012b, pp 362)

A definition which the research presented in this Thesis adopts. One which is in line with contemporary or 'new elite studies' being in part defined by advances in the quantitative, methodological and choice of topic through which the 'control, value and distribution of resources' identified by Khan are now being explored by a broad range of researchers (Korsnes et al. 2017).

The recent renaissance of research into elites in the context of rising inequality has further been spurred on by new theoretical contributions on elites and how to study them. In particular, this work has expanded the scope of elite studies beyond the Weberian foundations, which underpinned the work of Mills (1959) to explore new

modes of researching elites. As Davis and Williams have argued:

*"The radical implication is that elite studies in our time does not need a new paradigm (a unitary set of concepts, methods and measures that defines one field of the visible), because elites are now well suited to analysis by diverse groups of social scientists who are no longer unified by anything corresponding to the Weberian consensus or assumptions which underpinned earlier work."*(Davis and Williams 2017)

As a result, the study of elites is not anchored in a particular theoretical tradition or anchored to a specific methodological approach. Indeed, to this end, the study of elites, like housing, can be seen as a 'denominator' that brings together a multi-disciplinary array of research to focus on a common research program.

There are, therefore, commonalities to the disciplinary bases of contemporary elite studies and housing studies. Both bring together a diverse set of methodologies and researchers through an interest in a common object of study. There is, however, a distinct difference in the way in which these two areas of research can approach the object of study, not through the methods chosen — with their being many overlaps in this regard too, from ethnographic to quantitative methods — but through the access which is afforded to researchers. With access to housing as a subject of research being ubiquitous both for quantitative and qualitative approaches, access and data collection questions remain one of the foremost concerns to elite studies. Indeed, it is out of the contrasting availability of data is one of the means through which the study of housing and the study of elites come together; with the ownership of a real estate by elites being a vector through which contemporary elite studies has sought to shine light upon the practices and wealth of elites.

## Working through Infrastructure

The research presented in this Thesis, therefore, seeks to draw on these commonalities, and in doing so, conduct research at the intersection of housing and elites. The research undertaken in this Thesis does not seek to prioritise either housing or elites as the primary object of study. Through an orthogonal shift through which these topics are approached, it seeks to understand how the housing market in England comes to be known and of the position of elites within the production of this knowledge.

To do so, this approach the intersection of elites and housing through the production of knowledge of the housing market, from which the housing market comes to be understood but within which elites' housing practices—as this research will show—has been inaccessible. To do so requires the research to step back from the immediate questions asked by studies of housing and elites to consider the foundations upon which knowledge of housing and within it elites rest. To do so, this research explores the system through which these statistics are recorded and, more importantly, its primary purpose of enabling the ownership, evidencing and transfer which underpins the property market — the infrastructure of land registration.

The framing of infrastructure, as understood in the research presented in this Thesis, is neatly summed up by Johnson as:

*“Infrastructure provides the invisible scaffolding for discovery, dissemination, and access to information. Since information is concomitant with knowledge, criticality, and awareness, the form of infrastructure has real consequences for the forms of communication, knowledge and public life”* (Johnson 2012)

To explore the infrastructure on which the housing market and the collection and production of housing market statistics rests is, therefore, to address both the oft

invisible role of land registration and to question the position of elites within this structure. The LR, which facilitates the buying, selling and owning, of all real estate in England and Wales, is one such system. Like many other information infrastructures, one has faded into the background, becoming unremarked upon feature of contemporary society.

The study of infrastructures has been a key site of research within STS over the past two decades, one who has focused the researcher's attention on the centrality of large-scale socio-technical systems in the functioning of contemporary knowledge production practices. Of particular importance to the theoretical development of information infrastructures, is the work of Geoffrey Bowker and Leigh Star, whose engagement with how such systems function — and on how they breakdown — has been crucial in establishing information infrastructures as a field of research and enabling researchers to crack open the *Blackbox* of such large-scale enterprises. The research presented in this Thesis draws heavily on the work of both Bowker and Star and the field of cyber-infrastructure studies. Still, it eschews this 'cyber' moniker in favour of 'information infrastructure'. While their work has furthermore set the paradigm from which the field of 'cyber-infrastructure studies' has since developed for many researchers in this area, these two terms are used interchangeably. The term 'cyber' can be applied to the 'long now' which has followed the revolution in statistical and archival methods which began over 200 years ago (See: Bowker 2005; Bowker, Baker, et al. 2010), far predating the development of the modern computer and reflecting the theorisation of cybernetic information. However, the use of 'information infrastructure' has been chosen for use in this Thesis. It provides greater syntactic clarity given the time spans under discussion in this Thesis and the LR's work. Rather, for the research presented in this Thesis, the term 'information' better captures the metamorphosis which has taken place in the relations between how property comes to ownership comes into being, is demonstrated, and known.



One of the key features of Bowker and Stars' approach to infrastructure, which is developed throughout all their work, is to conceptualise and treat infrastructure not as a 'thing' in and of itself but to see it as a set of ongoing relations. And, it is this approach which this research takes towards the LR and the wider system of land registration. Neither the LR itself nor the wider system of land law on which it draws is the 'infrastructure' which this research investigates. Still, rather it is the relations between the legal, technical and social assemblages from which the infrastructure is enacted which this research seeks to unpick.

When approaching infrastructure in this manner, it is just as appropriate to use the term as a verb as it is a noun, thus specifying a relation of action in the present (Bietz, Baumer, and Lee 2010). The point which Star and Ruhleder (1996) make when they ask the incisive question, not 'what is an infrastructure', but 'when is an infrastructure?'.

The research presented in this Thesis takes up this question in the context of the development of land registration. The question Star and Ruhleder ask is particularly apt in the case of this research. While it will be argued that the LR may function as part of an information infrastructure today, the question of when it came to function in this manner is an open one, which this Thesis seeks to explore. In particular, exploring the relationship between the ownership of land and property, the market facilitating trade and the ability of the state to record and 'know' this information requires opening up the *Blackbox* of infrastructure.

The merits of adopting such an approach are laid out by Bietz, Baumer, and Lee, who argues that:

*"a definition of infrastructure forestalls discussions of 'what is really infrastructure and instead directs the researcher to ask whether there is analytic value in examining a phenomenon as infrastructure: what is supporting the work of another and who is sustaining those relationships?"* (Bietz, Baumer,

and Lee 2010)

Star and Bowker (2006) provide a clear explanation of how this relational approach works through the eyes of the 'end user' and those 'embedded' within infrastructure through the example of railway infrastructure. When one travels on a train, the railway tracks along which your journey runs are simply a piece of infrastructure, one which exists and functions without the need for the user to think about how the train will reach its destination nor understand anything about the train all the railway beyond a timetable. To see the railway track as a piece of infrastructure, a set of ongoing relations, however, is to open up its *Blackbox* by seeing what 'lies beneath' the physical infrastructure. In such a case, the analogy sees the same piece of track through the eyes of a railway engineer at work, where the same material infrastructure is transformed into a tangled mixture of organisational responsibilities, technological standards and tacit professional knowledge. The same is true of seeing the process of land registration as an information infrastructure. As the LR may not have the same physical structure that the researcher must peer beneath, it nonetheless functions in a manner that is intended to be opaque and seamless to the end-user. It functions seamlessly as a background process supporting and enabling the ownership of, and trade in, land and property.

For example, to someone buying or selling a house, the registration of that transaction is a seamless part of the experience, one which forms one part of a long process of securing the funds, surveying the property, agreeing to a price and the many other such practicalities which need to be organised. Yet, underpinning this is a larger system that enables how land and property is owned, bought and sold, of which the LR functions as the central node of a larger system. For those working for the LR or in the broader set of sectors involved in conveyancing, this same infrastructure is an intertwined mix of legal procedures, electronic forms and databases, financial transaction and aggregate statistical knowledge.

Part of such an infrastructure is how something is known to owned and how the buyer will then prove their ownership of the same property in the future. Similarly, how a buyer knows that a price is similar to that paid for comparable properties is reliant on the wider infrastructure, which facilitates the trade and allows the market to be 'known'.

To return to the analogy of railway, that trains should run to a universal timetable is to the present-day traveller a matter of obvious common sense. Yet, the development of a centralised time, and with it a timetable, and was crucial and complex development of American railway infrastructure, one which was implemented by the train companies 35 years in advance of the American government (See: Cronon 1992; Landes 2000). The same of which is true of the market in real estate, that transactions are recorded and made publicly knowable through local and national statistics is now a fundamental feature of how the property market functions and how those who work within it, and those who participate as non-professional clients, can calculate 'fair' transactions. Yet, as Fitz-Gibbon (2018) has shown, the collection of private information to inform agents' calculative practices was a key development of what can be understood as 'national market' in land and property. Furthermore, proof to claims of ownership and what it means to 'own' a piece of land has developed out of centuries of highly complex legal developments. Still, it is now hidden beneath the infrastructure that the LR facilitates. To see the LR as the facilitator of an information infrastructure through which knowledge about property ownership is produced is to open up a *Blackbox* in which these complexities have been confined and, for those that rely on its services, hidden. To examine the system through opening up this *Blackbox* is to investigate the tangled mixture of legal standards, technical operations, political compromises and social expectations upon which the ownership of land and property has come to function and through which it can be understood.

While Star and Ruhleder eschew a traditional definition of what should constitute an infrastructure, they do provide a sketch of eight dimensions along which infrastructures emerge. For the exposition, these may be grouped into three clusters of characteristics; the enduring nature of infrastructure, the means through which an infrastructure endures, and instances of breakdown.

The first of which relates to the spectrum in which the infrastructure can be said to operate. These are; the 'embeddedness', 'transparency' and 'reach or scope' of the infrastructure. It is through these terms that Star and Ruhleder explore the scale of infrastructures, both spatially and temporally. The 'transparency' signalling the ease of use of infrastructure does not need constantly reassembled to support its use. Similarly, the reach and scope expand on this, signalling that an infrastructure stretches beyond a single event or site to encompass a spatial and temporal expanse. As, the 'embeddedness' of an infrastructure reflects the wider relations of the within which it is placed, with this signalling the extent to which an infrastructure becomes invisible as it is 'sunk' inside other "structures, social arrangements and technologies" (Star and Ruhleder 1996)

The second cluster relates to how the infrastructure came to be and from which it endures, through 'links with conventions of practice', from being 'built on an installed base', and operating through the 'embodiment of standards' which are 'learned as part of membership'. These faucets are all relational to the infrastructure. Each is the means through which the infrastructure becomes, but each necessarily stretches beyond the bounds of the infrastructure itself. The links of 'convention' rest on societal assumptions which have become baked into the infrastructure itself, for example, that land law was the domain of the Court of Chancery, which in turn shaped the development of land law in England. Similarly, land registration was built on the 'installed base' of land law as it existed before the creation of the infrastructure of registration. The development of land registration as an

infrastructure was built on top of the legal system through which land was already owned, evidenced and transferred. To this end, the creation of the system of land registration came to 'embody the standards for the ownership of land, creating a standardised system through which ownership and trade in land were organised.

The final dimension along which infrastructure can, according to Star and Ruhleder, be understood is orthogonal to the previous clusters but is crucial for opening up the *Blackbox* through which infrastructure is usually understood; is its 'visibility upon its breakdown'. Ribes and Lee provides a clear explanation breakdown and its use to researchers as:

*"Breakdowns themselves are a kind of natural infrastructural inversion. As Star and Ruhleder note, "The normally invisible quality of working infrastructure becomes visible when it breaks" ... It is at moments of failure that entire swaths of infrastructural activity (even those that didn't fail, such as properly functioning backups or routinised repair activities) are revealed not only to the analyst but to the everyday user of infrastructure. Focusing on break down is a variation of what is called 'controversy studies' in STS." (Ribes and Lee 2010)*

The role of breakdown in infrastructure has therefore played a crucial role in the studies of infrastructural scholars and in the development of the means through which research into infrastructure is conducted. To this end, 'infrastructural inversion' is a key methodological process through which research into infrastructures has been conducted (Bowker and Carlson 1994; Bowker and Star 1999). By which investigations of infrastructure start not at the 'top', trying to understand infrastructure in its entirety, but at the 'bottom' of the parts which are routine, standard, and as a result often ignored or seemingly invisible (Edwards 2010). From which investigations of the infrastructure work upwards and outwards to develop an understanding of the assemblage of relations from which an

infrastructure is composed and through which it is maintained. In this regard, a moment or site of breakdown provides researchers with an entry point through which to begin this process and of a revelation of what exactly has come to be taken as routine, standard and invisible — with the breakdown suddenly casting these features into relief.

The point of breakdown and the natural ‘infrastructural inversion’ which emerges, as a result, was the starting point for the research presented in this Thesis. As discussed in the Methodology Chapter, the investigation into the ‘missing’ elite homes in the LR data provides a point at which the infrastructure of registration is no longer invisibly working to provide the data needed but instead provokes questions of what was missing and why. A process from which the three case studies developed in this Thesis began and from which the infrastructure of land registration was investigated.

The point of departure for the research presented in this Thesis is thus firmly grounded in the sociological research into housing, elites and inequality. The research into housing and elites, as has been discussed, is crucial in understanding wider societal trends in the structure and causes of inequality. However, the study of housing and elites is not the sole purview of sociological research but rather is the object of research throughout the social sciences. To this end, the study of elites and housing can each be seen as ‘denominators’ to arenas of multi-disciplinary research. The findings in each can apply to a wide variety of scholarship.

The focus on elites and housing as the specific objects of study is brought together in the research presented in this Thesis; this is done through a dual focus on both housing and elites by examining the infrastructure of land registration. This approach develops an original approach to both; by treating housing as more than a vector for the study of elites and questioning how the housing market becomes known. In doing so, this research, therefore, stands back from both houses and elites

as the immediate object of study to the infrastructure of land registration on which the housing market is run and through which elite habitation and wealth flow.

In standing back from elites and housing as the immediate object of study, this research can contribute an original approach to the study of both topics; one which builds up an understanding of how housing comes to be known and the position — and opacity — of elites within this process of knowledge production. The findings from which speak to both housing and elite studies and the larger question of inequality through findings that uncover the scale of elite housing, which was previously ‘missing’, as will become clear in the later Chapters of this Thesis.

# Chapter 3 — Methodology

This Chapter outlines the methodologies used in the research presented in this Thesis. I will discuss case selection and ethical issues involved in the research and chart the research development, which is presented in the following Chapters. Therefore, the structure of this Chapter starts by discussing the motivations for the research conducted, how the research questions investigated were selected, and how they developed as the research was conducted. The second section of this Chapter builds on this to discuss the data collection process, the selection of the case studies presented in this Thesis and the research methodologies used. The final section of this Chapter covers the process of data analysis itself, detailing specifics as to how the practicalities of the analysis were approached and the ethical issues this research navigated as the analysis progressed.

## Research Motivations

The research presented in this Thesis revolves around the process of land registration and the digital data released by the Land Registry. The Land Registry may not appear immediately self-evident area for sociological scholarship. Indeed, as research presented in this Thesis lays out, the process of land registration itself is often treated as a background process, one which through its smooth functioning becomes an almost invisible process that facilitates and underpins the property market in the UK. Furthermore, these processes do not at first appear to have an



obvious connection to the study of elites.

I trace the genesis of this research back to two events while studying for my Masters' degree at the University of Cambridge. The first of these was helping a friend, an architect, with research he was conducting as part of his Masters' dissertation on sub-terranean property extensions in London. Together, with another friend, a computational biologist (who was and remained a much better programmer than me), we wrote code to download all basement planning applications in the Royal Borough of Kensington and Chelsea. These results, in the end, were only used as the visual backdrop at their resulting graduate show. However, assisting a friend on this small project opened my eyes to the possibilities of what was possible for digital social science (which I had previously only engaged with through the findings of others) and of the possibilities of 'untapped' data sources for new research.

During this time, I also attended a CRASSH seminar at which Roger Burrows presented preliminary findings from the Alpha Territories project. Named, after the term used by geo-demographers, to denote the most exclusive postcodes in the UK, the project brought sociological scrutiny to bear on the previously under-studied 'super-rich' and the spatialisation of this elite class (Webber and Burrows 2016). As part of the wider revival of elite studies, the presentation immediately caught my interest and suggested directions for research that I could hope to pursue after my master's degree. The use of digital methods to study the super-rich is the starting point from which I began developing a doctoral research project. It was years into my PhD that I saw that these sources of inspiration, from which I developed my research questions, had been transformed into a fully formed research project, in which the troglodytism of the luxury mega-basement was comprehensively mapped and analysed by Baldwin, Holroyd, and Burrows (2019).

Given this starting point, one of the first issues facing prospective research was to figure out how to pursue work at the intersection of elites and digital data while

differentiating my work from that of the Alpha-Territories project. To create this difference, I picked a specific focus on the housing of the super-rich with a particular focus on the market for and value of the properties of the ‘alpha territories’. In particular, the first iteration of this research sought to ask ‘*how can these properties be so expensive?*’ This question at first had a very definite sense of what was being studied; the ‘super-prime’ houses of Central London — usually defined as those costing over £10 million — and how they came to be. It was, furthermore, a question that intentionally sought to differentiate itself by inverting ‘Parsons Pact’ that ‘economists study value, sociologists study values’ (Stark 2011). The research approached price as the primary object of study and from which the market and its actors could be traced outwards. As it was the price, rather than any physical or spatial characteristic, which was the defining feature of what was being studied, this should, therefore, be placed at the heart of the research question.

By focussing on price and from there tracing the social outwards was inspired by an Actor-Network-Theory methodology (Latour 2005). In particular, this framing of the research question placed the relationship between the house and its price at the centre of the research and sought to find a place for the agencies of ‘super-prime’ houses as actors in their own right. This initial line of research sought to draw on the work of Callon on bringing ANT methodologies to bear on economic sociology (Cochoy, Giraudeau, and McFall 2010) through a focus on calculative agencies (Callon 1998). The focus on price sought to apply and extend the work of authors such as Preda (2009) on the materiality of prices, and Beunza, Hardie, and MacKenzie’s (2006) framing of “prices are physical entities”. To an area outside of the focus on financialisation with which the majority of these studies have been focused (See: Boldyrev and Svetlova 2016) to the unique dynamics (but not unconnected world) of the ‘super-prime’ housing market.

It was, however, a framing that changed over the course of the research conducted;

moving away from the price as constructed by the market as the primary focus of the research to instead focus on how the information infrastructure of land registration affected how the price of a property became known as a data point. This change in the direction of the research arose out of a mixture of the difficulty of establishing contacts in the field, on which the original research design was reliant, and the new questions which arose out of work with digital data, which I had also been investigating since the start of my PhD.

The difficulty of establishing contacts who worked in buying and selling of super-prime properties was to be expected — although, like many junior researchers, I was perhaps still more optimistic than realistic. What definitively shifted the research away from an interview-based approach was the publication of the Panama Papers in the spring of 2016. Their publication created two specific reasons and opportunities for this shift. Firstly, the contacts which I had been carefully forming during the preceding months suddenly went quiet, with the interviews which had planned being cancelled and the rare willingness to entertain a graduate research student having appeared to evaporate entirely. Secondly, the headlines that flowed from the Panama Papers release confirmed the societal importance of an alternate angle to my research, which I had also been investigating.

While waiting for contacts to respond and interview dates to be confirmed, I had begun to work with the Land Registry Price Paid Dataset to create descriptive maps and graphs to frame my future research findings. In doing so, however, I realised that there was a disconnect between the properties I could see in the estate agents windows across Central London and the data published by the Land Registry. There appeared to be very few high-end transactions that aligned with the prices which were being advertised. Nor did the few properties which did appear in the Land Registry data match with those on sale in the windows of London's high-end estate

agents. An impression that was confirmed after scraping data from the exclusive estate agents Frank Knight and trying to match their listings to LR data.

From the start of my fieldwork, as the case of Witanhurst suggests, I had an awareness that some properties at the very top of the market were being bought and sold through overseas shell companies. However, the publication of the Panama Papers and my growing awareness of the gaps within the data published by the Land Registry made it clear to me the scale of property transactions for luxury properties that were being conducted through opaque legal structures. The gap between what could be seen through the Land Registry data and what was apparent in the qualitative impression I had gained in the course of my research became the main focus of my research.

## **Data Gathering and Case Selection**

In making the data collected and published by the Land Registry the focal point of the research, the aim but not the research object shifted. Instead of seeking to study ‘prices’ in the abstract as a mode of calculation determined by an amorphous market — a framing implied in the inversion of ‘Parsons Pact’ — I sought to study the literal prices as recorded by the Land Registry. This framing dropped the explicit focus on ‘super-prime’ houses, which was limited in the context of investigating the data of the Land Registry, to one which implicit. The same ‘super-prime’ properties make up a significant proportion of properties that appeared to be missing from the data.

Therefore, the initial starting point for the data used in this Thesis was the Price Paid Data set released by the Land Registry. The dataset was first released to researchers in 2012 under an Open Government License in 2012 and is updated monthly to include the latest available data (Land Registry 2017a). Running from 1995 until the present, the dataset contains information on over 20 million housing market transactions in England and Wales. The use of this dataset formed the basis of the official national

House Price Index published by the ONS, and the analysis of this data forms the core of the research presented in Chapter 7.

The switch in the research focus necessitated a re-assessment of the case selection of the ongoing research. In basing the research around Land Registry data itself, and the process of land registration on which it rested, prompting the questions of What could be done with the data published by the Land Registry to investigate the housing of elites? How did the data and statistics published by the Land Registry come to be? And how did the system of land registration on which this system runs first develop? Each of these questions formed the basis of one of the case studies presented in this Thesis.

The first question sought to ask what could be done with the data published by the Land Registry was the first to be undertaken in the course of the research presented in this Thesis, taking place alongside the early qualitative fieldwork. This research makes up the bulk of Chapter 7, presenting an exploration of the housing market statistics compiled from the Price Paid Dataset into the House Price Index by the Office for National Statistics, and what can be learnt about trends in the housing market when this underlying data is approached from a different angle.

The analysis of the 'missing' houses owned through overseas shell companies presented in Chapter 8 followed from this early analysis of the Land Registry Price Paid Data, building on the insights and knowledge developed from working with this data and seeking to extend this research into the overseas company data as it became available. The development of the research questions throughout the work presented in this Thesis was, as had been discussed, a reaction to the emergence of new questions out of the data through research. It was also a serendipitous reaction to what it was possible to do with the data. As, while following the revelations of the Panama Papers, qualitative avenues of research appeared to be closed off, new data-driven research paths were opening up.

When this research began, the only freely accessible housing data was that of the Price Paid Dataset, with other property transaction data being held by the Land Registry but being a paid-for product<sup>1</sup> — in-line with their role as a government trading fund. Over the course of 2017, new data sources emerged, which allowed the research of Chapter 8 to precede. Firstly, data on the transactions conducted by overseas companies was leaked to Private Eye and eventually made available to the public. Secondly, that following the Private Eye leaks and in conjunction with the changing policies of the Land Registry itself, the data for transactions by both domestic and overseas companies was officially published for free under an Open Government License by the Land Registry (Land Registry 2017a). Thirdly, national Energy Performance Certifications data was released by the Department for Communities and Local Government (Department for Communities and Local Government 2017a), enabling the research presented in Chapter 8 to add additional detail to the transaction data published by the Land Registry.

Having developed much of the analysis presented in Chapters 7 and 8, the question remained as to how the data came to take this form in the first place. This question allowed me to extend the investigative approach developed in Chapter 8 to the data source itself, not accepting data that had been used as a given but to investigate the means through which it came to be and what shaped this process. Pursuing this angle necessitated a different methodological approach than the computational methods used for the digital data analysis and the adoption of qualitative archival methods to answer these questions.

Initially, the second case study was extended by deepening an interrogation of the HPI presented in Chapter 7. This case study as a whole in Chapters 6 and 7 examines the development of the national housing market statistics in the UK. The first part of this question involved collecting data from all available methodological

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<sup>1</sup>At a reported cost of £50,000 a year for comprehensive access, far beyond the reach of this research (Boswarva 2012).

documentation available on the development of HPI, including policy and technical documents in the UK and EU, before widening the scope to include the econometric literature from which these official documents draw. This research draws on the findings of Chapter 9 to bring to bear a critical sociological reading of what is missing from the UK HPI and how this is linked to the assumptions made in the construction of official housing market statistics. For the second part of this question, I collected data on the history of housing market statistics from a range of archival, legal and institutional sources. Firstly, this included the changing statutory legislation on land registration over the 20th century and relating this to the impact it had on the development of what this research labels the 'statistical superstructure', through archival methodological documents on the development of the 'Department of Energy' index and the 'Five Percent Sample',<sup>2</sup> the development and methodological refinement of competing housing market indexes published by financial institutions, the data produced from these indexes, archival Land Registry documents and policy documents charting the development of the modern House Price index and the range of institutions involved in its development.

While the second part of this research sought to interrogate how the system of land registration, on which all the previous research built, came to be and how its development can inform our understanding of the system today. The research presented in Chapter 4 and 5, therefore presented chronologically but was conducted and developed in light of the findings which follow it — with the findings from this case study being crucial to how land registration operates today and how it is understood as an information infrastructure. Given the time span covered in these Chapters, from the development of common law doctrines in the middle ages to the 1925 Land Registration Act, the research presented in them draws on a diverse range of sources. These include; archival land registry

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<sup>2</sup>As Chapter 7 discusses from its beginning in 1956 to until the creation of the official single House Price Index in 2016 the responsibility for the production of the housing index moved between government departments and, as a result, was known under several different names.

documents held at the National Archives, legislation and parliamentary reports and parliamentary debates from the start of the 19th century onwards, historical publications on land registration from the 19th century, and a wide range of secondary sources from economic history, legal studies, and historical sociology. Archival research for both case studies included LR documents held at the National Archive. Therefore, I inspected the description of all 1,414 items held in the LAR1 series, requesting and reading approximately a fifth of these documents and recording almost 2000 images of archival material.

Therefore, the research presented in Chapters 4 and 5 seeks to provide a new understanding of the development of land registration in England through a sociological lens which, working from the perspective of today, seeks to understand the development of land registration as an information infrastructure. Through the use of this theoretical framing and new archival sources, I expanded the scope of these secondary historical sources. As the few secondary sources which are concerned with the development of land registration, while detailed scholarly works to which this research is indebted, are concerned with particular historical details of the development of land registration rather than the system as a whole or its relevance to the contemporary system of land registration. Much of this work was concerned primarily with the legal history; such as Anderson and Offer (1992) who offer competing accounts the class interest of lawyers in the reform of land law, Pottage (1994; 1995) who is interested in the material effects of the law and, Cooke (2003) who contextualises the history of land law in so far as it relates to the 2002 Land Registration Act. By contrast, the approach taken in the research presented in these Chapters sees land law as only one component of the social, technical, and technological assemblages required for land registration to develop into the infrastructure of today. In further contrast to the assumptions of historical, sociological approaches to the development of the state, I do not seek to draw causality out of these developments but to relate each of these elements to the



ongoing work of infrastructure.

## **Data Analysis and Ethics**

Given the range of data sources used across the research presented in this Thesis, several distinct methods were used to analyse the data collected. This final section deals with how the data was analysed, both the digital and qualitative data, and the ethical issues encountered as the research was undertaken.

The analysis of the digital data presents a number of issues as a result of the size of the datasets being used. The primary means of cleaning, processing and analysing the digital data was Python programming language with the ‘SciPy’ stack of NumPy, pandas and matplotlib being the primary packages used. Python was chosen for its flexibility in working with the varied nature of the digital data available. In particular, the ability to easily manipulate strings and undertake natural language processing of much of aggregate non-numerical data with the NLTK package. In particular, the processing of the land registry, energy certificate, and private eye data in Chapter 8 needed large amounts of computational work before analysing the findings. This stage of the process required over 3000 lines of code for the final merger of all the data — with many revisions and refinements being needed as the research progressed. For some of the merging, the R programming language was used with the data.table packages, which was chosen for their speed and memory efficiency when working with very large datasets. The size of computer memory needed for these operations necessitated much processing of the datasets, and computing the results was done using the LSE high-powered computing environment Fabian. The data cleaning and merging process steps require 100s of GB of memory and often take days’ worth of computing time to run. Data exploration and the plotting of results used the Jupyter notebooks for facilitating an interactive and iterative approach to working with the data needed

for an investigative approach. Spatial analysis where mapping was needed was carried out in QGIS, using boundary files provided by the Ordnance Survey and address lookup tables provided by the Office of National Statistics.

The means of analysis for the qualitative portion of the research of the data naturally differed significantly from that of the digital data. Indeed, as the questions this research sought to pursue followed the investigation of the digital data detailed above, so too did the methodologies on which it drew. The change in the methodologies used, however, was a gradual evolution with an explicitly Latourian ANT framing (Latour 2005) of the economic sociology of scholars like Callon (1998) shifting to one which was primarily concerned with understanding the infrastructure behind the information with which the data analysis worked. In particular, I drew on the work of Star and Bowker and their body of work on information infrastructure studies. A methodological approach which has much in common with ANT — with both being situated in STS literature, and indeed, stemming from the same intellectual traditions (See: Bietz, Baumer, and Lee 2010; Bijker, Hughes, and Pinch 1987) — but one which differs in purpose, as Timmermans states:

*“Unlike Latour Star focused on non-human agency in order to highlight how social life is re-calibrated and re-stratified. Her goal was not to democratise the human-non-human divide but to analyse the powers of the non-human in shaping a human world”*(Bowker, Timmermans, et al. 2016)

It is this approach which the research has sought to take in its investigation of the process of land registration and its relation to elites. The focus on elites is, in this regard, an inversion of the methodologies of (Star and Bowker 2006), which carefully and skilfully traced out how these agencies act to exclude and silence the marginalised through the systems of classification, organisation, standardisation and quantification within infrastructures. This research, instead of looking at how

the formation of the infrastructure of land registration and the silences and opacities embedded within this system, through the same classification, organisation, standardisation and quantification, benefit elites.

To do so, the approach taken in working with the qualitative data was to trace this out through the conceptual apparatus of ‘infrastructural inversion’ (Bowker and Carlson 1994; Bowker and Star 1999). A process Edwards describes as:

*“To understand infrastructure, you have to invert it. You turn it upside down and look at the “bottom” — the parts you don’t normally think about precisely because they have become standard, routine, transparent, invisible”* (Edwards 2010, pp 20)

Therefore, the qualitative research was undertaken by seeking to understand the land registration from the ground up. To do this includes understanding what *exactly* is meant by the ownership and transfer of property at a detailed legal level — questions which are addressed in the investigation into the innovation of *Blackboxing* of a title system in Chapter 4. And, from here, work upwards to the aggregation of transactions as individual data points worked within the final Chapter. Through the use of archival documents from the Land Registry, this research has explored through tracing how title documents were stored, archived and cross-referenced — and how this process has shifted and developed over the past 150 years. Some of these processes are further addressed either in the statutory duties of the Land Registry laid down in parliamentary acts or reports and documents detailing the methodologies used in the aggregation of information. This approach has sought through the wide variety of sources used to understand the infrastructure of registration as an assemblage of heterogeneous parts that have accumulated over a long historical span.

In work with the data presented in this Thesis, I have been mindful of the ethical implications of using these data sources for research purposes. This was a particular

concern in the work presented in Chapter 8, which identifies those houses which are 'missing' from the overseas company ownership data, which works with individual-level housing transactions and energy certifications.

In the case of both the data published by the Land Registry and EPC data Published by the Department for Local Government and Communities, this data is published under an Open Government License- I have abided with these terms. In working with this data, I have also followed the requirements of the Data Protection Act 2018 and GDPR. The data used, therefore, while personal, is also widely available public data. Furthermore, the EPC data allows individuals to opt-out of their data being published as part of the online dataset. In using this data, the research presented in this Thesis has at no point sought to identify individual details within the data, but only to identify an aggregate group and trend that was previously missing.

The only dataset used which does not fit within these conditions is the Overseas Company data leaked to Private Eye. The need for this data has largely been made redundant due to the same data being published by the Land Registry. It differs only in one detail, the addition of a column labelled as 'Price (text infill)', which is not included in the officially published data. As Chapter 8 details, much of the price information for overseas transactions is missing; however, price information is often contained in the additional column in the Private Eye data. It appears that this is not included in the official release, as this data is poorly structured and of variable quality, with the research in Chapter 8 making a considerable effort to correct it. Therefore, the use of the leaked data is not to provide additional identifying details not held by the Land Registry but to correct information which they do not publish due to quality and not privacy concerns. The use of other leaked data, such as those in the Panama Papers, is not used in this research due to ethical concerns and the nature of the data, far more identifying and focused on individuals than the housing data is used in Chapter 8.

In working with this data and in identifying what is 'missing' I have sought to focus on elites, with the research subject being those whose privilege and wealth enables them to own property in a manner which often used for the purposes of tax evasion and channelling the proceeds of corruption (UK 2017). To do so has been a clear inversion of an infrastructural approach that seeks to draw attention to the ways in which groups are marginalised to those who actively benefit. In doing so, the ethical concerns associated with working with such groups have been side-stepped, with the research presented in this Thesis seeking to investigate inequality by 'punching up' to those whose power, privilege and wealth have previously shielded them from scrutiny.

*A brief note on chronology; these two Chapters discuss the history of land registration, explored through the lens of current land registration. Therefore, these Chapters are presented first, allowing the Thesis to be ordered chronologically. However, the motivation for exploring this history was inspired by the results in the later Chapters. Chapter 7 and Chapter 8 revealed inconsistencies in the relationship between the information infrastructure of land registration and our knowledge of the housing market; these earlier Chapters were an attempt to address and understand how the foundations of land registration have left legacies that are embedded in the contemporary structure of land registration. This is to say, that these Chapters, although preceding Chapter 7 and 8, would not have been possible without the insight gained from this contemporary analysis*

# Chapter 4 — The Foundation of an Infrastructure: Unpacking the *Blackbox* of Registration

*The difficulties attendant on the transfer of real property have engaged the attention of law reformers more than any other in our jurisprudence [...] we have hitherto lopped off the branches than struck the root of the evils against which reforms are directed [...] yet] the mode of transferring real property in England is still universally condemned for the difficulties by which it is fettered.*

(Wilson 1844, pp 1-2)

## Introduction

This Chapter investigates the foundational feature of the infrastructure of land registration, the transaction of real property and its registration. In doing so, it seeks to examine what *exactly* is a transaction. Through developing research into the socio-material and legal forms that transactions have taken and how the development of the form of real property transactions has shaped today's infrastructure.

In doing so, the research presented in this Chapter seeks to invert the infrastructure

of land registration by starting with the foundational ‘atom’ of what goes into, or lies underneath, a single transaction. The research presented in this Chapter on the base unit of the transaction is drawn on in the subsequent Chapters. The research presented in this Chapter thus seeks to explore the three foundational elements required of a system of land registration; how is land owned, how is ownership evidenced, and how is ownership transferred. Through asking:

“What were the socio-material and legal conditions for the development of land registration? What can be learned about the current system of land registration through understanding these conditions?”

The elements of owning, evidencing and transferring property act as strands of this question and interwoven throughout the research presented in this Chapter; with each element addressing the development of the socio-material and legal means through which the infrastructure of land registration is composed. In working with these elements, the research presented in this Chapter does not seek to provide comprehensive answers to the questions they pose but to use the space which these questions open up to explore the coalescence into the foundational element of land registration into the information infrastructure of today.

Therefore, the research presented in this Chapter proceeds in broadly chronological order, with the focus switching between the different elements of the main research question as it traces their interrelation over time. This research seeking to both understand how the foundational transactional element of the information infrastructure of land registration came to be and to open up the *Blackbox* of what is contained within a transaction.

The concept of a *Blackbox* has been established sociologically since the work of Latour (Latour 1988). This concept is defined succinctly by Harman as:

*[The] black box is any actant so firmly established that we can take its interior*



*for granted. The internal properties of a black box do not count as long as we are concerned only with its input and output. (Harman 2009, pp 33) An actant is always born from crisis and controversy; only when it succeeds in establishing a foothold in the world do we forget the tribulations of its birth and eventually treat it as a seamless black box. (Harman 2009, Pp 36)*

The research presented in this Chapter uses this concept as a way to understand the interplay and controversies surrounding the merger of land law and administrative organisation required by the development of land registration and its subsequent invisibility following the coalescence of the infrastructure of registration.

In seeking to understand the development of the transaction as the base unit of the information infrastructure of land registration, the research presented in this Chapter is thus focused specifically on transactions related to the implementation of a title system of registration. As such, this research touches only on the practices of private conveyancing only in so far as they relate to the creation of a title system. Furthermore, the wider political and economic context in which the creation of the title system and the broader reform of land law took place over the long 19th century being addressed in Chapter 5.

Running throughout this Chapter is a concern with the professional knowledge required for the functioning of an infrastructure (Star and Bowker 2006; Star and Ruhleder 1996). In the case of land registration, the professional knowledge required was primarily legal, with the process of conveyancing before developing the infrastructure of registration being carried out by lawyers who specialised in the complexity of land law. The professional interests of lawyers were a point of tension in developing the infrastructure of registration with their interests and those of their elite land-owning clients, often running contrary to those of the politics of registration.

In focusing on the creation of the title system, the research presented in this Chapter

is split into three sections, each focusing on a particular aspect of the development of information infrastructure of land registration. The first section is concerned with the first set of land registries established in two regions of England in 1764 and of proposals for a nationwide land registry considered by the Real Property Commission in 1829. This section discusses the failures and flaws of these early moves towards registration as raising crucial legal and socio-material challenges, which the later LR sought to address. The second section then moves on to focus on the foundation of the LR itself. Firstly, through the legal innovations of Wilson whose work on the 'theory of representation'. A legal theory that is crucial in understanding how the transaction of property came to be *Blackboxed*'. The third section focuses on the becoming of the infrastructure of land registration by exploring the LR's initial challenges at both a legal and technical level. This section focuses on the 'gap' left in the *Blackbox* of registration by the mapping of title to land and how these issues were overcome by the time of the application of compulsory registration to London.

## **Land Registration before the Land Registry**

This section starts with the creation of two Registries of Deeds in Middlesex and West Riding in 1764. This starting point has been selected not because this is the origins of the title system in England but because the failures of these early registries provide a point of contrast which highlights the issue faced by the latest creation of an infrastructure of land registration (with the origins of deeds and the contrast between 'deeds' and title systems being explored in greater depth in Chapter 5). In examining these two early registries, this section argues that their failure resulted from a lack of standardisation and classification systems. The result of an inter-relation of both the socio-material organisation and legal interpretation of how real property could be owned, evidenced and transferred.

The second part of this section then focuses on the findings and suggestions of the Real Property Commission of 1829, which specifically addressed the failures of the Registries in Middlesex and West Riding and from which the Commission produces its recommendations as to how a system of land registration should be organised. This section will show that the proposed system would have required both an extensive expansion of the administrative powers of the state and would not have addressed many of the legal and socio-material challenges faced by the register.

Together this section forms the backdrop against which the system of land registration was formed. The uncovered challenges were an important counterpoint against which the subsequent development of the infrastructure of land registration must be understood.

### **The Registries of Middlesex & East Riding**

The development of the first forms of centralised state-managed land registration in England began in 1764 with the creation of Registers of Deeds in the counties of Middlesex and West Riding (Pickering 1764, 7 Anne C20, pp 502 - 509). These two Registries are crucial in developing the information infrastructure of land registration, not because they are the genesis of the current system, but because the land registration was formed in part as a reaction to the failures of these early registries. The following section discusses these failures in terms of both socio-material and legal limitations at the time these registries were created and how these conditions constrained the use of forms of classification and standardisation within the Registries.

The reason behind the creation of these first registries was the importance of using land as the collateral against which capital could be borrowed. The justification for which was laid out in these terms by Queen Anne when the legislation for these acts

was introduced to parliament:

*Whereas the West riding of the county of York is the principal place in the North for the cloth manufacture, and most of the traders therein are freeholders and have frequent occasions to borrow money upon their estates for managing their said trade, but for want of a register find it difficult to give security to the satisfaction of the money lenders* (From: Howell 1999)

The need for clear documentation as to the ownership of the land was an issue in general with the conveyancing of property at this time, as there was a litany of potential legal interest including Doctrine of Notice (See : Maitland, Chaytor, and Whittaker 1916, pp 111 - 120), the requirements of strict settlement enforced by the Courts of Chancery (Buck 1995), and the effect of this may have on the marketability of the real property (Atkinson 1838). This did not include the very real possibilities of frauds that could be committed against purchasers during the complexities of the conveyancing process (Howell 1999).

This legislation established these two registries that were the first state-run administrative registers of transactions in land in England. Historians have noted that there was a general intention of the government at the time to expand similar registries to cover other areas of England; however, this was not a strong commitment, and no other such registers were proposed throughout the rest of the 18th century (Howell 1999).

Through how they were implemented, the registers did not fundamentally address the concerns that brought about the calls for the system in the first place. The registration of deeds still did not provide indemnity against other claims of ownership or prior obligations on the land. However, despite the failure of these early Registers to address the legal issues associated with lending to traders in these counties, as registries, they continued to operate from their founding until 1976.<sup>1</sup> A

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<sup>1</sup>The Middlesex register closed in 1940 following the expansion of compulsory registration in

continuation that saw them operate in the same manner, without significant reform throughout all of the other developments in forming the infrastructure of land registration discussed in this Chapter. This fact demonstrates the long-arch historical time spans involved in the development of the infrastructure of land registration and the inertia of land law reform in England.

The failures of Middlesex and West Riding registries are worth exploring in-depth as a point of comparison with the later development of the LR. As, while these early registries did not provide a model for future developments in land registration and land law, it is the subsequent legal and political debates that sought to dissect and address their inadequacies to which the form of today's LR can be traced back to the operation of these registers. To this end, the registries of Middlesex and West Riding demonstrate how the development of land law and LR of today was not inevitable, with the infrastructure that facilitates land registration being bound along a path-dependent track. Rather, they are examples of an infrastructure which "could have been otherwise" (Bowker and Star 1999, pp 198); and it is thus important to explore the path which was not taken. Indeed, the research in this Chapter is focused on the creation of a system of *title* registration calls for an alternative register of deeds persisted until the early 20th century — with such a system only being completely ruled out in 1911, 50 years after the founding of the LR (Royal Commission 1911).

The crucial component of what the registries in Middlesex and West Riding did and why they failed was because of the standardisation and classification of what was being recorded. On the surface, the task of each registry was relatively simple; to record new transactions in real property, which future purchasers could then consult. When a transaction was to be registered, it would be added to the register

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London prior the start of WW2 (*Middlesex Deeds Act*, 1940) while the West Riding Registry was closed four years after having been modernized to use the decimal currency system (*The West Riding Deeds Registry (Decimalisation of Fees) Rules Confirmatory Instrument*, 1970; *The East Riding Deeds Registry (Closure) Order*, 1974)

along with the legal deeds to the property under inspection. However, despite the surface simplicity of such a system — a simplicity which appears to have been assumed by the drafters of the initial legislation, with no specific clauses specifying how the registries should be organised or run — the complexity involved in real transactions quickly overwhelmed the system which was implemented. The challenges faced by the registers were two-fold; firstly, in how transactions themselves were to be recorded and archived, and secondly, what was the legal use of the deeds which were to be stored. Each of which presented significant socio-technical challenges to both the operations of this registry and of the development of future systems of land registration.

The first issue which the initial registries faced was what was being recorded, and in particular, there was no standardisation between the documents that came to be recorded. As the plural 'deeds' implies, there is not one simple document which would cover registration. Rather, the 'deeds' could be made up of a heterogeneous set of documents through which ownership could be established. As Cooke (2003, pp, 5) explains, the deeds are required to show "a chain of entitlement made up of legitimate links" which in theory "goes back to the beginning of the relevant legal system, but invariably law or custom prescribes a convenient limit". In genealogically tracing back the ownership of property in this manner, what constitutes legal evidence from the time the conveyancing took place has invariably changed over both historical and regional traditions.<sup>2</sup> As a result, what constitutes the deeds as a whole, and its constituent parts could be highly diverse in form and content, which has significant implications for both the legal interpretation of the deeds and use as part of a broader system of registration.

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<sup>2</sup>Simpson (1986, pp 121 - 123) records several such practices which were designed to ensure the preservation of documentation to a transaction, and through the materiality of the device used, to protect against fraud. For example, it was common practice for the foot of the vellum on which a contract was executed to be cut off and preserved in Court records, with both parties then able to prove the veracity of their contract, as signed, against the unique quality of the calf skins. Similarly, other transactions were, for those able to extend influence, recorded by Royal clerks in copies of closed copies of Court documents preserved by the crown.

The second issue facing the early registries was how information was recorded. If the register was to record the deeds of a property and its conveyancing to a new owner, it is crucial that the information retained by the register be readily accessible for consultation when required, either by the settlor on the sale of the building or by the lender wishing to ascertain the claim the assets which are to be leant against. For this to be possible, there needs to be a standardised system for classifying and archiving information. The same system then needs to be used to retrieve the information when it is needed. In the case of the registries in Middlesex and West Riding, the system used was to create a chronological record of transactions along with an alphabetised index against the names of those conveyancing property. This system is described in the briefest possible terms in the act, which created the registries (Pickering 1764, 7 Anne C20, pp 502 - 509). Unlike the specificities for the enforcement of the law against fraud, which is detailed in-depth, the mechanisms through which the Statute would be enacted are not detailed.

The inadequacies of this system quickly became apparent. Unlike the cross-sectional nature of the Land Tax (which is discussed in Chapter 5), where tacit knowledge could be deployed on a cross-sectional year to year basis, the registries were by their nature longitudinal. For example, an alphabetised register of names can function seamlessly when all those involved are familiar with the names which are being recorded. Over time, however, the knowledge of the names which were being recorded (and those recording them) will fade as people die, change names and move in and out of the local area. As a result, what had once been tacit local knowledge of who was who decides over time, making an alphabetised list of names which was once simple for all those involved to navigate an increasingly difficult task for subsequent generations who are not familiar with all of the names which have been recorded. This included; the occurrence of the same name belonging to several people, changing of names, the different spelling of the same name (a common problem at the time), and that no description of the transaction

was recorded on the index requiring every deed to be inspected for those who transacted multiple estates (Select Committee on Land Titles and Transfer 1879, pp x). To the extent that searches were rarely done against the register and those that were often only checking the most recent entry, not the deeds. The searches were highly costly and cumbersome, with one lawyer at the time of the 1830 Real Property Commission complained of having to spend ten days searching through registry documents to find the required deed, while in other cases, the use of the registry was so burdensome as to be considered a wholly impractical proposition (Real Property Commission 1830, pp 25 ).

The problems faced by the socio-technical organisation of the registries themselves were further compounded by how the documents which were stored in them could be legally interpreted. As just as the deeds themselves, as material objects, could be highly diverse in their material form, so could how these objects could be interpreted as legal facts. A problem that had become an apparent and widely accepted truth by the time of the Real Property Commission, with the second report finding that “As to the title deeds; the possession of them is never conclusive, and in many cases it cannot be had” (Real Property Commission 1830, pp 4). Rather each assessment of the deeds was a question of risk assessment into how secure claims to the land under inspection could be held to be.

The risk associated with the transfer under a system of deeds was that even if a clear and well-documented genealogy of the land under inspection could be provided, there was no external metric by which this could be guaranteed as a complete representation of the history of the development of claims over that land. Indeed, as the Real Property Commission reported, “A change of the possession of the title deeds does not, and cannot, always follow the creation of an interest in land.” (Real Property Commission 1830, pp 4). As a result of the inability of a deeds system to provide positive affirmation of the genealogy of property that the doctrines of



marketability arose, in which title deeds deemed by the Courts of Equity to be insufficiently sound, can be reneged upon by the purchaser. The Doctrine of Marketability was an important stumbling block in the conveyancing process at the time, which indicates the complexity of real estate law and the conveyancing of property in the 18th and 19th century. Atkinson, summarises the complexities around the doctrine of marketability thus:

*“To common apprehension, unfettered by the technical and conventional distinctions of lawyers, all titles being either good or bad, the former would be considered to be marketable, the other non-marketable. But this is not how they are regarded in our courts of equity, the distinction is taken there being,— not between a title, which is absolutely good, or absolutely bad,— but between a title, which the court considers to be so clear that it will enforce its acceptance by a purchaser, and one which the court will not go so far as to declare it a bad title, but only that is subject to so much doubt that a purchaser ought not to be compelled to accept it” (Atkinson 1838, pp 1)*

The title — that is, the claim to the land — had to be sufficiently strong for it to be enforceable by the Court of Chancery (which was responsible for claims of equity). This lack of guarantee as the veracity of title provided by deeds was important for two further intertwined but distinct principles in English land law during the 18th century. The first of these was of the multiple rights or claims to use the land. As within the distinctions between copyhold, leasehold, and freehold (which are discussed in Chapter 5), there are potential claims, rights, and uses to land which are both subordinate too, and overriding of the ‘root’ owner of that land. The collection of rights or multiple ownership of land was collected in legal theories of ‘estate’ of an underlying piece of land. When coupled with the second principle of the doctrine of notice, which held that rights or claims to land took priority based on their chronology regardless of the knowledge of such rights held by the current owner,

purchasers could be exposed to prior rights or obligations that may significantly affect the value of the underlying land (Harpum, Bridge, and Dixon 2012, pp 270).<sup>3</sup> These specific legal doctrines were the source of doubt in the process of granting credit on the purchase of land. What made lenders so cautious was the possibility of prior legal obligations to that land unknown to the lender but for which the owner was still liable. Hence, that lending without a secure system of proving the lineage of the land could lead to dire financial consequences both for the purchaser and the lender.<sup>4</sup>

As a result of these issues, the Registries failed to fulfil the purpose for which they had been founded. Administratively, the organisation of the Registers and the way information was recorded and archived made their use difficult, time-consuming, and unreliable. Furthermore, the information they stored compounded these issues with no standardised form or system of classification for the deeds that were to be recorded. A disfunction that was not limited to the socio-material organisation of the documents themselves but extended to their legal interpretation. These early registries thus failed in their purpose on three counts; of how the Registers themselves were run, of how the ownership was evidenced, and of doing little to facilitate the transfer of property. As a result of both the organisation of these registers at both a socio-technical level of how the information was stored and of the legal use of information which they contained, they failed to fulfil the purpose for which they had been founded. Therefore, the lack of standardisation of what it meant to register land and the archival classification of the register itself stymied both the legal and socio-technical running of these early registries.

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<sup>3</sup>The doctrine of notice, as it stood in its feudal variant was effectively abolished by the Conveyancing Act 1882 which limited this to only requiring purchasers to pursue 'reasonable enquires'.

<sup>4</sup>An issue which was of paramount importance to recent acquirers of land, but not those of the traditional aristocracy, for whom proving lineage-based was far easier, and often not required when borrowing from other members of the aristocracy (which accounted for a significant portion of all aristocratic borrowing) (Cannadine 1994).

## **The Real Property Commission**

The challenges faced by the Registries in Middlesex and West Riding were thus not wholly dependent upon the specificities of their implementation but on the limitations of both the socio-technical organisation of the registers themselves and their legal interpretation. A major landmark in the move towards a national system of land registration was the work of the 1830 Real Property Commission which this section addresses. The Commission's work addressed land law in England as a whole, producing four extremely detailed and lengthy reports — with the second focused on creating a centralised system of land registration. Furthermore, the findings and impact of the Reports were not limited to land registration but had wide applicability to land law and its relation to the importance of land ownership as the basis of wealth, prestige, and power, with this wider context being addressed in Chapter 5.

The importance of the work of the Real Property Commission in understanding the development of the system of land registration and the functioning of the system today is again a foil as to what it could have been. In that, the findings of the Second Report addressed many of the organisational failings of the Registries in Middlesex and West Riding discussed in the last section. However, as this section will demonstrate, the proposed organisational means suggested by the Commission both required a massive expansion of the state and failed to address the underlying legal complexity. Consequently, the following creation of the LR and the information infrastructure it supports were created against this backdrop, both in ensuring the state's limited capacity over dealings in land and the innovation necessary to simultaneously transform both the material and legal form of the transaction process.

The Real Property Commission, in addressing the question of a system land registration as means of making the process of conveyancing simple and more

secure, found that:

*“there does not appear to us to be any peculiarity in the laws of this country, or in the habits of the people, which should necessarily prevent or lessen the benefits of a general register”* (Real Property Commission 1830, pp 19)

The report, therefore, goes on to develop a proposal for a system of registration that could address the myriad of other issues faced in the conveyancing process and with English land law more generally, which the Commission detailed in its other three reports. In doing so, the Commission focuses on the workings of the registries of Middlesex and West Riding for examples of the logistical issues which a national system would need to overcome.

One solution proposed by the Commission to the challenges faced in indexing and archiving of information faced by the Middlesex and West Riding registries was to organise the register geographically rather than alphabetically by the name of those involved in the transaction. Indeed, this was considered by the Royal Commission, noting that:

*“It has been urged in support of this plan of reference; that the advantages to be derived from a general map or survey would compensate for the expense of it”*

A proposal on which they heard evidence and to which they gave “particular consideration”. However, the Commission ultimately concluded that:

*“the collateral benefit to be derived from it of affording evidence of the identity of the lands; but we came to the conclusion, that the preliminary expenses of framing a general map [...] render it inexpedient to attempt the establishment of a Register in this Country founded on such a basis.”* (Real Property Commission 1829a, pp 26)

This conclusion must be understood not only as a question of cost but of the technological limitations of the time. As, while a map-based index could be

envisioned, or even a far more comprehensive cadastre, there was not a map of England available at this time for a register to draw on. Indeed, England was not comprehensively mapped by the Ordnance Survey [OS] for another 20 years. Furthermore, even once England had been mapped by the OS, it is unlikely that the scale and detail of the maps they produced at this time would have been suitable for the conveyancing of property (Sweeney and Simson 1967). Paradoxically to the modern mind, to conveyancers of the time, the use of maps was often seen as “impractical luxury” (Pottage 1994, pp 376), with the written descriptions being preferred as both more efficient and accurate.

Instead, the Commission’s proposals included a more detailed system of organising the index in which the register would record any change in the ownership. To record any change in the ownership of a would extend the remit of a system of land registration beyond the conveyancing of property. As there are many other ways in which the ownership of a property can change ownership. In order to take this into account, the Commission proposed an extended remit of a land registry also to store records of wills and of bankruptcies — the other two main means through which the ownership of a property could change. To accommodate these proposals, the Commission suggested a general index of property transactions that would be recorded chronologically. The general index would then be cross-referenced to an index of names and a record of the root title of the property. When necessary, these records could be further cross-referenced to the records of wills and bankruptcies as was needed. In proposing this system of registration, the only use of the location of each property made by the Commission was to split up the register into county offices. To make the physical register closer to the properties which were recorded. An example of which was given in the report and which has been reproduced in Figure 4.1.

The extensive tabular system proposed by the Commission was a highly ambitious

Figure 4.1: Tabular Index Proposed by the Real Property Commission

54 SECOND REPORT OF COMMISSIONERS ON THE LAW OF REAL PROPERTY. 55

THE following TABLE contains an Example of - - - an INDEX to a REGISTERED TITLE.

SYMBOL 10. - - - SYMBOL 10.

Number.	When Registered.	Where Registered.	Date of Document.	References to Index to Roots of Titles, and to Titles brought from and carried to other Symbols.			SPECIFICATIONS.	Entry in Directory.
				Index to Roots of Titles.	Brought from.	Carried to.		
				Book. Page.				Book. Page.
1.	1831 - May 6	-	1831 - May 5	1. 9.	-	-	-	1. 56.
2.	1831 - May 6	-	1831 - May 5	1. 9.	-	-	-	1. 56.
3.	1842 - July 7	-	1842 - July 6	-	-	-	-	2. 73.
4.	1854 - Aug. 9	-	1854 - Aug. 6	2. 53.	-	-	-	3. 54.
5.	1856 - Sept. 1	-	1856 - Aug. 30	-	(9) Bk. 1. p. 6.	-	-	5. 62.
6.	1862 - Oct. 2	-	1862 - Oct. 1	-	-	(12) Bk. 8. p. 7.	{ Lands in the parish [ of A. - - ]	6. 74.

administrative scheme for the time, which would significantly expand the administrative capacities of the English state. Indeed, when the register was proposed, there was no centralised recording of births or deaths in England and Wales. The General Record Office was not established until 1837 (Higgs 2003), which was further established with a statistical and scientific purpose (one which further lacked a compulsion of registration which the Commission's proposal would require) (Goldman 1991). Indeed, given the expansive and compulsory nature of the Commission's proposals, had this system been implemented, it would likely have encountered serious logistical and organisational challenges. As the proposed scale of the register and its plan to comprehensively record all ownership changes were significantly larger in scope than any other system of information collection and storage undertaken by the English state at the time. Furthermore, the intrusive nature of the proposed register, and the compulsion to register, which applied to all landowners, resulted in fierce opposition in Parliament. The opposition was motivated by what they saw as an invasion of the privacy of landowners as the proposals would significantly expand the role of the state in the ownership and conveyancing of land. The concern of landowners was that this new role would then be used to tax their estates, a concern which was not unwarranted as this had happened in many other European states (Kain and Baigent 1992).

Therefore, the Commission's proposals were, therefore, for a system based on the standardisation of the information is collected and its organised classification. In order to operate, as comprehensively as the Commission imagined it would be necessary, it required an extension of not just a system of registering land but also of deaths, wills and bankruptcies.

However, the radical system of registration proposed by the Commission was driven by its conservative approach to the law of real property. The complex system of tabulation and recording which the Commission proposed sought to address the

deficiencies of a system of ownership based on deeds through the expansion of the English state's administrative apparatus rather than thought reform of the legal functioning of deeds and real property. The reforms which were enacted from the other three reports of the Real Property Commission made conveyancing simpler, more secure, and addressed the worst complexities which had accumulated in the law of real property<sup>5</sup>. However, the changes which were passed did not address the issue of land registration. The fundamental problems that had given rise to the first registries and the issues they sought to address could not be addressed by the conservative simplification and codification of the law, which formed the basis of the other Acts passed following the recommendations of the Commission.

The failure of both registries in Middlesex and West Riding and the system proposed by the Commissions showed that the problems facing the establishment of a national system of registration were a complex mix of socio-technical operations and their legal interpretation. Furthermore, this included the social concerns of the political limits on the remit of any new administrative apparatus, the legal confines of adopting such a system to the accumulated weight of existing real property law, and of the technical organisation of the register itself.

As a result of the massive extension of the administrative powers of the English state and the political opposition this aroused amongst the aristocratic elite, the Commission's proposal failed to be realised. However, despite the political failure of the Commission's proposals, calls and proposals for a system of registration that drew on the proposals of the Commission to address the difficulties and complexities of the conveyancing of property continued to be made throughout the 1830s, 1840s and early 1850s. However, in relying on the same template on an underlying system of deed registration, they remained vulnerable to objections that had stalled previous proposals in both the expanse of state intervention needed and

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<sup>5</sup>These changes mainly came from the Fines and Recoveries Act 1833 and Real Property Limitation Act 1833, which both limited the retrospective complications to which property purchasers may be liable too (Anderson 2010)



inadequacy to address pitfalls of the existing conveyancing process.

## **Towards a System of Land Registration**

This section addresses the formation of the LR and is split into two subsections. The first subsection focuses on the ‘theory of representation’, a legal innovation on which the title system of the LR is based. It argues that this legal theory is the basis of the *Blackboxing* of the legal complexity of the conveyancing process. This process forms the core ‘atom’ of registration, which continues to be the basis of land registration information to this day. The second part of this section examines the formation of the LR. It focuses on the system of administration and organisation of information which put the legal ‘theory of representation’ into practice. In particular, it presents research on the socio-material practices of how documents were recorded, stored and archived.

### **Ownership by Title**

This section focuses on the legal ‘theory of representation’ developed by Wilson. This theory provides the basis of the distinction between a system of registration based on ‘deeds’ and those based on title<sup>6</sup> and forms an epistemological shift in how the process of conveyancing could be understood.

The major innovation in the development of the system of land registration as it exists today was the work of the solicitor and conveyancer Robert Wilson. This section examines Wilson’s creation of a “theory of representation” and its importance in developing land registration as an information infrastructure. This theory was developed against the backdrop of the registries of Middlesex and West Riding and the proposals of the Real Property Commission discussed in the last two

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<sup>6</sup>However as Howell (1999) notes “*In the early proposals, there is no clear perception of a distinct difference between the two systems: “title” and “deeds” registers are referred to without any suggestion that they might be radically different ideas.*”. Rather, this is a distinction that has since been developed by historians and legal scholars studying the shift in the practice of conveyancing.

sections. The innovation of Wilson's work directly addressed the legal and material constraints of the time thorough with his work being crucial to understanding how conveyancing became *Blackboxed*. The legal and socio-material form continues to form the basis of the transaction as recorded and understood by the LR today.

The originality of Wilson's work derives from — unlike the previous plans of the Royal Commission or the Registries in Middlesex and West Riding — focusing not on one aspect of how property was owned, evidenced and transferred, as previous, but rather considered each of these three aspects as inseparable from each other. 1844 first expressed these ideas in Wilson in his work '*Outlines of a Plan For Adapting the Machinery of The Public Funds to the Transfer of Real Property*'. It was an originally private work distributed to other like-minded legal professionals and later published after it was well received and became highly influential with Benthamite reformers (Anderson 1992; Wilson 1844)

Wilson's work remains crucial to understanding land registration as it exists today, as a result of his innovation to separate the derivative interests in a property from a right to the property as a whole, through what he described as a 'theory of representation'.

This innovation was to propose a significant change to the functioning of English land law at the time, in which such rights were not separated or clearly hierarchical. For such a theory to be put into practice, the right to the property would then need to be represented in a legal title to that property.<sup>7</sup> One which would be established

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<sup>7</sup>It should be noted that Wilson's work did not create the 'title' to property but rather can be seen to privilege the title while through the theory of representation, which in turn adjusted what was meant by the term 'title'. Providing a clear definition of what is meant by the term 'title', particularly when Wilson was writing, was no easy task. Simpson (1986, pp 40) captures some of this complexity of the development of 'titles' when he states that "*the seisin which is the root of titles, and seisin which is claimed by showing title*". Moreover, what is meant by the term *seisin* is no more illuminating as Maitland (1911, pp 358 - 384) paints the vignette of the modern (19th century) scholar trying assessing the term as: "*evidently the main clue to this elaborate labyrinth is the notion of seisin. But what precisely this seisin is I cannot tell. Ownership I know, and Possession I know but this **tertium quid**, this seisin, eludes me*" to which Maitland replies "*seisin did to some extent become a word with many meanings or rather shades of meaning. The seisin which is good enough for one purpose is insufficient for another*".

through a system of land registration and through which documentary evidence of the right to the property as a whole would be secured, and under which all derivative interests would be represented through the title. As Wilson explains:

*Our argument will next proceed to apply the theory of representation to real property; in so doing to observe the extreme simplicity to which it might reduce the ordinary transactions of sale or mortgage; without affecting the security or efficiency of family settlements; or in involving the abolition of feudal tenures. It will also be shown that the same fundamental principle might lead to a perfectly simple system of registration; without disclosing equitable mortgages: and that by its further development, even subordinate titles, such as those to leases, might be divested of much unnecessary affirmative proof; and an efficient substitute might incidentally supply the place of declaratory actions, now so much wanted and so imperfectly replaced by other remedies. (Wilson 1844)*

The work being done in Wilson's proposed approach is twofold: of creating a standardised surface form of property ownership while allowing the complexities of land law, as it existed at the time, to be hidden underneath. In essence, the move to a 'theory of representation' can be seen as creating a *Blackbox*, in which property is formed into a neat and standardised legal form, within which it is hidden, from the intended user- the complexity of English land law. For Wilson, the purpose of developing such a legal theory was explicit as a means to achieve a centralised register of property that would replace what he saw as the outmoded mechanisms of conveyancing at the time. The legal form of the "theory of representation" was part of the socio-material 'machine' through which conveyancing would run. As he went on to explain:

*The independent derivative interests, which now, like scattered obstructions, impede the alienation of property, might thus work harmoniously together, as the regulating wheels of one great machine, of which the centralised legal title*

*would be the efficient motivating power. It is this disentanglement of the general property from the mass of inferior interests in which it is involved, which constitutes what we have called the “theory of representation;” a principle already admitted in the law of personal property, and which it is now proposed to apply, with improved machinery, to facilitate the transfer of land. (Wilson 1844)*

In essence, a standardised legal ‘exterior’ of all property was created to simplify the ownership and transfer of property. A standardised legal form which he further proposed, would be mirrored by a standardised material form. Wilson further outlined the administrative process in great detail, presenting plans for how registration would be recorded, cross-referenced, updated, and outline the certificate to title, which would be granted as the physical manifestation of a title that was now guaranteed by the state.

It was thus an innovation that did not require the basis of English land law to be overhauled or the rights and interests to a property to be altered. Instead, the complexities of the law as it stood would remain, but in a manner concealed, allowing such matters to be explored, only when they should prove to be legally necessary, rather than by default.

The ideas presented by Wilson did not have an immediate impact upon land registration or the wider debates about the ‘land question’, but his — along with other similar ideas which Henry Swell and William Strickland Cookson contributed — created a momentum which led to the ‘Benthamite’ Law Amendment Society, to switch its advocacy from a deed to title system (Anderson 2010). Advocacy bore fruit when in 1853, a Commons select committee appointed both Wilson and Strickland Cookson to a Royal Commission to consider — for the first time — a system of title rather than deed registration.

The work of Wilson was highly influential on the recommendations of the Commission, with many of the suggestions being borrowed from Wilson’s original

1844 proposals. Reflecting the shift in approach to the law taken by Wilson, the 1852 report differs both substantively and in style from the 1830 report. In particular, the 1852 report is focused on redressing the legal concepts and process which would underlie a system of registration. As a result, it does not, unlike the 1830, focus in particular detail on the organisational and tabular system which the register itself would require.

Indeed, the commitment to a title, rather than deeds-based system, is something which the Commission lays out as the fundamental feature for ensuring a system of registration opening their report with the argument that:

*“we have come to the conclusion that the register ought to be composed of a succession of simple transfers merely, and should manifest only the actual and existing ownership of the land for the time being, without laying open the history or past deduction of it”* (Royal Commision 1857, pp 25)

However, not all of Wilson’s proposals were adopted wholeheartedly by the Committee, and Wilson himself did not put his name to the recommendations of the final report. In particular, the compulsion to register was a particular point of controversy for the Commission, who was alert to the political opposition that this had created for previous registration bills. In particular, the Commission was clear that any system of registration should not “disturb possessory titles, by arousing dormant claims and encouraging litigation” as a means of assuaging fears of the unintended legal outcomes of a switch to a system of registration(Royal Commision 1857, pp 26). Furthermore, in a concession to the ‘experimental’ nature of the proposed system that the system should remain voluntary as “a test of its usefulness and suitability to the condition and wishes of the country, whilst its non-adoption would render it innocuous” (Royal Commision 1857, pp 27).

However, while this was a political concession, in reading the report, it is clear the extent to which those involved in Commission saw this as only a temporary

compromise. The authors believed that a title registration system would flourish on the merits of providing a securer and more convenient system for conveyancing. The recommendation was that both that registration should be voluntary as:

*the change is sure to recommend itself if it is likely to be followed by those benefits which are anticipated, it would be advisable, at least in the first instance, to make the registration purely voluntary.* (Royal Commission 1857, pp 27)

Furthermore, that once a system was in operation that:

*all land once voluntarily put on the register, the subsequent dealings and title should always be continued on the register. In this sense, we concur in thinking that registration should be compulsory* (Royal Commission 1857, pp 27)

The Commission hoped that system would take off without compulsion as registration ‘would be its own reward’. It was, however, this compromise, and the lack of an index map — which the Committee thought would be the ideal system for the organisation of registration information, but which was deemed too costly to be justified — that saw Wilson withdraw his name from the signatories to the final report (Anderson 2010).

The recommendations of the Commission became the 1859 ‘*Bill to Establish Registry of Landed Estates*’, which was widely expected to pass into statute, but was scuppered in its third and final reading in the Commons, by the fall of the Conservative government (Anderson 2010, pp 197). A revised bill returned to the Commons in 1862 again found support from the Liberal government and passed into statute.<sup>8</sup>

The ‘theory of representation’ developed by Wilson thus became the foundation of the system of land registration in England, which continues to underpin the legal and socio-technical organisation of land registration to this day. Its innovation was a joint

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<sup>8</sup>For a discussion of the changing legal details between the two bills, see (Anderson 2010, pp 198)

movement of creating a standardised *Blackbox* of both the legal and material form through which property was to be owned, evidenced, and transferred. A creation that did not require either the fundamental reform of land law or an expanse of the administrative state beyond the conveyancing process itself. Thus, it was able to confine the complexities of land law within the machinery for the administration of conveyancing. Which, by default, sought to conceal and to settle such complexity, allowing the *Blackbox* of ownership to be opened only when necessary.

## 2.7

### **The Establishment of the Land Registry**

The Land Registration Act of 1862, therefore, established a system of voluntary land registration in England and founded the office of HM Land Registry to administer and keep the Register. The statute specified how the system was to be organised and records kept as:

*“if the title shall (either absolutely or subject as aforesaid) to be good and marketable, the applicants shall furnish to the registrar, and he shall settle for the purpose of registration:*

- *first an exact description of the land to be registered*
- *secondly, a statement of the persons, classes or descriptions of the persons, that are to become entitled to the lands, and the estates and the powers, and that exists, or may arise or become invested in such a person retrospectively*
- *thirdly a statement of the mortgages, charges and incumbencies affecting the lands or any part thereof, and of the persons entitled thereto, both in law and equity”*

Each item from the above quote then formed one of the record books from which the register was formed. The first of these was entitled the “Register of Estates with

Indefensible Title” which would contain a description of the Estate in question, with an indefensible title being defined by the Act as to be of a quality which would be held to be both valid and marketable by the Court of Chancery (*Land Registry Act*, 1862, pp 474). In chronological order, a ‘title number’ would be assigned to the title in question, a number, which along with specific reference to book and page codes, would be used to cross-reference the title across the register. The second book called then “Record of Title to Lands on the Registry” in which “an exact Record of the existing Estates, Powers, and Interests in the Land so registered as aforesaid, and the Names and Descriptions of the Persons or Classes of Persons that are or maybe come entitled the retrospectively” would be kept. The third book was called the “The Register of Mortgages and Incumbrances” would, under the same title number, keep a record of debts held against the Estate (*Land Registry Act*, 1862, pp 467). The register system was thus first to record the property itself, then the owner of the property, and finally the financial obligations of the owner of the property, with each book being cross-referenced and updatable separately.

An example of which is shown in Figures 4.2, 4.3, and 4.4. Each figure represents the first title registered with the LR in each respective book. Figure 4.2 thus registers this as Title 1, Volume 1, Page 1, with the description of the property and its location. This being in “Ipswich”, “Suffolk” and extend to cover a property known as the “Chauntary” this ground and garden the farm and farmland known as “Home Farm” and “Gone Hall”. Another map of the Estate having been deposited and archived by the LR, a measure which was not required of the process of registration itself at this time but which would assuage any doubt as to the marketability of the title itself. Once these documents were verified by the LR, “Copies of such Descriptions and Statements when settled with the register shall be delivered back to the applicants” as the new entry on the register would be dispositive of the title itself the documents used to prove this made redundant. The LR then issued a Land Certificate to the owner of the property, which could be used to demonstrate the



veracity of their claims to the title, with further copies of this certificate to be issued by the LR at the request of the owner (*Land Registry Act, 1862*, pp 488).

It can further be seen in Figure 4.3, also listed as Title 1, Volume 1, Page 1, specifies the individuals to whom this title belongs, with the first owner being the former Solicitor-General Sir Fitz-Roy Kelly. The further additions to this page tracked the changing ownership of the title without the need for the record of the underlying property itself to be updated. Figure 4.4 then shows that the title was sold by Sir Fitz-Roy Kelly to Charles Binny Skinner for £11,000 in 1868.

It is from the combination of these three record books from which the Register was composed and with it the new encompassing system through which property was evidenced, owned, and transferred established. Crucially the process of land registration was encompassing as once a property was registered with the LR, the dispositive of the title ensured that property could only be transferred within the title system and not employing conveyancing by deeds.

The process of registration was furthermore an enclosed system, one which was not reliant on any information held or collected outside of the processes of the LR, nor one who supplied or preserved any information which was not needed for the process of conveyancing by the title itself. The 1862 Act itself specified this, stating that the Register could only be inspected by “the owners of Estates and Interests, of Mortgages and Incumbencies recorded therein, or of their respective Solicitors or Agents: No other Person shall be permitted to inspect the Books, except under and Order of the Court of Chancery” (*Land Registry Act, 1862*, pp 476). This clause was crucial to establishing the register’s privacy and ensuring that the information held in the registry could not — without another act of Parliament—be used for any other purpose than the conveyancing of property. Furthermore, as the following Chapters will discuss, the changing nature of the secrecy of the register was an important element of its development and ability to provide statistical information.

Figure 4.2: Register of Estates with indefeasible title

The Register of Estates with an		Indefeasible Title.	
Date of Entry	DESCRIPTION	Record of Title.	Observations
25 <sup>th</sup> Nov 1891	<p>All those hereditaments situate in the Parish of Sproughton and St Mary's in the County of Shropshire comprising the Manors known as the Chauntry with the Ardene House Farm and lands thereto belonging the farm and lands called the Home Farm and the Mortgage or Tenement and Garden called Crane Hall all which said hereditaments contain in by act of encroachment <del>1891</del> 1891 or hereabout and are delineated on the Maps of 1891 deposited in the Office of Land Registry as part of the description of the same and thereon edged with red together with the Mines and Minerals under the same hereditaments.</p> <p>Before notice to Register.</p>	<p>Charges and Liabilities, not being Incumbrances within the meaning of the Act, except Succession Duty, and Leases and Agreements for Leases</p>	
4 <sup>th</sup> Dec 1892	<p>The Register is closed. The hereditaments are registered under the Land Tax for 1895 &amp; 1897</p> <p>1895 &amp; 1897</p>		

Figure 4.3: The Record of Title to Lands on the Register

[illegible]

Figure 4.4: Register of Mortgages and Incumbrances

REFERENCE		REFERENCE		OBSERVATIONS.	
Vol.	p.	Vol.	p.	Leases, or Agreements for Leases.	Instrument Book.
Register of Estates.		Record of Title.			
Mortgages.		Incumbrances.			
The Register of Mortgages		No. 1.			
Date of Entry.	Charge and Incumbrances.	Instrument Book.	Date of Entry.		
Nov 24 <sup>th</sup> 1867	By Deed dated 29 <sup>th</sup> November 1867 the hereditaments were granted and conveyed by the said George Chapple Parker to Charles George Young John Henry Gwent and Robert Gwent to the Right Honorable Sir Fitzroy Kelly on fee fee from the before mentioned Mortgage of 21 <sup>st</sup> November 1854 and 12 <sup>th</sup> April 1859 the same having been satisfied. <i>Agreement dated 21<sup>st</sup> Nov 1864</i>	1867/13			
Nov 17 <sup>th</sup> 1868	Deed dated February 14 <sup>th</sup> 1868 left at 1/13 & 1868	1868/13			
Jan 17 <sup>th</sup> 1868	By Deed dated 11 <sup>th</sup> January 1868 the hereditaments were with other hereditaments granted by Charles Birney Skene to Charles James Barran of Brunston Square in the County of Middlesex Esquire Robert Barran of Bray Saint Edmunds in the County of Norfolk Esquire Sir James Robert Cunningham of 12 Sussex Place Signs Gate Barron and George Hedley of 3 Alfred Gate Knightsbridge in the said County of Middlesex Esquire in fee to secure £1000 belonging to them on a joint account and interest. <i>Agreement dated 11<sup>th</sup> Jan 1868</i>				
July 11 <sup>th</sup> 1871	Deed dated 19 Aug 1870 left at 11 15 & 1871	1871/17			
Feb 11 <sup>th</sup> 1871	Deed dated 19 <sup>th</sup> August 1870 being a Reconveyance on satisfaction of the above Mortgage. <i>Agreement dated 19<sup>th</sup> Aug 1870</i>	1871/17			
18 <sup>th</sup> October 1901	Deed dated 7 <sup>th</sup> Dec 1901 (1871/18)				
11 <sup>th</sup> Dec 1901	The register is closed. The hereditaments were registered under the Land Transfer Act 1897. <i>1871/18</i>				

The importance of the 1862 Act for the development of the infrastructure of land registration was thus twofold. Firstly, to establish a new for the conveyancing of property within England through a title system. A new institution administered the Land Registry, through which registration the title itself became dispositive. Secondly, once a property had become part of the title system, it altered the basis upon which the property was owned, how that ownership was evidenced, and how the ownership of the property could be transferred. The new system was a closed system both in terms of the information held and the requirement that titles, once registered, must be transferred through the LR system. The new system of title registration both being enabled by and creating new forms of standardisation and classification in the ownership and transfer of property both in terms of their legal and socio-material form.

## **Becoming an Infrastructure**

The previous section has charted the formation of the LR in 1862 and the legal innovation of the 'theory of representation', which allowed for a system of registration to be organised as a title system. As the following section will chart, however, creating an institutional system of administration does not alone create an infrastructure. The initial formation of the LR had addressed four of the eight dimensions of infrastructure described by Star and Ruhleder (1996). By *Blackboxing* the legal complexity of land law, the title system had built on top of the 'installed base' of the law as it already existed, linking it to the 'conventions of practice' as to existing practices of ownership, and in doing so creating a new set of 'standards' which were 'transparent' to use. However, three of the dimensions, the embeddedness, scope, and professional familiarity required of infrastructure, were outside the remit of the Act, which established the LR.

The following sections thus explore the 'becoming' of the system of land registration

into an information infrastructure-with the system of registration coalescing into its modern form from its founding in 1862 to 1925. Infrastructure can then be thought of as a verb (Bietz, Baumer, and Lee 2010), asking not 'what is the infrastructure' but 'when is the infrastructure'.

The following section is split into three parts; the first section discusses the reasons behind the failure of the early registry; the second look at the specific technical reasons which were intertwined with this early failure; with the third looking at the transformation of the system, which followed from the application of compulsory registration to London.

### **The Early Land Registry**

The founding of the LR in 1862 did not lead to an immediate switch to a title system of registration, with the voluntary adoption of the title system running alongside that of the existing private conveyancing practices. Indeed, the voluntary transition to the title system was a significant stumbling block in developing the infrastructure of land registration.

In the first seven years following the LR's foundation, only 209 titles were fully registered with the LR. A further 118 titles were applied for, but their registration was not fully completed, and a further 125 were either rejected by the LR for being unable to meet the requirements set out in statute or abandoned (Royal Commission 1870, pp 76). The rate of registration represented a very small percentage of transactions being carried out at this time — with this lack of take-up and the inability of the system to successfully authorise almost half of the applications which had been made, demonstrating a clear failure for the LR to work as its creators had envisaged.

The early system's failure can be attributed to the hostility of the legal profession, particularly those whose primary trade was conveyancing, to the system of

registration proposed by the LR. This was in part, as Offer (1981) has shown out of professional self-interest, with their concerns that a title system would undermine their professional status and the income they derived from it being significantly undermined by a simpler and centrally administered system. The hostility of the profession for whom the LR was the primary audience — save for the property owners for whom their title would be secured — was a major setback for the development of land registration as an information infrastructure. Most obviously, this was a result of conveyancers making sure to steer their clients away from the registration of their property or transactions with the LR, with their being particular alarm about how properties would then become ‘locked into’ the system. This was particularly telling in the short term, with the few properties registered in the early years of the LR being testament to the profession’s hostility. Moreover, the professional hostility faced by the LR was a stumbling block in the development of a set of ‘conventions of practice’ which were ‘learned as part of membership’ — two of the criteria which Star and Ruhleder (1996) sees as being foundational to the internal relations of an information infrastructure. The lack of professional and tacit knowledge derived from the lack of engagement with the new structures of title ownership, which the LR was proposing, in turn, hindered the ability of the LR to refine its functions and attune its process to the needs of those who sought to register property.

The hostility of the legal profession to the development of the title system of land registration was thus a major hurdle in the ‘becoming’ of the infrastructure itself. Both steered applicants away from the new system and further prevented the development of a professional body of support and knowledge through which the infrastructure was able to operate. Indeed, the attitudes of the legal profession in this regard have been studied in detail by both Offer (1981) and Anderson (1992). As such, the following section focuses not on the professional resistance to the introduction of new standards but on the failure of the standards themselves to



adequately address the task for which they had been devised. The section charts the socio-technical difficulties faced by the LR following its founding and seeks to analyse the nature of these problems and the solutions which were put to them.

## **Mapping Title to the Land**

The most serious socio-technical difficulties faced by the LR following its founding were in the gap between the legal interpretation and technical implementation of the title system, which was a further question of standardisation. The standardised 'legal exterior' provided by Wilson's 'theory of representation' now needed to be matched up to what was being represented. Indeed, it was this 'gap' that was often the target of practitioners who had been favourable to the introduction of the title system as a whole, but in its operation, advised their clients not to make use of the infrastructure of land registration (Anderson 1992). With the 'gap' between the title as the legal exterior of property not matching up with the mapping of the title to the land, it represented — in effect with the 'gap' leaving the 'lid' of the *Blackbox* of registration open to the legal complexity which was contained within.

The difficulties of the early system of registration arose out of the clash between the legal and technical specification as to what, *exactly*, was being registered. Despite the extensive discussions of systems of mapping that preceded the establishment of the LR, a generalised system of mapping, and one who worked as a standardised map, had been repeatedly rejected by Commissions, Committees, and Parliament grounds of cost. The result of which was that the 1862 act did not specify a system of mapping which could be used to establish the boundaries of the property being registered. Instead, the Act simply called for the "exact descriptions of the lands to be registered" (1862, pp 474).

When the Act was first drafted and came into force, the standard procedure for



private conveyancing was simply to include a brief written description of the property in question as part of the contract conveying the land. It was held that the land in question would be self-evidently recognised by both the purchaser and the settlor, and thus a detailed map outlining the boundary of the property would simply be an unnecessary expense. Rather as Pottage (1994) details local memory was sufficient for the purposes of specifying a property. Conveyancing had evolved to essentially reconcile the ambiguities of memory against the risk associated with uncertainty this created. As Pottage states:

*Given that the formal idea of a good root of title was often unattainable, contract formation became a practical art, which referred only obliquely to the theory of conveyancing. In practice, conveyancing was an exercise in evaluating the plausibility of a paper title against the practical sense of the property that had arisen from land use and lay in the local memory or the memory of an estate inventory.*(Pottage 1994, pp 364)

However, this form of specifying property was largely incompatible with the legal doctrine of a marketable title. This doctrine held that once a sale had been agreed in principle, say at an auction, the main method of public sales of land at the time (Fitz-Gibbon 2018), that the purchaser could be legally compelled to purchase the property. A marketable title was thus an important means of ensuring that a property was sold and that if unforeseen issues arose during the conveyancing process, legal or otherwise, the sale of the property could not be interrupted.

The 1862 Act, in its focus on facilitating the property market of swift and efficient transfer of property, thus required that all title that was to be registered should meet the legal requirements of being marketable. Which, while a seemingly sensible requirement, was in fact at odds with the prevailing practice of the time, in which the vast majority of transactions took place upon technically unmarketable properties, a distinction which in reality did little to deter purchasers.

This marketability of a title was further intrinsically linked to the delineation of property. As the 1870 select Committee report, which inquired into the failures of the 1862 Act, explains:

*“As to the title, it is, when registered as indefeasible, to be such as a Court of Equity would hold to be a valid marketable title. No registry can be made until the boundaries have been not only identified, but freed from the dispute at least until the registrar is in a position to record such disputes as exist.”* (Royal Commision 1870, pp xii - xiv)

As a result, the Committee found the root of the early failure of the LR was in the:

*“ The primary reason why landowners will not resort to the Office [due to], the great troubles, delay, and expense caused by having to show a good and marketable title, and accurately to define the boundaries of the property”* (Royal Commision 1870, pp xviii)

The marketability of a title was thus tied to the ability of the owner to demonstrate the bounds of their property clearly, and to do so required both information from the owners of the property itself and positive confirmation of these boundaries by all surrounding properties. In the absence of any previously agreed and clear demarcation, this requirement was likely to be a point of conflict between owners, particularly in the case of large rural and agricultural estates where dividing boundaries could be movable and unclear natural markers (Pottage 1994). The advantage of the use of mapping technology to establish such boundaries was a point which was raised by the 1857 Royal Commission, which stated that:

*“At the same time we are not insensible to the numerous advantages ‘which a pictorial representation of property’ and its boundaries must always have as compared with a mere verbal description of it. ”*(Royal Commision 1857, pp

21)

Furthermore, the Commission was alive to the potential Pandora's box litigation, which the imposition that a system of mapping would potentially open — but did so through the lens of a cadastral map — stating that:

*"It appears to us, however, that to compel the formation of a general map of England with the view of making it evidence of the boundaries of properties, would of necessity open a vast field for litigation and dispute. Questions of disputed boundaries which are now allowed to remain in abeyance must then be settled."*(Royal Commission 1857, pp 21)

This point demonstrates the interdependence between the organisational technology and legal framework in the establishment of land registration as an information infrastructure. The early schemes and practices of land registration were limited not only by the infeasible costs of the level of detailed mapping technology required but further, that if such a technology were feasible, its implementation into the system of land law, as it existed at the time would not have been viable.

In its place, however, the system of private cadastral surveys fit into a system of registration based on the existing criteria of marketability within land law — which followed from the recommendations of the 1852 Commission. The implementation of these recommendations resulted in the implementation of both the flaws from existing and unattainable standards of marketability and a lack of standardisation about what constituted sufficient documentary evidence of the boundaries into the new system of land registration. Examples of which are provided in Figures 4.5 and 4.6, which show the maps specified in the Register of Estates and recorded in the LR Instrument Books.<sup>9</sup> With Figure 4.5 providing a detailed plan of a title to an estate in

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<sup>9</sup>Instrument books, are where supplementary material evidencing that which is recorded in the three registers discussed above. As Fortescue-Brickdale (1897, pp 134) explains: *"A certified copy of every document on which a registration is made is to be left in the registry. These may be bound together to form a file of instruments, or they may be copied into an instrument book."*

Westminster which is composed of several properties, while Figure 4.6 shows a very rudimentary map for the title to a piece of land which is part of the larger "Hearthville Estate". It is for these reasons that the 1862 Act, which, while the start of land registration in England, is not considered by scholars (Cooke 2003, pp 28) as a true title system. This is because it was neither fully dispositive in effect nor would have been implemented more widely, have collapsed under both the technical and legal flaws inherent in its implementation.

By 1870 the failure of the 1862 Act was well established, and a further Committee was assembled to investigate the possibilities of reforming the existing system. In this regard, the Committee was frank in its purpose and its findings, stating that:

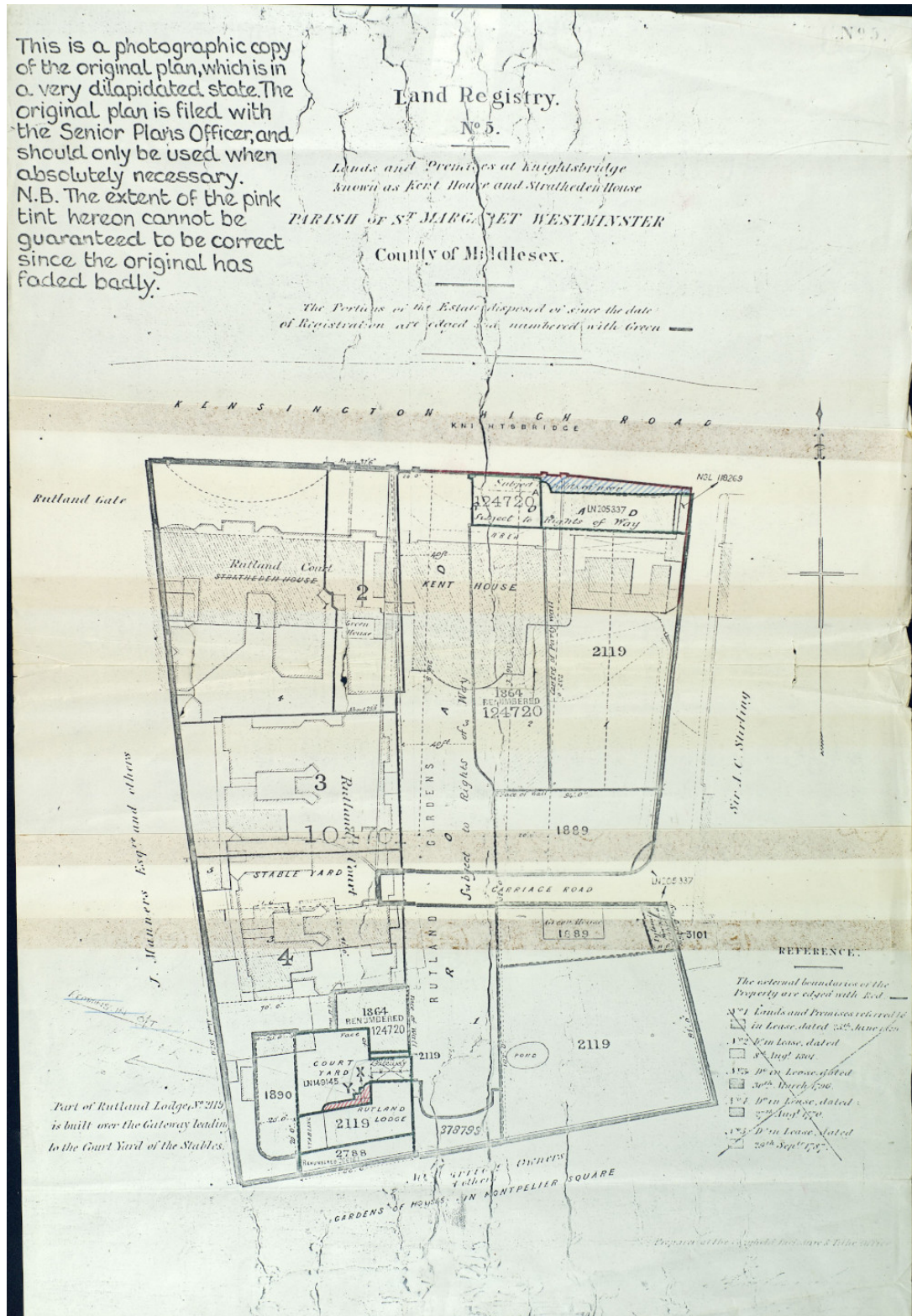
*"The next question is, whether these mischiefs are inseparable from the working are inherent of the Act: and we are clearly of opinion that they are inseparable; because it requires all title to be without blemish."*(Royal Commission 1870, pp xx)

The Report was quick to focus on the deficiencies of the 1862 Act and, in particular, the high burden of proof, which was required both by the Act and the status of a marketable title that had developed in the common law. In particular, it noted that the standards of evidence required for the registration of land were at odds with the market practices of the time and with the issues they sought to preclude rarely being encountered, finding that:

*"Everyone who has had experience in conveyancing knows that although the difficulties of the lands in identifying the parcels seem to be serious and numerous, yet in point of fact they hardly ever arise."*(Royal Commission 1870, pp xxi)

The solution proposed by the Committee was to address the criteria for registration and recommended that the current standards of marketability were too

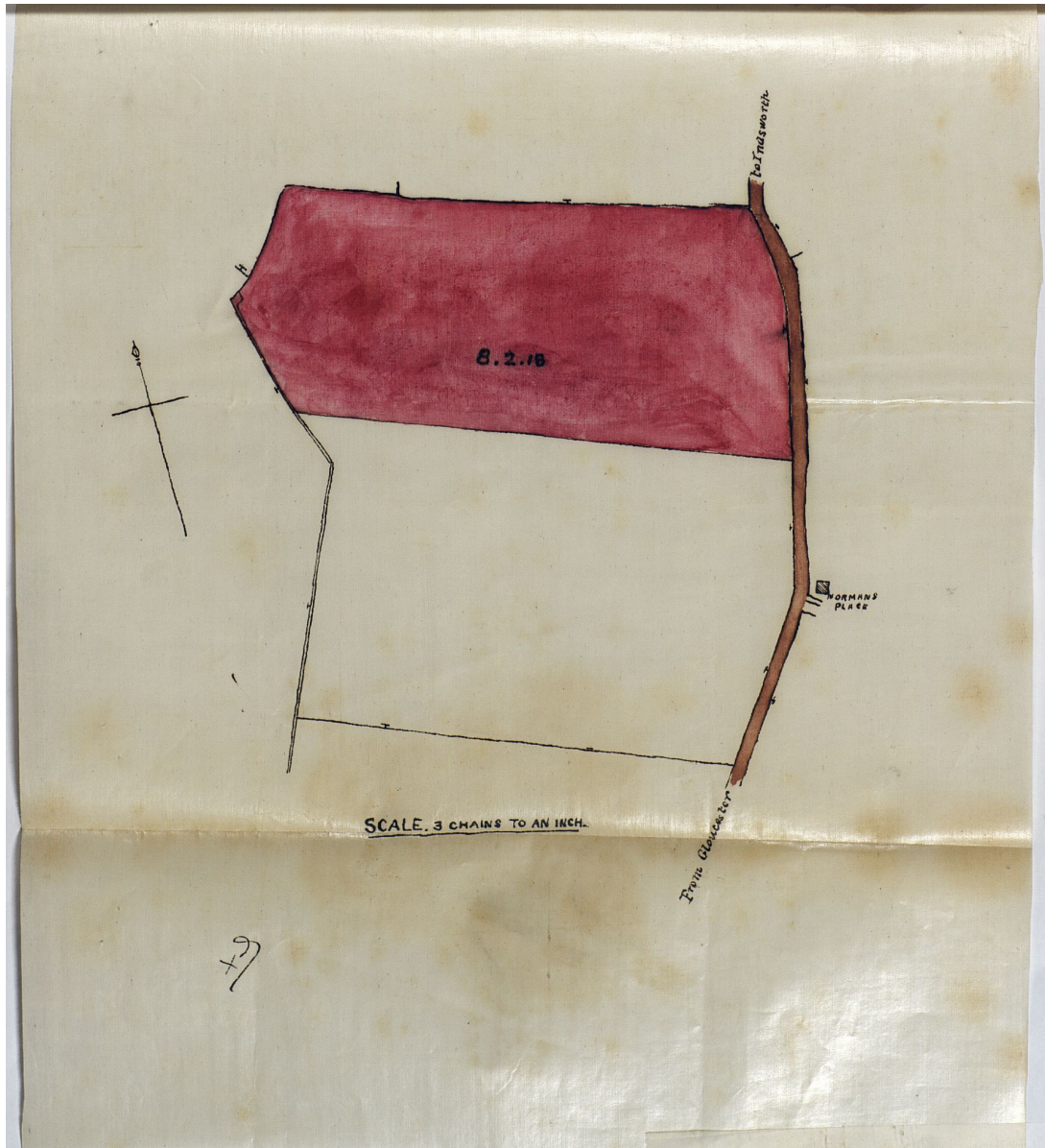
Figure 4.5: Example of a High Detail Map



The map submitted with Title 5 in 1863 known as "Shatheden House" located in St Margret's Parish Westminster.



Figure 4.6: Example of a Low Detail Map



The map submitted with Title 32 in 1866 known as "Normans Piece" located in St Mary's Parish, Gloucester

stringent.

The measures proposed, however, were timid in comparison to the reports of the Committees and Commissions which had proceeded them, as they did not have the scope to address the functioning of real property law, as the Real Property Commission had, upon which the doctrine of marketable title (and of others, such as notice, which made it so important). Equally, they did not invent a system for the registration of land as a whole, as several Royal Commissions and Select Committees in 1846, 1850, 1853 and, most importantly, 1857 had done. Instead, the Committee suggested an easing of the rules in which:

*“Whatever is to be the period of investigation, we think that the registrar might And a title be empowered to accept titles commonly known as good titles, though not technically good though marketable.”*(Royal Commision 1870, pp xxix)

And further:

*“the registrar might accept titles not clearly good, but capable of becoming Plan for so by lapse of time, or the happening of certain events.”*(Royal Commision 1870, pp xxix)

These recommendations from the report were eventually implemented in 1875, following several attempts to Acts in 1870, 1873 & 1874 which were stymied over the inclusion of a compulsion to register transactions — a condition, which once removed allowed them “ to introduce the category of ‘possessory’ alongside the already existing ‘absolute’ title and further standardised how additional information was stored. In effect, it was allowing titles that did not meet the previous burden of proof to be registered, with reforms to be implemented with little controversy (Royal Commission 1911, pp 8).

The legislation of 1875 is significant for the fact that, in the words of Sir Charles Fortescue Brickdale, the Chief Registrar, it had “greatly facilitated registrations, but

had no perceptible effect in increasing their number” (Royal Commission 1911, pp 19). Indeed, in the ten years following the passing of the 1875 act, only 125 new properties were registered with the LR (Anderson 1992, pp 338-339). A lack of operations resulted in the LR producing a net loss of revenue of over £100,000 (Royal Commission 1911, pp 19). The 1875 legislation is telling of the web of relations involved in the process of the development of an infrastructure of land registration, as while it sought to correct the deficiencies of the 1862 bill by widening the scope of the registration, these reforms while addressing the legal-technical problems which the LR faced was unable to entice lawyers and property owners away from the already established system of private conveyancing by contract. As a result, registration was not its ‘own reward’ as the 1857 commission had hoped but was in light of the introduction of ‘possessory titles’ more burdensome, if legally more secure, than traditional conveyancing methods. Therefore, the issue was that while the LR had created some of the elements of infrastructure, a standard for the conveyancing of property, links which built on the established base of land law, and transparency to its use without the widespread and voluntary use of the system of land registration. However, despite having developed these elements, the early LR lacked the embeddedness, professional knowledge or reach and scope need to become a become *the* infrastructure through which conveyancing was facilitated.

These issues were addressed by 1879 Select Committee Report on Land Titles, which reconsidered the standards required in surveys for a title to be granted, revising the rules so to make them less stringent, and consequently further eased the process of registering a property for the first time. The Committee further proposed that while the LR’s title system was a superior innovation for a system of land registration, a different system of deeds registration could be implemented to smooth the transition between the two systems. This proposal demonstrates that the development of a title system was not inevitable. Furthermore, the system of standardisation of the deeds



system remained a possibility for expanding a system of registration that could be applied to the wider property market.

The proposal for a parallel system of deeds shows that while the proposals of title registration had been accepted at a political level, if not as a matter of simple conveyancing, that the lure of a deeds system remained attractive to many at the time. And the continued existence of private conveyancing outside of a system of registration was the primary obstacle to the movement towards comprehensive machinery of registration. Indeed, the Yorkshire deed registries were reformed in 1884 to a system that was far more comprehensive and worked efficiently, showing that while the proposals of the 1829 Royal Commission were not taken up, then switch to a title registration system was not one that was inevitable or a prerequisite for a 'modern' property market (Howell 1999).

Arguments for the creation of a further deeds system, however, did not prevail. Instead, there was a growing recognition that the only way to address the system's shortcomings at the time was to introduce the compulsion to register. Indeed, this was the argument of the Chief Registrar at the time that no system could be devised which would be voluntarily adopted (Royal Commission 1911, pp 10).

Consequently, the political debate switched towards the introduction of compulsory registration and the modification of the register to accommodate the expansion of its role — with the following Chapter addressing the politics that surrounded this shift. The move towards compulsory registration found support in the then Lord Chancellor Lord Herschell, who introduced such a bill in 1893 and 1895, under the argument that doing so was firmly in the public interest. Despite the Liberal government falling before this legislation was passed, the issue found legislative success under the Conservative Lord Chancellor Halsbury, who, following Herschell's proposals, introduced legislation that allowed areas of compulsory registration to be introduced not through successive acts of Parliament but by orders

of the Privy Council (*Land Transfer Act, 1897*).

## Registering London

Despite the reforms enacted following the 1878 Report, the LR's fortunes continued to languish, with first registrations never surpassing more than 105 a year until 1886 (Anderson 1992).<sup>10</sup> The revival of the LR's fortunes came following 1897 *Land Transfer Act* " which allowed the introduction of compulsory registration by order of the Privy Council, with London being the first area to where these powers were exercised in 1897. The 1887 Act further sought to address the question of mapping title to land through the requirement for the use of Ordnance Survey [OS] maps. Which specified that:

*all registered land shall be described in the prescribed manner by means of the ordnance map, together with such further verbal particulars (if any) (Land Transfer Act, 1897)*

The LR subsequently established the Map Department in 1889 to carry out mapping title to land within the LR.

The reasoning behind the choice of London as the first site of compulsory registration under the title system administered by the LR is summed up in six main points by the Chief Registrar Brickdale as:

- (1) *The northern half was already accustomed to registration of deeds, being part of the old county of Middlesex;*

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<sup>10</sup>By this time many of the legal issues plagued the early LR and the 'theory of representation' on which the title system ran had been resolved through successive legal developments. For example, the importance of the 'marketability' of a title had largely been circumscribed by the 1890s through statutory alterations to the Doctrine of Notice. First with the *Land Transfer Act 1874* " which limited the doctrine to the past 40 years only and then the *Conveyancing Act 1881* " which in effect curtailed what could be expected of a 'reasonable enquiry' (See: Lecture IX Maitland, Chaytor, and Whittaker 1916). As a result, both the Doctrine of Marketability and Notice, while still existent in common laws by the turn of the 19th century, did not hold the same place they had at the start, in turn coming to form another part of the *Blackbox* of registration which only needed to be opened in extreme cases by the legal professional involved.

- (2) *the existing Land Registry Office was situated in London, so that there would be no expense or arrangement necessary in getting buildings and locating staff;*
- (3) *leasehold tenure is prevalent, about three leaseholds to one freehold is the general proportion; This tenure is specifically suitable to registration, owing to the comparative safety and simplicity of titles, and numerous new leases constantly being granted, each of which affords an opportunity for starting with a clean sheet as regards title, as in a new country;*
- (4) *the Ordnance Survey map was fairly up to date, having been revised from 1891 to*
- (5) *for a system destined to be the national system the capital seemed to be the proper place to begin, furnishing at the same time the biggest, most valuable, and most conspicuous possible example;*
- (6) *high values, constant changes, and general render it a specially useful training-ground for the future staff, for the whole country.*

(Royal Commision 1909, pp 57)

With the introduction of compulsory registration to London, the work of the Map Department came into its own. The work of the Mapping department was twofold, firstly the maintenance of a 'Public Index Map' and the mapping of individual titles, and the surveying of property. The 'Public Index Map' made use of the recent OS mapping described by Brickdale, which at a scale of 1:2,500 covering 75,000 acres over 570 sheets, provided a detailed map of all land in the compulsory registration within London. On the maps<sup>11</sup> titles that were registered with the LR were marked out with a red boundary and cross-referenced with a title number. The second role of the Map Department was to keep this map up to date, with the 20-year update

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<sup>11</sup>There were actually two maps, one which covered freeholds and the other leaseholds and incorporeal hereditaments.

cycle of the OS lagging far behind changes to the urban fabric of London — the cost of which often fell upon the applicant for whom the further filed plan of the estate would also need to be updated.

The expansion of compulsory registration to London revived the fortunes of the LR, with the effect of dramatically increasing first registrations, which jumped from 17 to 2,954 in 1899, the first year the Act came into force. This increase facilitated a shift to a standard system of mapping and created a body of professional knowledge of the new infrastructure of registration. However, the expansion of the LR work created its issues, first in the scale of work to be undertaken, secondly in the requirements of mapping title to land in London, and thirdly in the way this information was to be stored and organised.

However, the work involved in the extension of compulsory registration to London was something of a surprise to the LR itself. The lack of previous registrations provided little insight into what an extension would require from the Registry, with the estimates of 50-60 applications a day being derived (as it turned out correctly) from registration of the still-functioning — indeed, even thriving — Middlesex registry (Royal Commission 1909, pp 793). An estimate which saw the number of registrations handled a week far surpass those handled by the LR in the year before.

Maintaining and updating the 'Public Index Map' was a further expansion of the LR as an infrastructure. The work of mapping saw a massive expansion of the information held by the LR and, through this work, facilitated the growth of professional knowledge, which in turn supported the infrastructure of registration. While the maps used by the LR were based on those first produced by the OS, their use purpose differed significantly in both the accuracy needed and the frequency with which they had to be updated. Both for the Public Index Map and the detailed 'filed plans' on which boundaries were more accurately delineated and recorded

with each title, which, when necessary, the Map Department would re-survey at the applicant's cost. A difference which while many of the surveyors employed by the LR came from OS, they were found "sufficiently educated to deal with those special duties. [of conveyancing]" (National Archives 1898b). The work of LR surveyors over the course of the early 1900s diverged from the OS, with a new set of skills and professional standards being developed for their work. To the extent that while the Ordnance Survey [OS] had worked closely with Land Judges Court in Ireland on matters similar to those faced by the LR, the OS considered the possibility of long-run cooperation with the growing LR to be unsustainable. This culminated with a separate set of 'Land Registry Series' of more accurate and up to date maps, based on the work of the LR, being published for London (Sweeney and Simson 1967).

The classification and organisation of registrations were further strained by the volume of applications with which the LR had to process after the expansion of compulsory registration. In particular, the Public Index Map of London came to be weighed down by the accumulation of transfers. The system was perfectly adequate for first registration; however, as Tratman explains:

*In a few years, the storage of those of these Filed Plans had become a serious problem. The same property appeared on three sets of plans of different interests in many instances, e.g. Freehold, Leasehold and Sub-Leasehold. Inversely the same plan was made to serve two or three interest in order to relieve the situation.*

(Tratman 1927, pp 145)

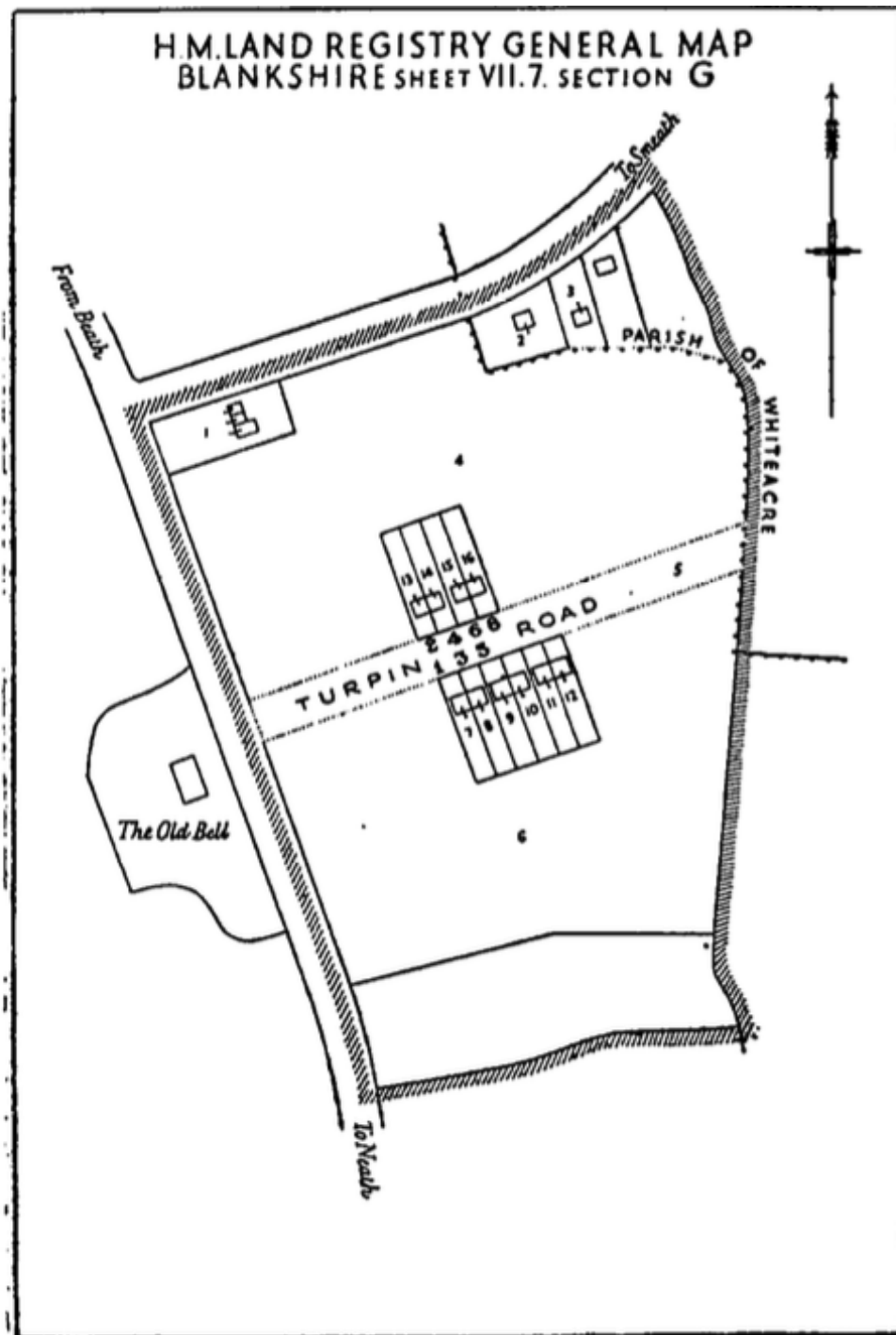
From an administrative point of view, this effectively defeated the point of a title system as one of the major merits of which should have been that only the most recent information on the conveyancing of a title was needed. This system of filing, in effect, created a genealogical deed of the property within the documentation of the LR, which had to be traced through to find the most recent information.

The relation of the Public General Map to the organisation of the register was addressed in 1907 with the development of a set of new plans proposing to organise the storage of the information so that the General Map could be cross-referenced with Parcel Index books. Which, unlike the first iteration of the map, labelled each 'parcel' of land on the map in a unique manner, which would then be cross-referenced to the Parcel Book where detailed information on the piece of land would be organised chronologically, thus fitting with the structuring purpose of a title system.

The move to this system, which developed gradually from its first application to the fast-expanding suburbs within a few years, covered all of the compulsory areas. It was, however, a system that did not last long with further refinements combining to form an 'Index and General Map with Parcels Index'. This new system combined the parcel-based system's improvements with those of a public map detailing which land had been registered. The map itself revealed only which properties, as marked on the general map, had been registered. Any further information was contained in the parcels index, access to which was closely held.

The effect of which was the coalescence of the system of land registration into an information infrastructure in a manner that the LR had not previously achieved over the previous 50 years. Most significantly in the process of coalescence was the expansion in the scope of the LR operations driven by the application of compulsory registration to London. The expansion of compulsory registration gave a new remit LR which firmly established and embedded the title system. Furthermore, the compulsion to register ensured that legal professionals working with land in the Capital were forced to conveyance property through the infrastructure of land registration. When combined with the importance of London as the most active and valuable property market in the UK, it ensured the success of the LR in cementing its role as the infrastructure through which the property market operated.

Figure 4.7: Example of the schema for General Map with Parcels Index



Parcel numbers in small black figures.  
House numbers in heavy black figures.  
Parish boundaries thus .....

Figure 4.8: Example of the schema for General Map with Parcels Index

General Map Parcels Index BLANKSHIRE Sheet VII.7. Section G			
PARCEL Nos	TITLE Nos.		REMARKS
	FREEHOLD	LEASEHOLD	
1	031		
2		0021	<i>Caution 0142 against Freehold</i>
3			<i>Priority Notice 01220 against Freehold</i>
4	F.P.006		
5	F.P.006		
6	F.P.006		
7	011		
8	012		
9	013	026	
10	F.P.006		
11	F.P.006		
12	F.P.006		
13	F.P.006		
14	F.P.006		
15	F.P.006		
16	F.P.006		

& Figure: 4.7: From Tratman (1927, pp 126) an article written for The Law Journal by the Deputy Chief Surveyor who explaining the operation of the system to an audience of Conveyancing professionals.



In doing so, the standardisation of how land was owned, evidenced and transferred was completed. With the development of the Map Department, first building on and then surpassing the OS maps, resolving the gap of mapping title to land. Marrying the 'theory of representation' which had created the legal *Blackbox* within which property in the title system was contained with a standardised way, in which the spatial extent of a title was represented. The expansion of its scope and embeddedness gave rise to the development of a new professional community of practice, for both uses of the title system for the solicitors who were now forced to interact with its infrastructure and those within the LR Map Department surveyed land for title registration.

## Conclusion

The 1925 Land Registration Act marks the end of the coalescence of land registration into an information infrastructure for the research presented in this Chapter. The reasons for which are twofold. Firstly, by 1925 the infrastructure of land registration had come to function as comprehensive machinery for property conveyancing. It had developed by competing with private conveyancing by deeds, to which it was ancillary for over 30 years. By 1925 it was a system through which all the property that was transacted in London passed through. Secondly, the series of land law reform acts passed in 1925 mark the start of the 'modern' foundations of English land law. These laws firmly cemented the role of land registration both at the legal principles and the socio-technical administration of registration.

The Land Registration Act was the main Act passed in 1925 but was one of many Acts passed pertaining to land law in this year, with the Settled Land Act 1925, the Trustee Act 1925, the Law of Property Act 1925, the Land Charges Act, the Administration of Estates Act 1925 reforming the basis of English land law. In many cases, the acts did not pass new legislation *per se* but brought together many pieces

of previous legislation into a single cohesive document. Together, these acts overhauled and consolidated English land law. The effect was to create a new and clear basis for land law, creating a legal 'curtain' behind which it would not be necessary for practitioners to venture (Sparkes 1988). To this end, the combined effects of the Acts were conservative in their treatment of land law, the approach of creating a 'curtain' leaving many of the vestiges of the feudal system to wither away, rather than overhauling the whole system.

For the LR, the 1925 Land Registration Act further updated and embedded the system that had developed since the expansion of compulsory registration to London into a statutory footing and paved the way for expanding compulsory registration to the rest of England and Wales. It was the foundational act of the system which prevailed throughout the rest of the 20th century, with the 2002 Land Registration being the next major piece of legislation to affect land registration.

The infrastructure of land registration established by 1925 continues to be the basis of the system of land registration, which persists to this day. Meaning that Dworkin was able to state that:

*"Whether for better or worse, probably the former, the transfer of land is ceasing to look like a legal operation and is becoming a simple administrative operation."*

(Dworkin 1961)

The route to the administrative organisation of land registration was — as this Chapter has shown — not one which was simple, straightforward, or inevitable. Rather, establishing a system of land registration required the transformation of how land was owned, evidenced, and transferred. Moving from one which was based on private conveyancing and property deeds to an infrastructure through which the trade and ownership of property were able to flow unimpeded by the complexities of English land law.

The development took place over a long-arch historical trajectory, with the research presented in this Chapter having covered 161 years, from establishing the Registries of West Riding and Middlesex until the Land Registration Act of 1925. The closing vantage of 1925 sees the entanglements of the infrastructure of land registration as “stretching years into the past and prospecting into a future of decades” (Ribes and Lee 2010, pp 239) In this development, the obstacles were both legal and socio-technical, with the coalescence of the registration infrastructure dependent on innovations in both of these areas and the interaction between the two.

The foundational element in this regard was the work of Wilson in the development of his ‘theory of representation’, which arose in reaction to both the failures of the early Registries in Middlesex and West Riding and the extensive proposals of the Real Property Commission. The innovation of Wilson’s work was in proposing the title as the ‘atom’ is crucial to understanding the organisational form which the LR took on its founding in 1862. With this theoretical innovation being key to understanding how the process of conveyancing became *Blackboxed*.

The legal innovation of the ‘atom’, which formed the basis of the title system of registration, was not the only innovation needed for the development of the infrastructure of land registration. Rather, as the case of the mapping of land to title shows, the legal innovations had to be aligned to the socio-material way in which the underlying property itself was represented with the gradual harmonisation of these features taking place in the decades following the founding of the LR. To this end, the *Blackbox* of registration was only closed once the ‘gap’ between the legal and socio-material form of land registration was closed.

The closure of this gap and the growth of the system of land registration into an infrastructure came as a result of the implementation of compulsory registration to cover all property transactions in London. It was an expansion not only of the work undertaken by the LR but also of the dimensions of land registration as

infrastructure. This process entailed the reach, scope and embeddedness of the system of land registration growing alongside a widening body of professional knowledge and interaction with the system. The development of professional legal knowledge was outside of the control of the LR itself, with there being an ongoing tension between the interests of the legal profession, their landowning clients, and the goals of land registration.

The development of land registration as an information infrastructure through which property came to be owned, evidenced and transferred was thus a process of standardisation. It encompassed all aspects of this process, from the standardisation of the legal form of property ownership, the socio-material link between the form of ownership and the underlying property, how this was administratively organised. It was, thus, one which cohered over the long-arch historical period, with the assemblage of its constituent parts have become — in their relation to each other — a fully formed infrastructure of land registration by the Land Registration Act of 1925.

The formation of the information infrastructure of land registration and the *Blackboxing* of registration itself is important for understanding the housing market as it exists today. It is as a result of the infrastructure of land registration and the *Blackboxing* of the legal complexity which underpins property ownership that the exchange of property can function as a market. These structures make the real property appear as good and can be easily and freely exchanged rather than a distinct class of property with a genealogical history with its own set of incumbrances and risks. Furthermore, this history is crucial to understanding how and why the land registry functions today and consequently how the structure and data of the land registry can be used to research the housing market, the distribution of wealth, and elites.

What does this mean to understand the system of land registration today, to be

developed in the subsequent Chapters? Firstly, that system of land registration as an information infrastructure is not confined to the institutional bounds of the LR. Rather, to become the infrastructure of today required a far wider scope than that of the LR itself, encompassing the reform of English land law as a whole, the development of administrative and professional competencies, the mapping and standardised representation of land and the assemblage of these diverse elements towards a system of land registration. Secondly, the foundational component around which this infrastructure was developed was the 'atom' of individual title to a property. This feature remains the kernel for the ownership, evidencing and transferring all (registered) property in England and Wales today. Thirdly, that this kernel was created, and still functions as, a *Blackbox* within which the complexity of English land law is contained. The effect of which is to create a standardised legal exterior that the end-user need not peer beneath. Fourthly, there has always been a tension between the goals of land registration and those of lawyers, both in terms of their own professional interests and those of their clients, which continues to this day. This theme is explored further in the following Chapter, which looks at the interplay between land law and the preservation of elite power and Chapter 8, in which this research approaches the use of offshore ownership structures as a breakdown in the infrastructure of registration. Finally, the development of the information infrastructure of land registration was created to function as and continues to operate as machinery for the conveyancing of property.

# Chapter 5 — Elite Power, Land Law and the *Blackbox* of Registration

## Introduction

This Chapter looks at the development of land registration in the context of who owned land, how land was owned and how that ownership was defended. Therefore, the research in this Chapter covers a long arch historical span as it seeks to illustrate the complex interrelation between land law and elite power and the impact this had on the formation of the infrastructure of land registration. It argues that land law's importance as a continued mechanism of elite power cannot be overlooked in the development of the information infrastructure of land registration.

The research presented in this Chapter, in building on the findings of the previous Chapter, asks:

“What effect did real estate law and the power of the elite have on the development of land registration as an information infrastructure?”

The research presented in this Chapter uses secondary historical sources to answer this question, reading them through a sociological lens that seeks to use this history to understand the information infrastructure of contemporary land registration. The motivation for developing this historical analysis was the questions raised by

research I was conducting on the contemporary LR; therefore, although this Thesis is presented in chronological order, this Chapter reflects the final stages of my research process. To address the long historical time span required of this question, the research in this Chapter looks at the opening in the *Blackbox* of registration through the persistence of the distinction between freehold and leasehold land. This distinction continues to be part of the everyday operation of the contemporary land registry, but one which has its origins in medieval feudalism. It is a distinction that contains within it a set of power relations that have become embedded within the infrastructure of land registration long after manorialism from which it stems has lost its relevance.

This Chapter, therefore, starts by addressing the distinction between freehold and leasehold land maintained by the LR. It is a distinction that provides an opening into the *Blackbox* of registration, from which the complexity of land law and the power relations embedded within it can be explored. Furthermore, it allows the tension between the purpose of land registration and the interest of the legal profession and the landowners on whose behalf they worked. The time span considered in answering this question spans from the medieval origins of English land law to its position in the work of the LR today. The research presented in this Chapter is split into three sections to cover such a time span, with each building towards an understanding of the complex interrelation between elite power, land law, and land registration.

However, this Chapter does not aim to provide a history of land registration but to use this history as a means of opening up the *Blackbox* registration and the power relations which are contained within it and which drove its formation. This Chapter takes a different approach, picking an element of legal complexity, which is *Blackboxed* by the 'atom' of registration presented in the last Chapter and using this as the starting point for exploring the relation between elite power and land

law.

The starting point for opening up the *Blackbox* is with a recent definition of the role of the LR and its statutory functions published in a recently published annual report.

As the LR states:

*Our principal function is to keep a register of title to freehold and leasehold land and charges throughout England and Wales and to record dealings with land once it is registered. On behalf of the Crown we guarantee title to registered estates and interests in land.*

*Our functions are entirely statutory. We have no prerogative powers. The Land Registration Act 2002 empowers us to deal with “the business of registration under this Act” and is our primary governing statute. (Land Registry 2015)*

This quote provides a concise and clear overview of what it is that the modern LR does, but hiding within it are several caveats that hint towards the complexity which lies underneath the *Blackbox* of registration.

The research presented in this Chapter uses this definition as the starting point for opening up the *Blackbox* of the information infrastructure from a different angle. It does so by picking up distinctions made within this definition, tracing it back to medieval land law, and then following this theme forwards as a point of enquiry into the interconnections between elite power, land law and legal complexity.

The first section looks at the origins of the distinction between freehold and leasehold land. This section is split into two further subsections, each of which approaches this split in two different time periods, each highlighting a different aspect of the relation between elite power, land ownership and land law. The first sub-section starts with the medieval origins of the bifurcation of ownership in English land law and the power relation, which is facilitated through copyhold ownership. The second sub-



section looks at the origins of the terms freehold and leasehold ownership through the attempted reforms and establishment of a register of land under Henry VIII. This section looks at the English land tax as an example of the 'elite settlement' between the English state and the landowning aristocracy.

The second section moves onto the 19th century as the key century for land registration and the zenith of elite aristocratic power through land ownership. This section is further split into two subsections, with each section examining a different aspect of elite power and the system of landed estates in the 19th century. The first section does so by examining the complexity achieved in English land law by the start of the 19th century. The example of 'the doctrine of equity redemption' demonstrates how it functioned to enforce and preserve elite power embedded in the estates' system. The second subsection then moves on to the highly concentrated distribution of land ownership in the 19th century. They were raising this concentration of ownership in the context of what was known as the 'English Land Question' of how the system of landed estates could be abolished. Although this question dominated the politics of the day, this section will discuss how the system of landed estates remained largely unchanged.

The final section of this Chapter considers the reform of land law and the politics of aristocracy concerning the development of the infrastructure of land registration. This section is split into two sub-section, each addressing different elements of the relation to land law and elite power. The first focuses on the reforms to land law as a whole undertaken by the Real Property Commission at the start of the 19th century. While the second address the founding of the LR as part of the end of the 'English Land Question' signalled by the decline of aristocratic power.

## Opening the *Blackbox* of Land Registration

This Chapter takes a historical approach to understand the development of the relations between elite power through land ownership and land law in England. While the infrastructure of land registration may be over 150 years old, the foundations on which it was built have even longer roots. This Chapter, therefore, develop a sociological understanding of the ‘installed base’ and ‘conventions of practice’ from which the infrastructure of land registration was built. To this end, the question of how far back in history such an approach goes is further dependent upon the research question that is being asked of these categories. Indeed, Cooke (2003) notes, tracing back the history of land registration to its genesis as a social practice and as a matter of law is a game for historians — one which can be easily be stretched back to at least the Egyptians. For this Chapter, the limits of this question are derived from the LR definition of its role, that of ‘once registered’ and the distinction between freehold and leasehold land.

The stipulation of “once registered” within the definition of the LR’s work requires greater explanation. For, this stipulation refers to the system of Title Registration which the LR operates and is a form of system that is crucial to understanding both the development LR and the wider land registration system. Title Registration is derivative of the legal term title used to denote the owners *entitlement* to an estate in the land against the of other claims to the ownership of that land. Thus, a Title Registration system is one in which these claims to real property<sup>1</sup> are registered with the state and claims against the ownership of the property can be verified against the register kept by the state. However, the important detail of how this system works is best illustrated in comparison with a system of Deeds Registration.

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<sup>1</sup>The term ‘real estate’ in its current usage derived from early English law when the term ‘real’ denoted how a court could rule on the ownership of property, as Harpum, Bridge, and Dixon 2012, pp 7, explain, “*property was deemed real if the courts would restore to a dispossessed owner the thing itself ... In consequence, a choice was made between ‘real property’, which could be specifically recovered, and personal property, which could not.*”

In a system of Deed Registration, the ‘deeds’ to a property are evidencing documents affecting the ownership of the property, in which ownership can thus be traced back through successive deeds. By contrast, a system of Title Registration does not rely on the ability to present genealogical evidence; instead only includes the current title. As such, within a system of Title Registration, the act of registration itself is *dispositive* of the entitlement of ownership. A difference which can be characterized “not [as] a system of registration of title but a system of title by registration”(Barwick 1971).<sup>2</sup>

In both a system of Title by Deed and of Title by Registration, the materiality of the documents themselves is crucial to the evidencing of ownership. In both cases, the proof of ownership is divorced from the use and occupation of the real property in question and is instead located in the veracity of the documents themselves. However, as ‘once registered’ implies, the encompassing nature of this system, where all claims to ownership can be addressed through inspecting the title, is far from complete. Indeed, at the time the quoted report was written, 87.9% of land in England and Wales had been registered with the LR.<sup>3</sup>

The need to mention the distinction between freehold and leasehold properties in such a simple summary indicates the level of complexity involved in the actual registration of land and property. As Dixon (2016) points out, there are “various definitions” of leasehold, “both in statute and in common law”. Although, at its most basic level, leasehold ownership is an arrangement in which “two or more

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<sup>2</sup>It is interesting to note that systems of Title Registration are often referred to as the ‘Torrens System’, drawing on the instigator of the first such system in South Australia in 1858, Sir Robert Torrens. As O’Conner, Pamela (2003) notes, English lawyers and scholars generally do not apply this term to the English system, despite the many similarities between such systems, often implying a greater distinction between the development of law in the metropole and colonial ‘common law’ periphery than actually exists when approached in comparative analysis.

<sup>3</sup>In Scotland, land registration is administered by the Registers of Scotland owing to the differing Scottish legal tradition and political devolution. As a result, the laws passed founding the LR, the 1925 Property Acts, and the extension of compulsory registration in the 2002 Land Registration Act do not apply to land owned in Scotland. As a result, there is not, nor has there ever been, a compulsion to register land in Scotland. Consequently, 74% of land in Scotland remains unregistered (Registers of Scotland 2014). For more on Scottish land ownership, underpinning legal tradition, and the secrecy of estate ownership, see the work of Scottish land campaigner and MSP Wightman and Hunter (1997).

people enjoy the benefits of owning an estate in the same piece of land at the same time". Even at the most basic level, describing these differences draws attention to the definitional complexities involved in recording who owns a piece of land.

The distinctions present in leasehold and freehold form the entry point for this analysis into the relationship between elite power, land law and legal complexity. For, while this distinction is one which the current infrastructure seeks to minimize, in an effort to make the conveyancing of property as easy as possible for today's end-user, it nonetheless cannot be ignored. And, it is one beneath which there is a tangled web of legal and socio-technical assemblages which the *Blackbox* of land registration endeavours to conceal.

To this end, the distinction between freehold and leasehold land acts as the chink in the armour of the LR's "simple purpose to maintain [the] clarity and security in property ownership and secured lending and to support swift transactions" (Land Registry 2019, pp 4). The use of the *Blackbox* in this context is to explicitly draw on both the origins of the term and its adoption by Latour which he describes as:

The word *Blackbox* is used by cyberneticians whenever a piece of machinery or set of commands is too complex. In its place, they draw a little box about which they need to know nothing but the input and output. (Latour 2000, pp 681)

In functioning as a 'machinery of conveyancing', the LR treats transactions in the same manner, working only with the exterior legal form of the title, noting only the distinction between freehold and leasehold land and not the complexity which may lie behind these legal distinctions.

However, that this legal complexity has been *Blackboxed* from the infrastructure of registration is a fact that the LR is aware of. The LR itself states that the 'simplicity and clarity' of contemporary transactions must coexist with the need to "remain expert in

all aspects of property and land registration law and process. [As] the medieval roots of our system, combined with the limitless variety of ways people put land rights together, makes for a highly complex system. We have to remain experts in all those dimensions.” (Land Registry 2019, pp 21). It is to the origins of this system and the complexity which developed from it that this research now turns.

## **Land Law and Power in England Before 18th Century**

### **The Dispositive of Copyhold**

The origins of the leasehold basis in English common law can be traced back to the widespread use of leases to at least the thirteenth century (Whittle 2008) — a time before real property of land itself had become established in common law. To start so far back in time is to explore one of the legal bases upon which contemporary land registration is founded; a foundation that extends to the legal development of land ownership.

The system of copyhold leases, far from being a legal curio of the Middle Ages, has had continued relevancy in English land law, having been cited as a key legal context during the debates on land law reform and the land registration in the 19th century (Anderson 1992, pp 61). It remained in statute until their abolition in the foundational act of modern land law, the 1925 Law of Property Act.<sup>4</sup> As Cooke notes in 2003 (pp; 17) it is “still possible occasionally to find traces of [copyhold] in unregistered titles”. This is to stress that while copyhold leases are not an active part of the system of land registration today, they are part of the historical lineage of how this system developed, with such features being integral to shaping how today’s information

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<sup>4</sup>It should be noted that copyhold, was only one of a variety of means through which land was owned and leased during this period, and is used as an example here both because of its enduring relevancy in law and for being a characteristic form of land ownership throughout this long historical time-span. The continued relevancy of which is evidenced as recently as 2015 in the Justice Committee report into the current status of a Lord’s manorial rights in ‘enfranchised’ copyhold land (House of Commons - Justice Committee 2015)

infrastructure came to be.

The development of the copyhold system is further worth highlighting in the history of land registration as it functions as a legal mechanism of elite power and which raises the complexity of the law around what constitutes 'ownership'.<sup>5</sup> The copyhold system provides a starting point to open up this question, both historically, and theoretically.

In a copyhold system, the 'ownership' of land is split between the 'true' owner of the land and the copyholder who has entered into a contract which granted them ownership of that land for a fixed period of time.<sup>6</sup> What is crucial, however, is that there is *not* a hierarchy within this split of ownership- with neither party having an overriding interest in the land in question during the period of copyholding. Indeed, within such contracts, the obligations and rights were often detailed and complex but crucially were bi-directional. This directionality was an important factor in developing the system of copyholding as a whole, as it functioned to enable a system of land leasing that was compatible with feudal manorialism. The economic needs of a growing agrarian economy could be accommodated within a system of obligation and ancestral claims to land use.

The significance of the development of copyhold leases is thus twofold. Firstly, it was important in establishing the enduring distinction within the legal concept of ownership which allowed multiple parties to own an estate in the same piece of land at the same time. Moreover, rights and obligations were bi-directional but

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<sup>5</sup>As this is a sociological account of the history of land registration, the terms property, land and houses are used interchangeably throughout this Thesis. These terms are used in their common usage to avoid confusion and make the text clearer and more cohesive. However, it should be noted that technically what is often being discussed when these terms are deployed is 'real estate'. A term which derives from the legal language of the middle ages to distinguish property which was

<sup>6</sup>It should be noted that as with the common use of the term 'property' in this Chapter, there are subtle legal distinctions in the use of such language in relation to leasehold properties — a distinction which is passed over in favour of their common usage, as even during in their historical context it is a distinction which would only be apparent to those already stepped in conveyancing. In that, the distinction between freehold and leasehold extends to what can be called 'real estate'. With leaseholds technically being estates in chalet or personal property, and therefore not fitting within the definition of real property. For a clear historical overview of these distinctions, see (Atkinson 1839)

which, in time, would revert overriding ownership of the Lord. It is this precedent from which the present-day distinction between leasehold and freehold can be traced back too. Secondly, in the history of land registration, the leasing of land under the copyhold system required the registration of the contract which had been entered into. The granting of copyhold leases was recorded in the Rolls of the Lord of the Manor from whom the tenant was renting. As such, this was an early form of a localised register of dealings in land, one which the label of 'dispositive registration' (Cooke 2003) can be applied. This fact was not overlooked by campaigners for a system of land registration in the 19th Century, with the copyhold system being cited and discussed by them as a key legal precedent, one which in turn can be said to have helped shape the establishment of the LR itself (Anderson 1992). Moreover, it is a form of centralised dispositive registration which was used not in the exercise of state power and the administration of taxation but the private facilitation of agrarian economic growth.

The use of copyhold leases at this time is contrasted against that of freehold ownership of land. A contrast which is of particular relevance for how land registration in England developed, as these two systems of ownership came to predominate as the feudal system slowly disintegrated. Rather than operating on a system of registration under the auspices of a feudal Lord, freeholders owned the land directly — with such claims being provable through their ownership of the 'deeds' to that land. Yet, while the 'deeds' represented a claim to ownership of land outside the confines of the feudal system, they also mirrored how this ownership was demonstrated. As Cooke explains:

*" 'the deeds' of a property [thus] become an almost sacred sign of ownership; title is proved genealogically by the production of documents that trace ownership back from the present, showing a chain of entitlement made up of legitimate links"*  
(Cooke 2003, pp 5)

Furthermore, as Whittle (2008) notes, very few freeholders had little connection to the land that they owned, with the majority of such properties being owned by absentee landlords from the gentry and merchants from market towns who then leased the land to farmers in much the same manner as Manorial estates. As a result, for tenant farmers, there was little practical distinction between freehold and copyhold land. The distinction between copyhold and freehold was important mostly for how claims of ownership over land was evidenced and transferred. Crucially, unlike the copyhold system, there was no register of ownership, with claims to land needing to be evidenced by the owner, either through genealogical claims to title, either through blood or by legal documentation.

Between these three forms of land ownership during the 12th to 15th century period, approximately 25-35% of land was leased under the copyhold system, 28-37% was held in freehold ownership, with around 40% remaining part of the customary feudal system (Whittle 2008, source estimates: Campbell 2000, 2005; Kosminsky and Hilton 1956). The competing forms of land ownership of the time gave been of particular interest to historians and sociologists studying the development of capitalism, with specific reference to how rising rents and contrasting ownership structures fuelled rising productivity and capital concentration (See: Aston and Philpin 1987; Brenner 1976; Tawney 1912). Of significance to the history of land, registration was that this created three different forms of owning and evidencing land claims; and while the feudal system of land ownership eventually began to diminish, both copyhold and freehold forms of ownership became well established in common law.

Notably, both the freehold and copyhold systems were 'private' in their operation, either between the Lord and their tenets or as a transaction between two individuals. Unlike the feudal system in which the monarch granted lands, both these forms of evidencing ownership relied on the state only to protect private property and enforce a contract. Although the extent to which this is comparable to how these concepts



are understood in their modern form is a point of debate (For example see: Maitland 1911a).

Therefore, the development of copyhold speaks to both the elements of what constitutes the ownership of property, how ownership was evidenced and of the power relation contained within the legal form. The origins of leasehold, in which legally in which to parties can 'own' the same piece of land simultaneously, derived from the copyhold system. Furthermore, this was a system in which such claims to ownership, either that of copyhold or freehold, needed to be materially evidence separate from the use and occupation of the land. The recording of copyhold leases in manorial roles was done to the prerogative of elite ownership.

To this end, the origins of land law were tied up in the preservation of elite power. For copyhold, this was through the bifurcation of ownership, which accommodated both the needs of a growing agrarian economy and the preservation of estates by revising ownership to manorial lords. A form in which the ownership of freehold through deeds mirrored the evidencing of ownership through a legal rather than a hereditary genealogy. Therefore the legal complexity of the system and enforcement of land law contorted to ensure that land ownership continued as the means and expression of elite power with the commercial needs of a growing agrarian economy.

### **Legal Complexity and Elite Power**

The system of landed estates developed in England has its roots in the feudal system, and the power and persistence of this system in one form or another have extended well into the 20th century. As the Historian Jones (2018) candidly states:

*"The principle of estate ownership survived drastic political and economic upheavals, such as the Norman Conquest, the Wars of the Roses, the Civil Wars, the depressions of the late nineteenth and early twentieth centuries and two world wars. Far-reaching though some of these shifts were, ultimately, they did*

*little more than replace or revive the dominant occupying personnel. Change seldom threatened, much less overturned, the organising of landholding in the form of estates: the new wine was always in much the same old bottles. More revolutionary threats, such as land nationalisation or the establishment of a free peasantry, were discussed at times but never came close to fruition.”* (Jones 2018)

This research seeks to address the question: how did the estate system, the power of aristocratic landlords, and land law interact with the development of land registration? Moreover, how did the reforms of land law and later land registration continue to allow the ‘new wine’ of reform and social flux to be fit within the ‘old bottles’ of the estate system? This subsection explores these themes by focusing on a critical period of reform in English land law during the reign of Henry VIII and the long-running English Land Tax as an example of a new form of state administration that fit seamlessly within the interests of the estate system.

A key moment in understanding these developments, their interaction and inaction, is how the system of feudal land ownership began to unravel during the reign of Henry VIII. The reforms he promoted sought to insert the state into the heart of land ownership, with the reforms enacted during this time have a sustained impact on the development of English law and the system of land ownership. The impetus for these reforms was the attempted expansion of the state’s and, by extension, the Monarch’s power and ability to collect revenue.<sup>7</sup> They were, however, far from successful with their outcome revealing the power of elites and the estates system to protect their own through the use of complex legal manoeuvres.

The two Acts which directly addressed land law were the Statute of Uses and the Statute of Enrolments, both passed in 1536. The Statute of Uses sought to abolish the

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<sup>7</sup> As Simpson (1986) notes these reforms had the legal effect of preventing “*frauds on private persons (in which Henry eight was probably not very interested) and evasion of feudal incidents (and which certainly was)*” both of which were “*dependent upon the separation of legal title from beneficial enjoyment*”.

use of 'Uses' by the aristocracy as a means of ensuring the feudal landholdings were not lost or divided during primogeniture succession. The act sought to abolish much of the prior system of feudal landholding through the abolition of Uses and opened the way for the establishment of true 'real property' as it is understood in modern law (Digby 1892). However, while the act abolished Uses in name, it did little to curb their actual use. 'Uses' in effect were quickly re-invented by lawyers of the time into a form that we would now identify as 'Trusts' (Langbein 1995).

Similarly, the Statute of Enrolments, which sought to create a nationwide register of dealings in freehold land — with the intention of collecting revenue from such transactions — was also quickly evaded. In this case, through the "inventive use of leases" (Cooke 2003, pp, 18), wherein terms were granted such that they were effectively a full transfer of the underlying land for the lifetime of the purchaser — for example, a 999-year lease.<sup>8</sup> This evasion effectively gifted into modern English land law the distinction between freehold and effective full ownership through very long-term leaseholds. A distinction that builds on the bifurcation of ownership of copyholding and one which endures into the present, as the starting definition of the LR's function at the beginning of this Chapter clarifies. Despite its failure, Cooke (2003) sees the Statute of Enrolments as a "startlingly modern endeavour", in that it sought to ensure that "conveyancing did not happen without registration". As a result of these failures, the centralised record of transactions that the statute envisaged quickly became irrelevant and ceased to be kept not long after its inception (Simpson 1986).<sup>9</sup>

Despite the failure of both the Statute of Uses and Enrolments, in fulfilling the purpose for which they had been drafted, they both mark an important moment in

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<sup>8</sup>Which had settled to 99-year leases as the standard length of a commercial or residential contract for those engaging using and trading property outside of the system of country estates by the 19th century, although different customs continued across different locals and estates across the country (Simpson 1986, pp 252)

<sup>9</sup>With the evasions that had been crafted by Tudor lawyers being formally recognised under James I by the courts as "*validity of a transfer of land by lease and release without entry and enrollment was recognised by the court*" (Bordwell 1921)

the development of English land law (For an exhaustive account of the failures, as well as unintended consequences of both statutes, see: Bordwell 1926). In particular, the statute of Uses has had a profound impact on the development of trusts, as we understand them in their modern form and the doctrine of equitable claims on property. The statute of Enrolments, by contrast, quickly slipped into the realm of legal and statutory irrelevance, but its failure is symbolic of the enduring relationship between the power of the state, landowners, and legal practice.

The Reforms attempted under Henry VIII are important to the development of land registration in England. Firstly, the first attempt at implementing a statewide system for collecting property transaction information demonstrates the complexities of establishing such a system. Secondly, it demonstrates the importance of land law as a mechanism of elite power. The evasions of Tudor lawyers were a challenge to the intentions of the Monarch by the landed interest. Henry VIII lost, conceding his power to collect revenue to an elite who sought to resist impositions on their ability to control and consolidate their landed estates. Thirdly, it highlights the complexity and importance of land law. The ability to implement the intended reforms was undermined by both the enforcement of new statutes and the multitude of complexities that had developed in the conveyancing process and through which they could be evaded. It is thus an episode which demonstrates the entrenchment of the status quo of the centralising power of a register of transactions was not solely a matter of law, but of whose interest the law protected, with even a monarch as powerful as Henry VIII conceding to aristocratic maintenance of the system of landed estates.

To understand the power of the aristocracy in England at this time, it is necessary to look beyond the confines of the development of English land law to the wider international context in which these changes were taking place. As Cooke (2003) notes, "land registration cannot be regarded as a domestic matter. Its roots are

centuries old, but also immensely wide-ranging” and must therefore always be considered in a comparative context.<sup>10</sup> And, while the development of a fully comparative angle to the development of land registration is beyond the scope of the research presented here, a brief comparison is sufficient to demonstrate the peculiarities of the practices in England at this time.

The divergence of how the English system developed (or rather, enabled the status quo to endure in a rapidly evolving social context) is apparent when contrasted against the backdrop of developments that were taking place across Europe. Where land registration and the mapping of land ownership — that is to say, cadastral mapping — were becoming an important staging post in the emergence of the modern centralised, bureaucratic state. A shift which is succinctly summed up by Kain and Baigent:

*Beginning in the sixteenth and seventeenth centuries, there was a fundamental shift in the development of cadastral maps from their use as inventories of private land towards their use by public authorities and ultimately state governments. They were initially used as instruments to effect specific measures, notably tax reform, but ultimately became more general tools for the accurate recording of information relating to individual parcels of land. By the nineteenth century, the cadastral map was a widespread and widely valued instrument of government land management is well attested. What is less well known is that in the early modern period, the cadastral map was a highly contentious instrument for the extension and consolidation of power, not just of the propertied individual but of the nation-state and the capitalist system which underlies it. (Kain and Baigent 1992, pp 9)*

In contrast to the developments in Europe, in England, it is the failure of the Statue

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<sup>10</sup>Indeed, the comparative context of land law was considered as part of the process of reform in England with the (Royal Commision 1857, Appendix A, pp 71, ) making detailed international comparisons.

of Enrolments which represents the last attempt to marry the registration of land and cadastral mapping in England until the modern period.

Indeed, in seeking to understand the development of land registration in England into an information infrastructure of today, one which is broadly comparable to that of other European countries (See : Berlee 2018), it is paradoxically important what did not happen and why-one which can be explored through the implementation of the English land tax. The tax is exemplary of a form of 'elite settlement', in which a functional system of land taxation operated without reliance on the infrastructural innovations of forms of standardisation, classification or quantification. The 'elite settlement' of the English Land Tax is the 'old wine in new bottles' of Jones's characterisation of the endurance of the system of landed estates. It moves beyond the theorisation of 'elite settlements' by political sociologists who have focused primarily on the moment of resolution between two previously warring elites — with research on this matter having used the English 'glorious revolution' as the primary historical example (Burton and Higley 1987; Higley 2008). What is of interest to Jones, and the research presented in this Chapter, is not the moment of resolution itself but the hegemonic social order which endured after the end of the English revolution.

This peculiarity of the English land tax is highlighted by the fact that despite there being no centralised cadastral map of land ownership in England or even a system of registration of transactions in land, the tax was successfully levied from 1692 onwards and was only removed from the statute in the 1963 Finance Act. The history of this tax, its efficacy and fiscal implications have been debated in depth by economic historians (See: Beckett 1985; Ginter 1992; Peirpoint 2018). What distinguishes this tax, however, is how it was enforced and collected. In particular, the English Land Tax stands in contrast to sociological and new institutional economic models of state development wherein "War made the state and the state

made war”(Tilly 1975, pp 42). While the tax was levied for “carrying a vigorous war against France” (Beckett 1985) its implementation was not done through the centralised auspices of the state, nor did its continued levy increase the capacity of the state to pursue further taxation.

The success of the tax at this time was because it eschewed potential organisational power of the state and was instead “levied on the landed gentry by the landed gentry” (Kain and Baigent 1992). Local men of repute administered the tax itself, and crucially the tax itself relied on calculating the prospective — not actual — ground rents that could be charged on the land. Unsurprisingly, with the tax relying on no maps, register or central government coordination, the amounts returned by different regions of the country differed significantly, in effect making this a local tax which was contrived never to be particularly onerous on local landowners (Ginter 1992).

The result of which was a comfortable status quo, one which stood in contrast to land registration and taxation in other European countries at the time, crucially the English system did not pit the aristocracy’s interests or landed gentry against that of the government or the Monarch. Rather, it highlights the alignment in the preservation of the system of landed estates within the elite. As a result of this alignment forestalled the trajectory for the development of systems of land registration which took place in other European countries from the 16th century onwards.

The English Land Tax, both in purpose and function, is emblematic of a wider structure of ‘elite settlement’ which characterised the English state following the Glorious Revolution until the early 20th century; one which enabled a gradual adaptation to the changing social, economic and political circumstances of the time while the overall framework of a landed estate as the basis of elite power, status, and wealth to remain largely unchanged. Through its ‘gentlemanly’ approach to

taxation, the tax itself was able to raise revenue without expanding the powers of the state to enforce or assess its due. However, despite its apparent 'gentlemanly' approach, the tax was also an instrument of power, one which ensured the political interests of the same 'gentlemen' retained their clout. As, in the absence of any other registers, central or otherwise, the rolls of the Land Tax were used as the means of assessing the enfranchisement of the narrow band of eligible male landowners (Higgs 2011, pp 58). Moreover, the Land Tax, in its shifting function and apparent efficacy<sup>11</sup> given the lack of state enforcement, is demonstrative of an 'elite settlement' based on the ownership of land. This was a matter of ensuring that a specific type of system, in its unstructured and tacit form, was a means of ensuring a specific set of representation and exclusion.

The English land tax and its continued enforcement is a useful starting point in addressing the power of the elite in the context of land registration as it is demonstrative of both the continuity of the system of landed estates and the flexibility of this system to changing circumstances.<sup>12</sup> First, a point of continuity is to contrast the drastic societal changes that took place during the time span under consideration; in turn, to draw attention to how the development of land registration was affected by this temporality.

## **Estates in the Land**

### **The Landed Estate as Elite Power**

Following on from the previous section, which briefly introduced the feudal origins of this system of landed estates, this section discusses their enduring power from the

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<sup>11</sup>See arguments of (Peirpoint 2018), whose revisionist arguments and comprehensive marshalling of new archival data and research demonstrates how the tax itself has been maligned in many historical records.

<sup>12</sup>A point which is demonstrated by the fact that historical records have shown that Land Tax revenues went up at times of War even while the enforcement and administration of the tax remained the same (Beckett 1985).



17th to mid-19th century. In examining the power of the landed elites and their priorities, this section discusses their wealth and its interface with the law. This research argues that the enmeshment of each of these elements was crucial in shaping the development of land registration and its coherence into an information infrastructure. In contrast to the upheavals which occurred in the political regimes of many other comparable European states during the time span covered in this Chapter, England's political structure endured. Indeed, Jones (2018) argues that, following the English Civil War and the Restoration, English society entered into an 'elite settlement' in which restored the status quo of landed aristocratic power of the Tudor period, stating that:

*The landowner class set about re-embracing the order it had been busily threatening in twenty years of military and political turmoil. It was good at reproducing itself. Unfortunate families might fall out of the system, but the basic structure of rural society persisted through thick and thin. (Jones 2018)*

The structure of rural landowning remained the structure of power for a rapidly industrialising economy and imperial Empire, with its highest governing personnel being drawn from a narrow band of elite landlords. It was thus a system, both in England and in its Empire, which was primarily based around accommodating the interests of an elite for whom the ownership of Land conferred both wealth, status and power — both at home and beyond. How Land was owned, by whom, and knowledge of that ownership is thus of paramount political importance at the time.

The extent to which Land conferred wealth, power and status during this period is hard to overstate, a point which Cannadine lays out in explicit detail:

*"Land was wealth: the most secure, reliable and permanent asset. Land was status: its ownership conferred unique and unrivalled celebrity. Moreover, Land was power: over the locality, over the county and the nation. ... Indeed, wealth,*

*status and power were so closely intertwined in the case of the British patrician class that it is virtually impossible to write of one without the others."*

(Cannadine 1990)

While the framework for the system of land estates endured during this period, there were fluctuations in the power and fortunes of individual family estates. In particular, the industrial revolution gave rise to vast new fortunes amassed due to new forms of production pioneered by industrialists. Moreover, while the means by which these fortunes were amassed may have differed from those of the traditional aristocracy, their origins did not create a new or antagonist class relations with that of the old order. Rather, they enabled the "landed system [of estates to] survived because the ownership of an estate was one of the rewards. Manufacturers were, so to speak, co-opted into the prevailing archaic system." (Jones 2018). Although, the extent of this accommodation of social mobility was only extended to those who became *extremely* wealthy (Rubinstein 1981).

Economic interests did not primarily drive the expansion of industrial fortunes into the system of landed estates. While agriculture remained the largest sector in the English economy, both in terms of total employment and national income until the early 1840s (Brunt 2004), returns to investment in Land gradually diminished throughout the 19th century (Clark 1998), with the repeal of the Corn Law's in 1846 significantly decreasing the economic importance of Land. The diminishing economic importance of Land can be seen as the start of the decline of the estates system and the power of the aristocracy as a whole. However, the short-term impacts were muted despite falling returns; many estates remained profitable and were an important source of income for their owners.

Offsetting the income which could be derived from an estate was the extent to which the ownership of an estate could be used as collateral against which capital could be raised, with some level of indebtedness being the norm for aristocratic families

throughout the century (Cannadine 1994). Capital could then be used to invest the opportunities in the 'new economy, be these financial products or industrial enterprises or imperial ventures. As a result, while new fortunes were being assimilated into the existing system of landed estates, hereditary aristocratic estates were brought into the new economy, with the Land underlying them taking on new purpose and meaning. A dual movement ensured that the framework in which Land was the status, wealth and power that it conferred remained intact.

The centrality of the landed estate as the core around which this system revolved is evident in the status granted to it in law and through its pro-active protection by the Courts. In particular, the use of estates as collateral for the raising of capital was not an encroachment of new financial logics into the feudal domain of the estate but rather a reflection of the power of the estate as a marker of status and power.

The legal doctrine of equity redemption best exemplifies the entanglement between the estates system, the elites who benefitted from it and its defence through the development of land law. This doctrine developed to, in effect, ensure that indebted landowners were protected from the ultimate forfeiture of their estates (both for themselves and their future heirs) (Waddilove 2018). Indeed, legal practices ensured that borrowers were highly unlikely ever to lose the estates they had borrowed against and often were able to escape the debts they owed lenders.

The development of doctrines of equity redemption, which significantly favoured borrowers who used Land as collateral, was reflective of the wider framework which privileged the structure of an aristocratic elite and the Land from which they drew their wealth and status. The rulings of the Courts on such matters were openly class-based in favouring the rights of landowners (Sugarman and Warrington 1996). A bias which, unsurprisingly, was continually upheld by the House of Lords — the supreme appellate judicature. Furthermore, it was not just the most important judicial rulings which were influenced by the class interests and privilege of the landed gentry, but

of the legal profession as a whole (Offer 1981). Land law was the ultimate expression and means of conserving the estates system and the hierarchy class system which it enforced.

This extended to the study and practice of law in which land law was the most studied, most lucrative and most active area of law during the 19th century, to the extent that the famed legal scholar F. W. Maitland, who declared that “our whole constitutional law seems at times to be but an appendix to the law of real property.” (Maitland 1919). This was reflective of the legal profession as a whole, who were largely drawn from the ranks of the landed gentry. Simpson diplomatically lays out the impact the class position of those most involved in the administration of the law had upon its development, stating:

*The lawyers and judges who moulded the more modern rules upon perpetuities between 1450 and 1700 were themselves great purchasers and settlors of Land; it could thus be that rules worked out in the court represent an attempt to balance the conflicting desires of their authors, and produce a body of law which manages to indulge to some extent both the desire for an active land market and the desire to retain Land in the family”. (Simpson 1986, pp, 209)*

The effect was to create a powerful intersection of the interests of the landed aristocracy and the legal profession, both of whom benefited from the byzantine complexity of land law. Indeed, by the start of the 19th century, it is difficult to convey the extent to which the accumulated baggage of the feudal system, sedimented into common law, had created a system that was extremely difficult to navigate and overwhelmingly favoured the landed interests. To the extent that the eminent legal historian Simpson remarks that it is “difficult in a short account of the history of the leading doctrines of land law to give any convincing impression of the extreme complexity achieved by the beginning of the 19th century”.<sup>13</sup>

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<sup>13</sup>For example see the argument of the 19th-century legal reformer Humphreys complained that “our laws of real property are to be sought in the copious library of 674 volumes, exclusive of indexes to the statutes. If

## The 'English Land Question'

The power of the aristocratic elite, the estates system and its entrenchment through the Byzantine complexity of land law was the political question of the 19th century. The old order was beginning to be challenged by the accumulation of economic, social and cultural changes which were taking place. The concentration of land ownership amongst a small aristocracy, the power which is enabled, and its enforcement through the courts become known by those seeking to change the system as the 'English Land Question'.

That it is referred to as a question, and one that remained politically salient until the early 20th century, is testament to both the breadth and depth of the issues against which reforms railed. The question also captures how the issues were amorphous with the object in need of reform shifting to the ebb and flow of political trends. It is thus described by Thompson as:

*"In fact, the English Land Question, and the lack of dramatic reforms stemming from this question, are both central to an understanding of nineteenth-century political history. This history is essentially concerned with a power struggle and attempts to use that power to obtain or prevent one or other solution to the specific problems of the day."* (Thompson 1965)

To give context to the scale of the English Land Question, this subsection examines the concentration of wealth and land ownership in England in the 19th century-placing this inequality within the context of the social upheavals and cultural change of this century.

The continuity and power of the system of landed estates are evident in the distribution of land ownership during this period. Figures from 1873 show the extreme concentration of ownership amongst a small aristocratic elite, with over

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*from this collection we make a liberal deduction for obsolete and redundant treatises, and works of slight esteem, or only occasional relevancy, there will remain a total of upwards of 600 volumes"* (1826, pp 164)

one-quarter of all the land in England and Wales being owned by only 710 men and almost three-quarters of land in Great Britain being owned by less than five thousand. (Cannadine 1990, pp 55), It was estimated that less than 5 % of the population owned any real property (See: Bateman 1883). A system of ownership generated huge unearned rentier incomes for the select few of the British aristocracy.

An exemplar for the rapidly changing nature of English society at this time, while fixed within the framework of an aristocratic system — that is to say, (Jones 2018)'s 'new wine in old bottles' — is the patterns of land ownership in London by the middle of the century. By 1873, the growth of urban England had driven the population of London up over 3 million people, making it the largest city the world had ever seen at the time (Hohenberg and Lees 1995). Consequently, over a fifth of England's real estate value was estimated to be in the capital. Despite this rapid explosion in the size and population of London, the ownership of land remained highly concentrated, with only 3% of households were freehold owner-occupiers (Quinault 2010). The majority of Londoner's who 'owned' their own homes being leaseholders. The remaining 71% of the population lived in rented accommodation. This compares to the 1,500 most profitable acres of the city, which belonged to just five families, which by 1890 had for each family and estimated rental income in excess of £180,000 per year (Lindert 1987).<sup>14</sup> In this context of a rapidly urbanising and commercial London, the enduring distinction between freehold and leasehold land continued to function as a power relation that reinforced the system of landed estates.

The complexity and multifaceted nature of change during this time span, from the mid-1700s to the end of the 19th century, is evident in the extent to which

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<sup>14</sup>The descendants of four of these five families continue to be amongst the Richest people in the UK due to their ownership of London real estate, with the Sunday Times Rich List ranking Hugh Grovesnor as the 10th richest individual in the UK with an estimated fortune of £9.9 billion; Edward Cadogan 20th, £6.7 billion; Edward Portman 65th £2 billion; Andrew Russell 190th £727 million (Sunday Times 2018).

descriptive terms such as the 'industrial revolution' and its utility has been hotly debated by economic historians (See: Berg and Hudson 1992; Mokyr 1999, for authoritative overviews of these debates). From economic data that historians have amassed during the 20th century, there are persuasive arguments that industrial growth and technological progression progressed at a far more balanced and incremental rate than later commentators have assigned to this period. By contrast, for sociologists, the industrial revolution still carries analytic weight, signalling the accompanying and much more dramatic shifts in social life experienced by those who lived through this period, and for whom, for example, the shift from rural to urban life was anything but steady and incremental.

The split between these two disciplines, in their view of how this long historical time span should be interpreted, is captured in the contradictions of the system of landed estates at this time. England started the 19th century as a largely rural society and ended it as an urban one is a narrative arch that underpins the societal changes in England during the industrial revolution. Indeed, the change from 65% of the population having lived in rural areas in 1801, to only 23% doing so in 1901 is a dramatic — the implications of which can hardly be understated (Mills 1973). However, this headline figure belies the complexity of the changes taking place during this period. While these figures reflect the great flux for those at the bottom of society, it disguises the continuity for those at the top.

Therefore, during this period, what is remarkable in England is how little these changes affected the entrenched system of landed estates. As, despite the rapid industrialisation which took place during this period, the majority of land in England remained (as it does to this day)<sup>15</sup> rural, and this is reflected in the concerns of landowners and consequently land law. A point which Jones (2018) makes when he states of this period that researchers "often concentrate on change, but those who

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<sup>15</sup>See for a more detailed example of recent statistics for the whole United Kingdom (Rae 2017)

have looked closely at rural life since the Restoration (indeed before it) and by emphasising continuity” although he adds, “in practice this means slow change within a remarkably static framework.”. From a historical vantage, it is this balance between the stasis of the estates system, its preservation through land law and the power it bestowed upon elites and its slow erosion by a century of economic, social and cultural change which define the ‘English Land Question’.

## **Towards a System of Land Registration**

### **Land Law Reform in the 19th century**

The history of land law in the 19th century is one of a protracted process of reform. It is a process of reform that can be seen as central to understanding the politics of the era, as it is at the heart of the struggle for the power of the English state. Yet, at the same time, despite the political importance of the ‘English Land Question’, the lack of substantive legal reform, or economic or social change in the ownership of land, can make the subject appear as little more than a historical sideshow. Which for all the importance attached to it during the 19th century, affected little substantive or lasting change (Thompson 1965). This paradoxical political importance and seeming irrelevance of land law reform out of which today’s system of land registration emerged.

In part, then this can be attributed to the wide-ranging and amorphous nature of the ‘English Land Question’ throughout this period. In the context of the importance of land as a source of power, wealth and status, occupies a liminal space within any history of England over the 19th century. To this end, the development of a system of land registration is both central and a diversion from this question. One which transforms many times; from a question of standardisation of the law, as with the early reforms of land law prompted by the Real Property Commission; through to land registration as a process of administrative standardisation pursued by reformers



as a means of forcing a change of patterns of land ownership by the middle of the century; finally becoming irrelevant to the political projects of breaking the system of landed estates at the turn of the century (Cragoe and Readman 2010).

The era of the 'English Land Question' came to the fore in 1828 with Henry Brougham's record-breaking six-hour speech<sup>16</sup> to the Commons, within which he extensively critiqued the absurdities and injustices of English law. Within which he there was a particular focus on land law, which he saw as:

*"the obstacles, both to the conveyance and the improvement of landed estates. They prevent the circulation of property to a great degree, and they lessen the chance that an owner of such tenements would otherwise have of raising money, on their security, adequate to their value"* (Hansard 1828)

This landmark speech has been widely credited as the impetus behind creating a Royal Commission to inquire into the Real Property Law of England. Although, as Buck (1995) notes, criticisms of the difficulties caused by the complexity of land law to the landed interests had been begun to be expressed in Parliament in the years before Brougham's speech. None of the previous discontents had sought to critique and over hall the operations of the law in such an exhaustive manner nor had prompted such action.

The need for land law reform can be seen from the number of private acts of Parliament which covered the settlement, improvement and enclosure of land. A lengthy and expensive process allowed landowners to fully exploit their land outside of the encumbrances of the courts and private conveyancing- there being an astonishing 5257 such Acts between 1760 and 1820 (Bogart and Richardson 2009).

The complexity of Land Law and the many byzantine inconsistencies which had developed out of Common Law rulings were addressed by the Real Property

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<sup>16</sup>A record which is held to this day (Hansard 1989)

Commission, which began work in 1830 and, in turn, authored four, “massive, but extremely lucid” reports of which are described by Simpson (1986) as landmark legal texts with “nothing comparable [having] been produced before, or, for that matter, since”. However, the reforming attitude of lawyers like Brougham and the members of the Real Property Commission was, however, a decidedly conservative one. Despite its wide-ranging remit and the subsequent flurry of reforms, it did not challenge the underlying system of land law but rather sought to make it more effective in channelling the interests of landowners through a tweaking of existing laws. This is something which is explicitly laid out at the start of the reports produced by the Commission when it is stated that:

*We have the satisfaction to report that the Law of Real Property seems to us to require cry few essential alterations; and that those which we shall feel it our duty to suggest are chiefly modal. When the object of transactions respecting land is accomplished, and the estates and interests in it which arc recognised are created and secured, the Law of England, except in a few comparatively unimportant particulars, appears to come almost as near to perfection as can be expected in any human institutions.*(Real Property Commision 1829b, pp 6)

The immediate outcome of the Commission’s findings was a wide-ranging attempt at standardisation of the law. With the Fines and Recoveries Act, 1833, the Dower Act, 1833, the Inheritance Act, 1833, the Real Property Limitation Act, 1833, and the Wills Act, 1837, each was contributing to an overhaul of the most erroneous complexities and absurdities which the Royal Commission had identified. That the recommendations of the Commission were passed into law so quickly is testament reflective of both the judicious work they presented and the political consensus over the concerns they addressed.

One area addressed by the Commission on which there was not a political consensus was the proposal to create a nationwide system of land registration — the

details of which were discussed in Chapter 4. Even without the implementation of a system of registration, the reforms which were enacted following the reports of the Real Property Commission made conveyancing simpler and more secure <sup>17</sup>. However, the fundamental problems that had given rise to the question of land registration were not fixed by clarifying the workings of the law alone. In refusing to address the root of the problem in land law itself, the Commission's proposals for a system of land registration ended up proposing a system of deeds registration. The degree of centralisation required by the proposed system of registration would have entailed a massive expansion of the administrative capacities of the state — far beyond any other registers that existed at the time (with the General Records Office not being found, for entirely different reasons, until five years after the publication of the Commissions' recommendations). The system proposed required not only a record of property transactions to be kept but a further register of wills and bankruptcies. So as to ensure that any event which would trigger a change in the ownership of a property to be recorded.

It was a suggestion that drew immediate censure from both landowners and lawyers, who saw such proposals as an overreach of the role of the state, an encroachment on their liberty, and an administrative structure that opened the door to further future taxation. As Cooke notes, "only a little knowledge of the characteristics of the English propertied classes in the nineteenth century makes it easy to imagine how fiercely compulsion was resisted". While in the case of the legal profession, there was a clear self-interest in the preservation of conveyancing as a complex, prestigious, time consuming, and most importantly costly, legal process — with the attitudes, resistance and professional politics of land law reform as seen from the perspective of lawyers having been covered in depth by Anderson (1992) and Offer (1981). As a result, the bills proposing a system of general registration

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<sup>17</sup>These changes mainly came from the Fines and Recoveries Act 1833 and Real Property Limitation Act 1833, which both limited the retrospective complications to which property purchasers may be liable too (Anderson 2010)

based on the findings of the Commission were repeatedly voted down.<sup>18</sup>

The vehement opposition provoked the proposals to a system of centralised compulsory registration in 1830 that was sustained through the following decades, with a series of further Commissions and Bills throughout the 1840s and 1850s. The reforms proposed by the Commission were, for all the opposition they provoked, rooted in the preservation of aristocratic power and the system of land estates. A position which was very literally expressed by:

*“Lord Campbell, who had headed the Real Property Commission, said in a letter to his brother that “I stick up for the aristocracy of England to whom this country at every period is indebted for its liberties” (Hardcastle, Life of Lord Campbell, Vol. I, p. 493” cited from (Howell 1999)*

However, the opposition and suspicion of the aristocracy towards land law reform and plans for a system of land registration were not, however, entirely unwarranted. By the 1840s, the call for reform of land law had been taken up by liberal reforms which sought to enact wider social change through attacking the legal basis through which the estates system was perpetuated.

The campaign introduced these reforms to establish a ‘free trade in land’, led primarily by Richard Cobden and the Manchester School. This movement sought to pit the economic imperatives of liberal thought and material requirements of capital against that of the system of landed estates. It was a movement and political argument which captured the zeitgeist of the mid-19th century, expressing the tensions between the old order and economic and social change engendered by industrialisation. Yet, it affected little lasting change, the reasons for which are unsparingly captured by Thompson:

*[The] frontal assault on the aristocratic position by the middle classes was,*

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<sup>18</sup>Bills to establish a general register in 1830 and again in 1831 and 1832 all failed, as did the three bills put forward in 1834.

*indeed, perhaps the least effective of all in bringing about the decline of the landed interest. This was largely because the active leaders were inhibited in their choice of weapons by their principals. [...] Cobden still intended to proceed with the work of 'beating down the power of the aristocracy', but he declined to take up the obvious implement for the task, a programme of radical parliamentary reform because he was fearful of its democratic implications* (Thompson 1963, pp 283)

Instead, by focussing on the 'free trade in the land' to break the old order, the movement became mired in banal complexities of land law. In focusing on the abolition of primogeniture, strict entail, settlement, and the simplification of conveyancing and land registration, the movement sought to undermine the means through which the power of the aristocratic elite was perpetuated. In doing so, it was a movement that kept the 'English Land Question' at the fore of parliamentary politics for the remainder of the century. However, it did so at the cost of effecting an immediate substantive change against the system it sought to undermine.

### **The End of the Land Question**

The 'English Land Question' as the politics of the estates system and land law reform was *the* political question of the time. In looking back at the change which resulted from the ongoing furore which the English Land Question provoked Thompson (1965) reflects that 'the historian must wonder what all the fuss had ever been about, the persistence of the advocacy no less than the heatedness of the defense'.

For all the passions which the 'English Land Question' aroused, reforms which had once been met with heated resistance often came to be passed decades later with little fanfare. The reasons behind the slow dissipation of resistance are telling of the changes to the development of land registration and its relation to the estates system,

elite power, and land law. An example of which is offered by Anderson when he writes that:

“The watershed was the third Reform Act, 1832. One minor consequence of the great shift it brought was to suggest—to lawyers, at least—a new middle ground. ‘Free trade in land’, had been a radical cry in the 1820s and again in the 1840s, but in comparison with what was truly radical in the 1830s it was now tame enough to attract some Conservatives.”(Anderson 2010)

The same pattern is evident in proposals for land registration. In the 1830s, the proposals of the Real Property Commission for a registry of deeds were repeatedly voted down by landowners in Parliament; who objected to the registry on the grounds that it was an overreach of the state into their affairs and who saw the proposed reforms as an attack on the system of landed estates. By the 1850s, however, new proposals for a system of deed registration — introduced to Parliament by the now ennobled Lord John Campbell who had chaired the Real Property Commission — failed not to sustained opposition but to procedural miss-management (with the Government at the time falling before the legislation could be reintroduced) (Campbell 1881, pp 291 - 292).

The failure of the 1832 ‘*Bill to Facilitate the Transfer of Real Property*’ feeds into this pattern, with the next major attempt at establishing a system of registration was based on the far more radical plans of the 1845 ‘*Royal Commission on the Registration of Title with Reference to the Sale and Transfer of Land*’ — which resulted in the successful 1862 ‘*Land Registry Act*’ which established the LR. However, the 1862 act was not able to implement all of the suggestions of the previous Commissions. Most importantly, the compulsion to register was stuck out in Committee as an important concession to the encompassing nature of the title system. As was evidenced in Chapter 4, the Committee hoped that the efficiency and security provided by the

title system would, in time, lead to the triumph of the LR over the practice of private conveyancing. Indeed, as the 1870 (pp IX) noted, with the compulsion to register the 1862 Act passed “almost without dissent”.

The opposition to land registration as an attack on the landed interest continued after the founding of the LR. This can be seen in the slow progress towards a system of total registration following the LR’s founding — indeed, the ambition of total registration was inherent within the format of the title system. The continued opposition to compulsory registration can be seen in subsequent amendments to the 1862 Act, in 1870, 1873 and 1874, all of which sought to implement the administrative reforms proposed by the Land Title Commission (1870). All of these Acts were voted down either in the Lords or Parliament, on the grounds that they sought to implement some form of compulsion to register as part of wider administrative reforms to the LR — with the reforms only being passed in 1875 when the concession was made to keep land registration as totally voluntary (Royal Commission 1911).

By 1887 the opposition to land registration had all but faded with the passing of the *‘The Land Transfer Bill, 1887’* allowing compulsory registration to be introduced by orders of the Privy Council. The powers granted in this act were then used to expand compulsory registration across England and Wales slowly. The last notable objection to the compulsion to register was the City of London, which asked for an exemption from compulsory registration to London. An exception which was justified based on both the historical peculiarities of the City and the expansion of the system to the rest of London as experimental — and thus the City should be exempt from these requirements — an argument to which the Conservative Lord Chancellor of the time was not sympathetic, granting the City only a temporary exemption from the compulsion to register (National Archives 1898a).

The reasons behind the wilting of elite aristocratic opposition to land registration over

the 19th century are hard to pinpoint, with their being on a specific turning point or event which saw a shift in attitudes. The change can, in part, be attributed to the declining fortunes of aristocratic power and the estate system on which it rested over the century. At the start of the century, the British aristocracy was unrivalled in their wealth, social prestige and power over the state. By the end of the century, however, the landed aristocracy had been “eclipsed as an economic elite, undermined as the most glamorous social group and super-seeded as the governing class” (Cannadine 1990, pp 25). In attempting to pinpoint the moment of this change Cannadine cites the 1880s as the particular important decade in the fortunes of power of the landed aristocracy, although he cautions that the decline was “no simple or straightforward matter” to which there was no “single cause of death”.

It has been shown that through the example of land law reform that the decline of the power of the landed aristocracy was complex and protracted. No Act definitively changed the landed estates’ system or a sea change in legal practice, undermining aristocratic power. At the start of the century, reforms to the functioning of land law and the rights of property owners over their land had been the only challenge to the total hegemony of the landed interest and had thus been fiercely fought against. By the end of the century, however, the challenges facing the hegemony of the power of the landed interest were now so overwhelming that the case of land registration and land law reform had become a minor issue, one which was no longer able to muster a spirited class resistance. Cannadine succinctly captures the resignation of the landed interest in this regard:

*“ ‘Under our present suffrage [...] the Conservative Party can never again be an aristocratic party or a party of privilege ... It is forced to appeal to the prejudices and desires of the poor.’*

*Put the other way, it could no longer protect the assets and the estates of the rich.*

*The best it could do was pass pre-emptive legislation in the hope of fending off*



*radical demands for even more radical reform.” (Cannadine 1990, pp 63)*

To this end, the declining power of the landed interest over the 19th century had removed the once immovable impediment to a system of land registration.

However, the decline of the system of landed estates and the power of the aristocracy did not lead to the remaking of land law. To this end, what had begun to change by the start of the twentieth century was the way of who owned land, how that ownership was evidenced, but not fundamentally how land was owned. This is a point which is raised by Dicey, who, in surveying a century of legal change, concluded that despite the apparent changes made to the surface of land law, the substance upon which it relied remained the same, forcefully arguing that:

*“if Eldon or his contemporaries could be brought again to life, their first impression would be that the triumph of liberalism, of Benthamism, or, as they would express it, Jacobinism, was complete and that the old English land law as they knew it was a thing of the past. We all now know that ‘this impression would be erroneous. In truth, explain the matter as you will, the fundamentals of the land law remain unchanged. They were in 1900, they are still to-day, what they were in 1800, or indeed what they were in the time of Blackstone.” (Dicey 1905)*

There is, therefore, a legacy of an underlying continuity to English land law in which the politics of the ‘English land question’ embedded in the information infrastructure of land registration. For it is this context in which the foundational features of the system of land registration were formed and which have continued to endure.

## **Conclusion**

This Chapter started with the distinction between freehold and leasehold ownership as a point of entry into the *Blackbox* of registration. This Chapter has explored the

development of land registration in relation to the history of land law and elite power by examining the distinction between freehold and leasehold land. It has found that embedded within this distinction between freehold and leasehold land are a set of power hierarchies which are a product of the estates system around which English land law developed and which have become embedded in the infrastructure of land registration.

This Chapter started with the origins of the bifurcation of ownership in copyhold leases as an expression of the power dynamics of feudal manorialism. A split in ownership later took the shape of freehold and leasehold as a circumvention of the attempted legal reforms of Henry VIII. It is a legal form that has lasted into the present day.

In part, the enduring distinction between freehold and leasehold land can be attributed to the 'elite settlement' which followed the English revolution. It was an elite settlement in which the interests of the aristocratic elite and the preservation of the system of landed estates were aligned with those of the state, a theme which this Chapter explored through looking at the English Land tax. English land law was crucial to preserving the elite settlement by enforcing and protecting aristocratic interest, with the research in this Chapter using the doctrine of equity redemption as an example of developing the protection of the landed estate through the Courts. The enduring power of the distinction between freehold and leasehold land is further evident in the concentration of land ownership in London during the 19th century amongst a handful of aristocratic landlords. Stasis in the ownership of land contrasted with the urban dynamism and economic growth of the industrial revolution.

The 'English Land Question' marks the beginning of the unravelling of the elite settlement, with the power, wealth and status afforded to the system of landed estates slowly beginning to unravel. This is not to say that the system collapsed, but

rather than the hegemony of the aristocratic elite waned. The establishment of a system of land registration stands as an example of the changing fortunes of elite power and the estates system. At the start of the 19th century, calls for a system of land registration had been ferociously rejected in defence of the landed interest. By the end of the century, the expansion of compulsory registration met little real opposition from the same class of landowners. During this timeframe, the infrastructure of land registration was established and was indelibly shaped by the politics of the time.

From a long arch historical perspective, establishing an infrastructure of land registration can appear at first sight as a key defeat to the estates system. On closer inspection, however, the change it affected is muted. The establishment of a system of registration did not, as critics at the time feared, lead to the imposition of new forms of taxation. Rather, through the *Blackbox* of the legal complexity of the title to land — as examined in Chapter 4 — the establishment of the infrastructure of land registration was a concession to the preservation of land law as it existed at the time and the power hierarchies it codified. This is true of the distinction in the bifurcation of ownership between freehold and leasehold property, which became embedded within the infrastructure of land registration. To make this point is to see in the infrastructure of land registration as part of a far larger dynamic between the law and elite power in England which has endured to the present, one which is bluntly summarised by Lawson as:

“The key concepts of the English law of property were created for and by the rich at a time where the bulk of their land was invested in property”

(Lawson 2002, pp 170)

By being embedded in land registration infrastructure, the distinction between freehold and leasehold land has endured the fragmentation of the estates system. It is a distinction which the information infrastructure of land registration after 1925

continued to uphold while at the same time hiding from view the archaic grounds upon which this distinction was based.

The endurance of the distinction between freehold and leasehold land continues to matter today. Leasehold ownership accounts for approximately 20% of the UK housing stock (Department for Communities and Local Government 2020). In London, leasehold ownership accounts for more than 33% of the total housing stock. This is a direct legacy of the landholdings of aristocratic families. The ownership of a leasehold property matters as it is not absolute; as a result, it "[limits the] control and freedom [leaseholders] were able to exercise over significant aspects of their occupation" (Cole and Robinson 2000). Furthermore, leaseholder enfranchisement remains a complicated and often expensive process, and not all leaseholders can enfranchise their property. Leaseholder enfranchisement has consistently been limited due to lobbying by the decedents of the same aristocratic owners discussed in this Chapter. As a result of limits based on the potential value of a property the great estates of London remain consolidated in the hands of a select few families (Davey 1994; Robertson 2006). As such, the distinction between freehold and leasehold land continues to be emblematic of the relationship in which the information infrastructure of land registration was shaped, one in which the power and interests of the elites cannot be separated from the context in which the system of land registration was formed.

# Chapter 6: The Production of Housing Market Statistics

*It is important to bear in mind that the system of land registration is merely conveyancing machinery. — Lady Hale, Scott v Southern Pacific Mortgages Limited (2014)*

## Introduction

This Chapter examines the relationship between the information infrastructure of land registration and statistical knowledge of the housing market. It, therefore, covers two themes, the development of the infrastructure of land registration as it relates to the collection of information for statistical purposes and the broader production of housing market statistics in the UK. Inspired by the sociology of economic performativity, the research presented in this Chapter treats knowledge of the housing market not as a matter of fact but as an object which is constructed. In doing so, the research presented in this Chapter investigates the quantification of the housing market to demonstrate the importance of housing market statistics and their influence. Working over a long historical time span, from the founding of the Land Registry to the development of the Single Official House Price Index [HPI] in 2016, it finds that for much of the 20th century, the information infrastructure of land

registration was divorced from the production of statistical knowledge of the housing market. Demonstrating how the two only converged in the early 1990s following both changes to the infrastructure of land registration and the statistical needs of the state.

The research presented in this Chapter, therefore, seeks to address:

What is the relationship between the information infrastructure of land registration and statistical knowledge of the housing market?

In answer to this, this Chapter argues that the purpose of land registration has never been collecting national aggregate information for the purposes of administration. Rather, as the research presented in this Chapter shows, the infrastructure was divorced from any form of aggregate knowledge production for the majority of the twentieth century and consequently, excluding the housing practices of elites from national housing statistics for the 20th century. This position changed in the early 1990s due to both the state's changing needs for economic management and the operation of the LR, which for the first time made the information it collected available for statistical analysis. The development of the HPI was associated with processes of standardisation of statistical production taking place both in the UK and across the EU. As a result, this Chapter concludes by arguing that to meet these requirements, a 'statistical superstructure' needed to be built on top of the process of land registration, with the following Chapter taking up this conclusion to develop a critical examination of the construction of the HPI itself.

To do so, this Chapter is split into three sections, covering three distinct timespans and a set of relations between the infrastructure of land registration and the production of housing market statistics — which take place against a backdrop of the changing nature of the housing market in the UK. The first section brings together secondary historical sources to discuss the development of the property market in the UK before 1945. Before 1945 no official housing market statistics were

produced, with this section having been added to provide a chronological continuity with the previous Chapters. The second section covers 1945-1990 and uses primary historical sources, including archival research, official government publications, statistical methodologies and original housing market data. This section discusses crucial developments in the infrastructure of land registration during this time, including; the expansion of compulsory registration across England and Wales, the end to the secrecy of the register, and housing market statistics produced during this time outside of the infrastructure of land registration. Building on the shortcomings of the extant housing market statistics at the start of the 1990s, the third section of this Chapter presents the importance of such measures for national economic management. This section uses official reports, economic bulletins and methodological documents to trace the development of the HPI and its convergence with the infrastructure of land registration.

## **The Property Market and Statistics before 1945**

The first section of this Chapter engages with the development of the market for property and housing before 1945 and the modes of quantification which were deployed. During the time span covered in this section, the LR was founded and its coalescence into an infrastructure — discussed in Chapter 4 — took place. However, the data collected by the land registry during this time was not used for aggregate statistical purposes, with the second part of this section examining the strict secrecy of the register. The third part of this section turns to the changing nature of the property market at the turn of the century, moving from private networks and London auction houses of an elite property-owning class towards a housing market based on mass ownership. This section is the briefest of the three presented in this Chapter as it is not the primary focus of the research, which is presented, but rather is intended to form a continuous historical timeline with the research presented in

other Chapters in this Thesis and a context for the development of the faculties of the land registry and statistical knowledge of the housing market.

### **The Making of a Market**

In tracing the history of the property market in England, the historian Fitz-Gibbon (2018) provides an authoritative and in-depth account of this market's formation and its growth until the start of the 20th century. He traces the origins of the property market in England back to the founding of the London Auction Mart in 1810 — the first auction house in England exclusively devoted to the sale of land. This research utilises as a starting point, which in its understanding of what constitutes a 'market', is similar to the one taken in this research, with Fitz-Gibbon (2018) specifically adopting a Callonian approach to markets. This approach allows the market to be understood as a networked and contingent assemblage of which the London Auction Mart is the first physical embodiment of its kind in England. To this end, the founding of the London Auction Mart marks the starting point for a history of the property *market* as it marks a departure from previous trade in land, which had been conducted either through personal networks or as one-off sales in general auction houses. As while trade in land as a commodity good had been well underway long before the founding of the London Auction Mart (and has been covered by other histories of the sale of land in England (See: Clark 1998)), this trade cannot be thought of as a market as this would be understood by modern economists (Thompson 1957).

The founding of the London Auction Mart furthermore marks the emergence of a wider set of market practices, including expanding the volume of real property which was traded, the emergence of rival auctions houses, a professional class of traders, surveyors and conveyancers and professional trade publications (Anderson 1992; Offer 1981). The growth of this market, the value it contained, and the profit which could be derived from it made way for the development of a new appetite for



quantifiable knowledge about the trade in property. The first publicly published quantification of the property market can be found in the *Journal of Auctions*, which from its founding in 1853, published aggregate numerical information on the property market. The Journal had been able to collect enough property market data to publish average prices per acre for eight counties as early as 1854 (Fitz-Gibbon 2018, pp 95). However, the limitations of these figures should be stressed; the Journal itself adopted a circumspect attitude to the figures which it published—often accompanying them with commentaries which hedged their importance and urged their readers to treat the figures with caution. This position reflected the limited quality of data to which the Journal had access and on which their figures relied.

The issues which faced the early quantification of the property market are worth dwelling on, as in one form or another, they plagued the production of statistical production of information on the housing market until the start of the 21st century. Firstly, these issues were the extent to which attempts to quantify the property market could be representative and, secondly, the ability to record and adjust for the property's attributes. The first problem for early attempts to quantify the market was the extent to which the record of sales in auction houses was representative of the property market as a whole. Only a small portion of the market was made visible through specialist property auctions, with an estimated 4/5 this to 5/6ths of the trade in land continuing to take place through private conveyancing, and therefore not in the public realm (Thompson 1957, pp 300). While for the second problem, those properties which were reported at auction often had many indefinable attributes. For example, with the number of acres often not being listed in an estate, or a rough estimate, along with knowledge of the quality of the land being transacted being purely qualitative (Pottage 1994), rendering a great deal of uncertainty into any attempts to produce quantitative estimates.

This issue particularly hampered figures, such as price per acre, which sought to provide comparability between different estates and regions. As a result, the measures which the Journal of Auctions created were never comprehensive in their reach and were not methodologically adjusted so as to be representative beyond the individual auctions on which they were built. Rather, they strove to capture an impression of current auction trends. However, the extent to which this reflected the property market is questionable, with Fitz-Gibbon (2018) noting that there was frequently great variation between similar measures and how editorials interpreted them.

### **The Secrecy of the Register**

Thus, early property market statistics developed outside of an official system of tracking property purchases. Indeed, when the Journal began compiling the first figures for publication, the Land Registry itself had not been founded. And, as is noted in Chapter 5, no other processes existed by which the state sought to intervene, tax or record the ownership of sale of land. However, the founding of the LR in 1862, however, did not immediately alter the availability of aggregate information about the property market transactions. The LR was not intended to record or intervene in the property market per se but rather to change the legal processes and basis for property conveyancing. It simply sought to facilitate the trade in property, as the Solicitor General, Sir Roundell Palmer, explained in the reading of the 1862 Bill to the House of Commons:

*“It was not alone the landed interest that would be benefited by the passing of this measure, because whatever simplified the commerce in land, and gave additional safety and security to the possessors of landed property, must tend to the stability of all property, and every interest in the country.”* (Hansard 1862b)

This is to say that the provision of the early LR was not an intervention into the

property market but a legal underwriting of the transfer of property to facilitate the commerce of this market. Indeed, the political compromises that made the LR's founding possible, as discussed in Chapter 5, resulted in specific legal provisions that meant that the LR could not be used for statistical purposes.

At the time of the LR founding, there were two crucial reasons why the information collected by the LR could not be used for statistical purposes. Firstly, the secrecy of the register was paramount and indeed had been one of the crucial political concessions to the registration of land, with the legislation ensuring that information collected on the ownership of land could *only* be used for trade. This is laid out clearly in the legislation in 1862, which states that:

*[The] Books of Registry may be inspected by the Owners of the Estates and Interests, or of the Mortgages and Incumbrances recorded therein, or their respective Solicitors or Agents: No other Person shall be permitted to inspect such Books, except under an Order of the Court of Chancery.* (Hansard 1862a)

Thus, ensuring the secrecy of the register with the information it held was only accessible to those directly involved in the transfer of a specific piece of land or the Court of Chancery where cases on the transfer of land would be heard. A secrecy that the LR vigorously protected. For example, a request for aggregate information on land in London by the newly formed London County Council in 1907 (by which time compulsory registration was in effect in London) was strongly rebuffed by the Chief Registrar who cites "absolute privacy" of the register of which the statutory duties are "so stringent that I [Chief Registrar] fear it would be impossible" for statistical use of the information held by the LR (National Archives 1905).

Furthermore, as discussed in depth in Chapter 4, the registration of property was not compulsory outside of London at this time. As a result, the records kept by the LR — should the strict secrecy of the register be dropped — could be used to produce aggregate information for the property market in London; they would not

be useful in the production of aggregate information about the property market outside of London. A fact which was a further compound, as demonstrated in Chapter 4, by the lack of registration before the 1897 Land Transfer Act meant that it is unlikely that even 1% of transactions were recorded by the LR.<sup>1</sup>

## **Towards a Housing Market**

As the property market continued to grow in the late 19th century, so too did the quantity and quality of published numerical information on the performance of this market. In 1893 the *“Land and House Property Yearbook”* published detailed statistics and reports on a property that had been traded at public auction. By which time other publications, with a wider remit and readership, had also followed suit, with the *The Times*, *The Financial Times*, and latter *The Economist*, compiling their own figures and drawing on these reports such as those published in the *Journal* and the *Yearbook*, as well as property market adverts and correspondence which they published to create sophisticated annual analyses of the state of the property market (Fitz-Gibbon 2018, pp 108). However, while growing in their scale and sophistication, such figures continued to be hampered by the same issues that had affected the earliest attempts to quantify the property market; the split between public auctions and private transactions and the difficulty of quantifying the heterogeneity inhering in the abstraction of property.

The development, and increasing sophistication and reliability, of property market figures derived from public auctions during the 19th century, began to falter at the dawn of the 20th century. For, the characteristic feature of the property market at this time, and on which hitherto the creation of aggregate numerical information had relied, of centralised London auction houses, had begun to change. The increase in the overall number of transactions enabled the growth of local auction houses outside

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<sup>1</sup>For example in North Riding (which had its own historic registry) alone Offer (1981; pp 50) counts 2923 transactions in year long span, compared to a high of 105 new registrations in a year at the LR before the introduction of this legislation.

the metropole, with both trends increasing the effort and resources required for trade publications to compile aggregate statistics. A process of market dispersion which stands in contrast to the growing institutionalisation of financial exchanges, which both ensured the centralisation of trading within their institutional confines and the increasing volume and sophistication of information and statistical knowledge which they were able to capture as a result (See: Fitz-Gibbon 2018, pp 100).

Despite the comparative limits in the quantity and quality of property market statistics at the time, their importance cannot be understated. Indeed, the figures produced at the time and later used by economic historians demonstrated seismic shifts that were beginning to occur in the property market at the turn of the century. The statistics capture the slow disintegration of aristocratic power, the break-up of large landed estates and the emergence of a *housing* as opposed to a *property* market. Furthermore, they were based on the owner-occupied homes often bought through credit lent by local financial institutions. A process which, and set of statistics, which illuminate the changing nature of elite power at this time; one which can be characterised as a laboured retreat from absolute hegemony of the previous century in the face of democratic progress, in which elite power was not abrogated but was slowly being ceded and eroded (Cannadine 1990). The recasting of the political terrain at the start of the 20th century was further accelerated by First World War which further reconfigured the relations between the aristocratic class, the state and the land market. A shift which Thompson captures as:

*[Aristocratic Families] sold off large chunks of land and yet remained landed did so because they realised that it no longer made sense to hold all their assets in one stock, land. ... It was that, quite as much as the goads of debt and taxation, which liberated aristocracy and gentry to consider themselves simply as rational investors and rentiers, free to liberate themselves from their lands which had become surplus to social needs. (Thompson 1990, pp 12)*

The reconfiguration of the landscape of property ownership, and the changing priorities of the governments of the early 20th century, is reflected in the purpose of the first national housing statistics, which were produced in the UK. With the first such figures being produced by the Ministry of Health at the cost of Local Authority housing Tenders (Ministry of Health 1944, 1948, 1952).<sup>2</sup> These figures reflected the growing importance of social housing provision at the expense of the previously paramount 'land question' — which after 1914 quickly faded in political importance (See: Cragoe and Readman 2010). There was a turn away from the highly concentrated ownership of land and property on which the provision of housing rested towards the emergence of the welfare state (Quinault 2010).

From the start of the 19th century to the start of the 20th century, thus saws the emergence of the modern property market in the UK and the start of its transformation away from one dominated by an aristocratic concentration in the ownership of land to one which was to be characterised by mass owner-occupation homeownership. During this time, the first figures which attempted to quantify the property market were produced. However, they were produced by private publications, with a scope and quality which was limited by the availability of information on property transactions. While the LR was founded during this period, it did not add to the quality or quantity of information available on the property market.<sup>3</sup> As both the workings of the LR were limited in scope for most of this period and, more importantly, the secrecy of the register itself was closely held. Only those involved in a property transaction were able to access the information contained within for the purposes of conveyancing. A position that continued to hold as compulsory registration extended to London and an owner-occupied

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<sup>2</sup>The quantification of such figures, and the development of the institutional capacity to collect, are in this regard the expansion of the infrastructure of governance — an expansion of the quantification which started with the founding of the GRO (Higgs 2003)

<sup>3</sup>This was both true at the time and remained so for historical research into the property market, with no research so far has made use of information which the LR collected during this time (Holmans 2005).

housing market began to emerge at the start of the 20th century. The first housing statistics, which the government collected, focused on the building cost of social housing provision — reflecting the political priorities of the time, which had shifted away from the property ownership and the ‘land question’.

## **Housing Market Statistics 1945 - 1990**

In looking at the housing market statistics from 1945 to 1990, this section takes place against a historical backdrop of great change in the nature of housing in the UK. It moves from the rapid expansion of social housing provision in the aftermath of the Second World War to the rise of owner-occupied housing and the early stages of the 1960s and the dramatic rise of house price growth which continues to this day. Paradoxically, however, the relation between the land registration — which itself underwent rapid expansion and an immense shift from paper records to digital databases — and statistical knowledge of the housing market remained relatively static. This section, therefore, charts this relationship of the official statistical information produced about the housing market during this time period and the reasons behind the lack of the LR involvement in their production. A lack of relation, which resulted from the changes in the information infrastructure of land registration during this period, enabled the production of new statistical knowledge from the early 1990s onwards. This section is split into three parts and covers; the expansion of the compulsion to register, changes to the secrecy of the register, and the housing market statistics produced, both by the government and by lending institutions, that were separate from the information infrastructure of land registration.

## **The Expansion of Compulsory Registration**

The expansion of compulsory registration to cover England and Wales is a crucial point in developing the information infrastructure of land registration for statistical use, in ensuring that the information it collected was geographically comprehensive. Before the complete extension of compulsory registration, there remained a disconnect between the information collected by the information infrastructure of land registration and the possibility of its use in the production of statistical knowledge of the housing market. As, while the information collected in areas of compulsory registration may have been comprehensive of all transactions in that area, outside of these areas, the infrastructure did not provide the means through which to know, or even to estimate, the number of transactions taking place. As a result, without a knowledge of the size of the total population of the housing market, the areas of compulsory registration could not be used as a sample of the larger housing market. Therefore, without a way to gauge the housing market as a whole, the infrastructure of land registration would only produce figures for areas with compulsory registration. This section, therefore, charts the extension of compulsory registration — a process which ran from the first application of compulsory registration to London in 1897 until 1990.

In the aftermath of the Second World War, the information infrastructure of land registration continued to operate much as it had done before the outbreak of the War. Before the Second World War, the legislative requirements for a fully formed system of land registration had been established through the Acts of 1925. Indeed, the infrastructure of land registration was already in place and functioning in London and the other areas to which compulsory registration had been extended.

However, the areas of compulsory registration were limited. The geographical scope of compulsion was limited to London (1898-1902), Eastbourne (1926), Hastings



(1928) and Croydon (1939) (National Archives 1943b). Which, except for Eastbourne and Hastings — which could not be said to have particularly lively property markets<sup>4</sup> — limited the implementation of land registration as an infrastructure to the Capital. And, although anyone in the country could register a transaction with the LR during this time of their own volition, the practice of private conveyancing remained entrenched in place outside of compulsory registration areas. This is demonstrated by the fact that while non-compulsory registration rose in the 1920s from a few hundred registrations a year to several thousand by 1936, the number of transactions registered outside of compulsory areas was still comfortably below those in compulsory areas (National Archives 1943a).

However, despite the lapse in the extension of compulsory land registration during the 1930s, the overall goal of expanding compulsion remained. Planning for the extension of compulsion continued throughout the 1930s, and Surrey was the next area targeted for expansion. It was a plan, however, which moved at a glacial pace, with the extension having been planned since at least 1935 (National Archives 1943c), and its intended implementation in 1939 being interrupted by the start of the Second World War.

Planning for the extension of compulsory registration continued through the War. The LR suggested the registration of newly purchased government land. There was a continued intention of resuming the expansion of compulsory registration into Surrey and the Home Counties following the end of the War. The Chief Registrar further imagined, as the War was still ongoing, the extension to cities such as Birmingham, Coventry, and Wolverhampton. which were badly affected by War damage, as areas which would “benefit more from compulsory registration” (National Archives 1943b).

The extension of compulsory land registration to Surrey, based on the planning and

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<sup>4</sup>With these areas having achieved 3,436 and 5,163 registration respectively by 1943 compared to 128,650 in London (National Archives 1943a)

preparation which had been taking place from the 1930s, did eventually come into force in 1952, but after which the expansion of compulsory registration stalled until the 1960s (National Archives 1953a). The stalling of land registration during the inter-war period and following the Second World War is reflective of the broader housing policies of the governments of the time. As Malpass and Murie argue:

*“Housing policy from 1945 to 1964 was very similar to policy between the wars. In the first decade after each world war, there was concentration on reducing the severe housing shortage which the War partly created. Only after about ten years in each case did the question of slum clearance reemerge, at which point the local authorities were edged out of general needs housing, leaving the field clear for the private sector.”* (Malpass and Murie 1999, pp 55)

In each case, the facilitation of market transactions, which the infrastructure of land registration was designed to enable, and was superfluous to the new policy goals of rapid reconstruction based on the state provided supply of new houses. However, while the expansion of compulsory registration during this time was redundant to government policy, the already existing infrastructure of land registration was not. The infrastructure continued to operate as it had done before the War for those who wished to take advantage of it and those with properties already inside the title system. Indeed, despite redundancy to the housing policies of the time, the eventual expansion of the system was still being envisioned by the LR. Rather, the vision of the expansion of land registration to become an infrastructure that encompassed all transactions in property was not a political priority. The system of land registration was not expanded, nor was it rolled back or contested, suggesting either the political consensus or irrelevance of the issues by the early 20th century.

The changing political priorities of housing policy following the Second World War are starkly illustrated in the changes in the provision of social housing in its immediate aftermath, followed by a rapid return of privately built housing. A trend

which is starkly illustrated by the fact that 80% of all new housing between 1945-1951 was social housing built by local authorities. By which time, 300,000 new homes were being built each year. Through the 1950s, the rate at which new housing was being built remained stable, but the provision of this housing shifted dramatically. Following the election of a Conservative government in 1952, social housing provision declined while private provision grew, from 34,000 new homes a year in 1952 to 218,000 by 1964 (Merrett 1979, pp 256). Despite the encouragement of the housing market by the Conservative government during this period, the facilitation of this market through the expansion of compulsory land registration was not a political priority — perhaps a reflection of the 19th-century Tory prejudice against the compulsion to register dealings, particularly to rural estates outside of the compulsory areas of the metropole.

The period following the end of the Second World War until the election of a Labour government in 1964 marks a period of stasis in the development of the infrastructure of land registration. The infrastructure of the 1925 Act continued to successfully function in London, the few other areas of compulsory registration, for registered title and for those who voluntarily wished to register property for the first time. The system, however, did not expand during this time to encompass further areas within the compulsory title system.

However, the election of the Labour government marks a revival in the fortunes of the LR and a rapid expansion of the infrastructure of Land Registration. The incoming Labour government made a specific manifesto commitment to “reducing the cost of conveyancing and land registration” (Labour Party 1964) — the first such commitment in any election manifesto<sup>5</sup> —, which in practice meant a programme of extending compulsory registration across England and Wales and a review of the

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<sup>5</sup>Although it should be noted the ‘land question’ dominated the manifestos of the Liberal Democrats in the 1910s, they did not discuss land registration directly but rather referred to the ‘land system’ as a whole and of land law, both of which are related to land registration but as discussed in Chapter 5 are distinct from it.

fees charged by the LR. The policy documents from this time showing that Treasury officials hoped that the expansion of compulsory registration, and thus a move away from a system of private conveyancing, would bring down the cost of housing. However, the LR itself argued that the cost of conveyancing was a distinct cost from that of a house, a system of compulsory registration would reduce such additional costs (National Archives 1964b).

The resumption of the expansion of compulsory registration from 1962 onwards started to vastly increase the reach of the information infrastructure of land registration. It was, however, a process that took a long time to complete, with the final local authorities only being brought into this system in 1990, almost 100 years after the initial legislation for the expansion of areas of compulsory registration had first been passed (Hansard 1887).<sup>6</sup> The slow logistical process of expanding registration followed the timetable set out by the Wilson government. Which first “concentrated on populated areas to the exclusion of sparsely populated areas” (National Archives 1964a).

The expansion of compulsory registration, therefore, slowly expanded between 1962 and 1990 until the whole of England and Wales was covered by the compulsory registration of transactions.<sup>7</sup> Moreover, with it the slow demise of the dual system of conveyancing by deeds and title, which had operated alongside each other since the founding of the LR in 1862.

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<sup>6</sup>With archival documents showing that when considering the expansion of compulsory registration in 1954 that the LR had seen the expansion to a new county every two years as a reasonable target, that “even at this rate it would take over a hundred years to extend compulsory registration to the whole of England and Wales.” (National Archives 1943b)

<sup>7</sup>It should be noted, however, that what was compelled and what is considered a transaction has changed over time. In particular, the 2002 Act significantly widened the scope of what must be registered with the LR. With the 1925 Act compelling only those of ‘legal estates’ (itself a slippery term (See: Cooke 2003, pp 36)) which were “conveyance on sale” and “assignment on sale” (*Land Registration Act 1925*, 1925). Thus, leaving great scope for the system of private conveyancing to endure outside of the title system, most obviously for transactions which were not sales, i.e. gifts, those held in trust, the enfranchisement or extinguishment of manorial rights, lands granted by the Crown (and indeed Crown land itself), as well as leaseholds of less than 40 years. As a result, even after the advances of the 2002 Act, while private conveyancing has mostly died out, it remains part of English land law, which applies to the transfer of a diminishing pool of properties.

## **The Secrecy of The Register in the 20th Century**

However, the use of the information infrastructure of land registration was further precluded from being used in the production of aggregate statistics due to legislation and an institutional approach that mandated the strict secrecy of the register. The strict secrecy of the register resulted from the political compromises surrounding the foundation of the LR discussed in Chapter 5. Initially 1862 '*Land Registry Act*' allowed only those involved in the transfer and ownership of an estate to inspect the register. This basis of secrecy was the characteristic approach to accessing information held by the LR for much of the 20th century. One which was slowly watered down over this time until the passing of the 1988 '*Land Registration Act*'. A shift which Berlee (2018 pp 263) characterised as moving from 'no access, unless' to 'access, unless'.

The initial easing of the secrecy defined by the 1862 Act came in the Land Registration Act 1925, which added provisions for sharing information with government departments and local authorities with a specific statutory remit or to other third parties only with the explicit permission of the proprietor. The result of which was to create a complicated nine layered hierarchical structure for access to the register, which defined what information could be accessed by whom and under what circumstances (Berlee 2018, pp 265). The implementation of these rules, however, was fractious. For example, archival documents show that LR, working under the framing assumptions of the 1862 Act, regularly refused to reveal information on the register to other government departments even when a statutory case for the access could be made. For example, local authorities could use it when wishing to identify the owners when using compulsory purchase orders. Therefore, it can be suggested that it was an approach and regulatory environment that was hostile to using the information contained in the register for statistical purposes.

The strict secrecy of the registry slowly began to soften following the

recommendations of the Law Commission in the 1970s, and the great number of bills which each added small amendments to the rights to inspect the register (For an exhaustive list see: Berlee 2018). The accumulated passing of these acts reflects both the widening reach of the information infrastructure of the land registry at this time and the value of this information outside of the process of land registration itself. The principal was of 'no access, unless' which was finally overturned by the 1988 '*Land Registration Act*', with a radical new approach of 'access, unless' (Berlee 2018, pp 265). The Act followed from the recommendations of the Law Commission (Law Commission 1985) in which the Chief Registrar described one of the main benefits of an open register as:

*The discretionary provision of sections 112, 112A and 129 [The secrecy clauses of the 1925 Act] in practice take up quite a lot of time and involve senior staff.*

*Clearly, if the register was generally open, these provisions could be swept away.*

This is to say that if the register were open by default, it could then be used by government and local authorities, as well as others with a material interest in the register, without the LR itself having to interpret the statutory powers for which the information it held could be used. This change allowed the register to be freely used for any statistical purpose when needed within the government without the need for new statutory legislation. Furthermore, the shift to an open register marked the final shift away from the last ancient vestiges of land law, which Dicey had argued remained unchanged since 1800, finally putting to an end the principle of privacy and secrecy in conveyancing (Dicey 1905; Law Commission 1985)

As a result of both the ongoing expansion of land registration and the closely guarded access to the register itself, the information infrastructure of land registration was not used in the production of statistical knowledge until the early 1990s. However, in the aftermath of World War Two, the housing system as a whole in the UK underwent a period of rapid change, from the production of social housing to the rise of owner-

occupied homes. Moreover, while the information infrastructure of land registration was not used and indeed unable to produce statistical knowledge of the changing nature of the housing market in England and Wales, figures that tracked this change were produced by other institutions.

### **Housing Market Statistics 1945 - 1990**

Until the early 1990s, the information infrastructure of land registration was not connected to the production of statistical information about the housing market. The previous section has detailed the impediments that stood in the way of using this infrastructure for much of the twentieth century. Therefore, the following section addresses the housing market statistics produced, what they showed, and how they were collected. This background is an important component of the switch to the use of land registration information as the basis of housing market statistics in the UK at the turn of the 20th century and how the collection of these measurements came to be structured.

The following section, therefore, charts what Holmans describes as “the history of house prices in Britain is short: it is very much a “modern history.””. Until the introduction of LR data in the 1990s, “nearly all British time series information about house prices is obtained from purchase lenders ” (Holmans 2005, pp259). This Chapter, therefore, starts with an examination of the first modern index published by Nationwide in 1952. It then moves on to the early national statistics of the DoE index, its evolution into the more methodologically sophisticated ‘five per cent sample’ created both in reaction to the Nationwide index and the wider ‘golden age’ of statistical production in the UK. The final part of this section then turns to the shortcomings of the DoE index and the shortcomings, which had become apparent by the early 1990s.

The first nationally produced statistic for the UK housing market was produced and

published by the Nationwide Building Society in 1952.<sup>8</sup> Known as the Nationwide House Price Index, this statistic marks an important development in the development of statistical knowledge of the housing market in the UK.

The publication of the Nationwide house market index signified two innovations in the way in which housing was quantified. Firstly, the data was based on the mortgages granted by the Nationwide (rather than drawing on auction data). The large size of the Nationwide compared to other building societies at the time and given that the majority of domestic housing transaction loans were granted by building societies (Casu and Gall 2016), made the index far more representative of the housing market and the buying patterns of 'normal households' as a whole than previous property market figures. Secondly, these figures were published as an index with a clearly defined remit, methodology, and publication timetable. The Nationwide Index in this regard was more comparable to an inflation index than previous measures of the property market or housing supply. Crucially this basis created the index as a form of time-series data which allowed figures to be comparable over time. (Fleming and Nellis 1981)

The innovations of the Nationwide House Price index marked a defining change in the way in which the housing market in the UK could be understood through statistical knowledge; as a nationally unified housing market, one which was accessible to a significant portion of the population and of which the average price and macro-trends were calculable. In contrast to singular snapshots of the market statistics produced in the pre-1945 period, this innovation allowed for temporal comparisons to be made.

The creation of the Nationwide index marked a paradigm shift in the presentation and national coordination of housing market statistics. However, its innovations were in its scope, both geographically and temporally, not in the mode of calculation

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<sup>8</sup>At the time known as the Co-Operative Permanent's (Holmans 2005)



itself. As mathematically, the index was developed out of a simple mean calculation of the transactions in question.(Nationwide 2019b) The constancy of the data sources and converting these averages to an index allowed the new figure to be used as time-series rather than a cross-section of the market. This continuity was enabled from the source from which the data was drawn. However, this source, through the Nationwide's lending practices, placed a limit on what was to be considered part of the 'housing market'. The initial innovation of the Nationwide Index led to a similar measure being adopted by the Ministry of Housing and Local Government [MHLG]. This early index, known in the literature as the DoE index — after the Department of the Environment [DoE] which inherited the index after the merger of the Ministry of Housing and Local Government and the Ministry of Transport (Sharp, Greenwood, and Walker 1978) — was published annually as an average UK house price from 1956 and later as an index.

The development of the DoE index in the mid-1950s forms part of a wider shift in the production of statistical knowledge within the UK. It formed a key part of the remit of the newly formed MHLG, with this being the:

*Third, [of four] ... tasks. These have included the encouragement of research and development, [...] the collection of housing statistics, publicity and the dissemination of information generally about housing problems and techniques.*

(Ministry of Housing, Communities & Local Government 1954, pp 4)

The majority of the statistical work of the MHLG was not concerned with the housing market or with the price of housing, but with the construction of new housing, the destruction or refurbishment of substandard housing and overall housing quality. As a memorandum on the statistical work of MHLG lays out the content of their *Housing Statistics* work:

*These include new housing started, under construction and completed in the public and private sectors; the storey heights, standards, size, cost, densities,*

*contract size and the type and use of industrialised systems in local authority housing; assistance provided for conversion and improvement; slum clearance; loans for house purchase.*(Estimates Committee 1966, pp 359)

It is only the last of these loans for a home purchase that falls under a specific house price statistic category. At this time, the priorities of the MHLG reflected the broader policy imperative of the governments at the time, which were focused on the provision and quality of housing supply rather than that of the housing market.

Methodologically the index and average price statistics published by the DoE did not differ from those of the Nationwide — relying on simple means for calculating the index. The source of the data used in the calculation of the DoE index also mirrored that of the Nationwide, drawing not on data collected at the point of transaction by state institutions — for example, land registration data — but on figures collated from the Building Society Association [BSA]. Like those used in the Nationwide Index, the association collected mortgage completion information from all British Building Societies. This data source at this time was estimated to cover 90% of housing market asset movement (Casu and Gall 2016; Fleming and Nellis 1981). In line with the government's concerns, the initial DoE index limited this sample to newly built houses.(Holmans 2005) The introduction of this national statistic mirrored the priorities of the government and the rise of the housebuilding companies who worked and constructed at a national level (Wellings 2006).

As a result of the sample on which the DoE and Nationwide index drew, they were therefore forced to work on a specific conception of what constituted the housing market. The concept defined housing as building society bank mortgage owner-occupation. And, as a result, classified *housing* not based on property use but on the financial form through which the property was owned.

The period in which both the Nationwide and DoE index has emerged and matured

has been characterised by Briscoe (2005, pp 64) as one of post-War optimism and enthusiasm for the production of national statistics. Indeed, during this time, the Business Statistics Office, the Office for Population and Census, and the pan-government Government Statistical Service were created to work alongside the wartime Central Statistical Office. These departments combined to create a range of formidable institutions throughout the 1950s whose work significantly bolstering the remit and production of statistical knowledge. And from which the basis of the 'golden age' of UK national statistics flourished.

The production of statistical knowledge was further boosted by the election of the Labour Government of 1962 and statistics of the housing market and housing provision. Wilson provided explicit support for the expansion for the production of official statistics, notably in his full support for the wide-ranging expansions suggested by the 1966 Estimates Committee, which resulted in an unprecedented "volume and quality of factual information [...] being produced by the government statistical service"(Pyatt 1968).

One small part of this unprecedented wave of official statistical was creating a more detailed set of housing market statistics by the DHLG. Officially known as 'The Five Percent Sample Survey of Building Society Mortgages', the new metric was a detailed sample survey of mortgages granted by building societies.<sup>9</sup> With the department asking building societies which were part of the Building Society Association to complete surveys on a sample of 5, 10 or 20 per cent of their transactions, depending on the size of their assets (Government Statistical Service 1975) Which, when combined, resulted in a sample size of between 4-4.85 of the housing market and represented an estimated 97% of all housing asset movement.

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<sup>9</sup>While the simple average UK house price continued to be published alongside the Five Percent Sample, the new figures continued to be referred to as the DoE despite there being an overlap in the use of this label for two distinct time series (for details of these distinctions see (Government Statistical Service 1975)).

That a sample survey, answered by building societies, was used to collect this data reflects opportunities and limitations of the statistical methodologies of this period. Firstly, the limitation which severely curtailed the ability to collect such data in any other way was that the use of transactional land registration data at this time was not possible, either as the means of collecting a representative sample or of the DHLG being granted access to this data. Moreover, statistical data on the mortgage market was not collected by any other statistical agency, as financial lending was not classed as a 'trade' for the purposes of the Statistics of Trade Act (Hansard 1947), and therefore there was no statutory duty for lenders to record or provide this information for statistical purposes (Holmans 2005). Secondly, the use of survey methods represented the cutting edge of statistical methods of the time. Indeed, the mid-1960s to 1970s has been described as the 'golden age' of the survey (See: Savage 2010), when their use was being pioneered by sociologists and social scientists in which their findings were considered as "a public good rather than just for the government's own purpose" (Rhind 2019, pp 121). Thirdly the size of the survey and the calculation of the ensuing records highlighted both the possibilities and limitations of the technology available at the time.

Indeed, the survey's size reveals both the strengths and limitations of the DoE index and the limits of statistical knowledge of the housing market independent of the information infrastructure of land registration. The survey itself resulted in between 18,000 to 28,000 individual transactions being collected, with the final results of the index being calculated by the recently founded National Computing Centre (Government Statistical Service 1975; Organ 2003). Before the availability of computational methods, it would have been unfeasible to processing this number of results. However, despite the size of the underlying population of the DoE index, sample size remained an issue. As, while the figures generated from the sampling method were representative at a national level, at a regional level, the variation between the size and geographical scope of building societies made "quarterly

index values vulnerable to random fluctuations” (Holmans 2005, pp 260).

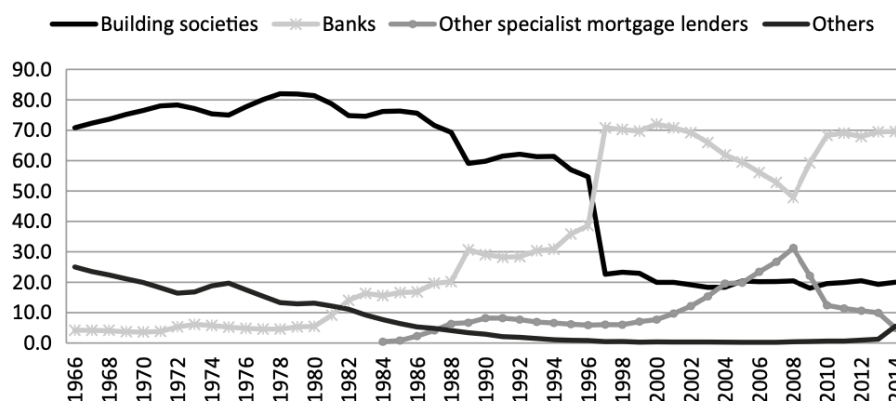
This reliance on the sample survey of BSA members meant that the DoE index could never be fully representative as the underlying population of the housing market transactions were not known. Rather, only transactions financed by BSA mortgage were part of the BSA sample, which was itself a subset of all housing transactions. As a result, while variation within this subset could be statistically adjusted, variation outside of it could not. Indeed, this is one of the limitations of the production of housing market statistics at this time, outside of the information infrastructure of land registration, is that its definition of housing relied on ownership structure rather than property use. As a result, homes that were not purchased through Building Society Mortgage — significantly those at the top end of the property market — were entirely missed by national housing market statistics.

The question of how representative the DoE index was of the property market as a whole was not a particular concern when the five per cent sample was first created, with the majority of all owner-occupied housing being and facilitated by Building Society Lending. However, changing housing market conditions and housing market policy meant this sampling strategy was no longer broadly representative of the housing market by the 1990s.

There are three main sources for changes in the housing market by the 1990s, which undermined the statistical representation of the housing market in the DoE index. Firstly, by the 1990s, building societies were no longer the only lenders available to households looking to purchase a house. Building societies lending strategies faltered, and commercial banks aggressively entered the mortgage market by directly targeting consumers — this change is demonstrated in Figure 6.1.

Secondly, by the early 1990s, the residential housing market’s composition had begun to change following the 1988 Housing Act. The private rental sector emerged from its lowest ebb in UK history in the mid-1980s as a leading growth sector in the

Figure 6.1: Mortgages by Lender Type — Reproduced from (Casu and Gall 2016, pp 32)



**Fig. 2.1** Historic mortgage market shares (%) (*Source:* Data from BSA, Compendium of Housing Statistics, Bank of England, Authors' calculations). (*Note:* "Others" includes public sector and local authority, Pension Funds, and insurance companies. The increase in 2014 reflects a reclassification from Other Specialist Lenders. "Other specialist lenders" includes the lending subsidiaries and Special Purpose Vehicles of banks, many of which were taken back on to banks' books in the wake of the financial crisis. Building society lending subsidiaries are included in the building society series from 2005 onwards.)

1990s. The introduction of buy-to-let mortgages in the early 1990s and growing commercial activity saw the proportion of residential transactions being conducted by owner-occupying households starting to fall for the first time since the Second World War (Leyshon and French 2009). Thirdly, that by the early 1990s, it was estimated that 25% of housing market transactions were paid for in cash (Wall 1998). This figure was tied up in both the growth of commercial activity for domestic dwellings and households, often buoyed by the growth in the value of their own home, to move 'up the ladder' without the need for mortgage financing. Consequently, none of these transactions would be captured by the DoE figures, shrinking its representative ability and missing crucial growth areas of activity within the domestic property market.

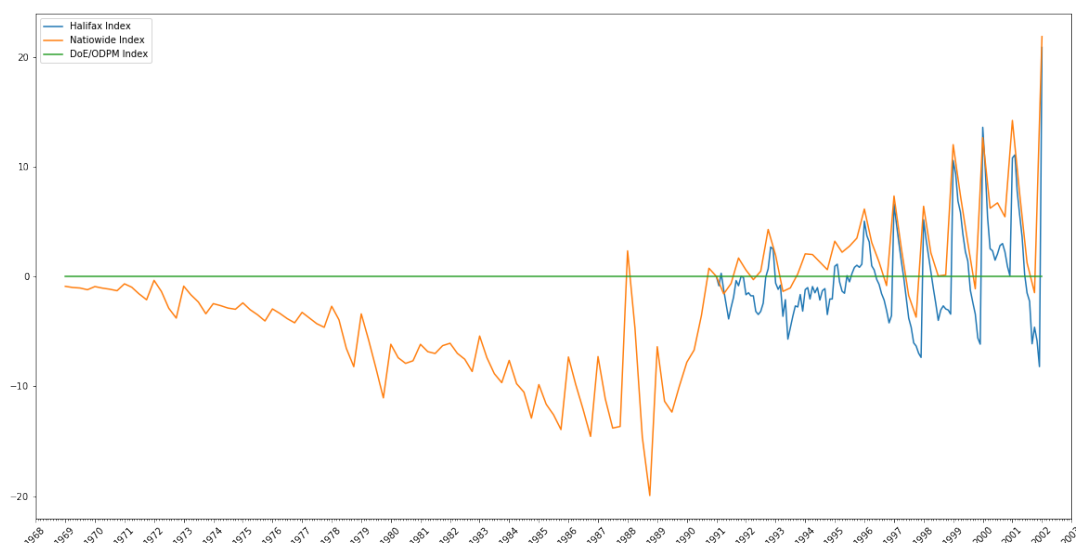
In addition to the underlying data on which the DoE index drew, by 1990, the

methods by which it was calculated had been overtaken by new statistical advances. The DoE index used a mix-adjusted methodology to the data it collected — a development which again followed on from the addition of characteristic information and regional adjustment adopted by the Nationwide index in 1959 (Fleming and Nellis 1981) — to adjust for variations in the types of houses and their location. While these mix-adjusted approaches were statistically cutting edge when they were first introduced in 1964, they had since been surpassed by other advances in measuring and calculating housing indexes. In the intervening years, these advances had been adopted by other lending institutions. Firstly, by the Nationwide, which significantly expanded the number of variables used and revised its weighting strategy in 1973 (Fleming and Nellis 1981) and then by the Halifax in the use of a hedonic model in 1985. This was a far more complex statistical methodology to its index in a move which “represented a major advance in the measurement of house price changes throughout the country”. As, “unlike earlier series, and house price statistics produced by other institutions, the new figures issued by the Halifax were standardised rather than based on simple price averages” (Fleming and Nellis 1983).

The shortcomings of the DoE index can be illustrated by comparing the two leading lender indexes at the time, the Nationwide and Halifax. Figure 6.2 which I have created illustrates the divergence between these indexes and the DoE index over this period, and demonstrates both the growing divergence and volatility between each measure. The Halifax and Nationwide index tracked each other more closely than those of the DoE. Furthermore, the figures produced by both of these indices could be considered to track changes in the housing market more accurately and in a timelier manner. The Nationwide published quarterly and the Halifax monthly, compared to the yearly release of the DoE index.

Both the Halifax and Nationwide index were not without their faults; academic

Figure 6.2: Divergence Between DoE/ODPM, Halifax and Nationwide HPI by Index Points



Note that the three index's are published at different intervals, with the DoE index being published annually, the Nationwide index quarterly, and the Halifax monthly. Base year standardised across all datasets to 1991. DoE index 1969 - 1992 is the 5% CML Building Society Sample, 1992 - 2002 is the CML 5% sample of all CML members (Office of the Deputy Prime Minister 2002). Nationwide index 1960 Q1 - 1973 Q4 - weighted average using floor area, 1974 Q1 - 1982 Q4 - weighted averages using floor area, region and property type, 1983 Q1 - Onward, Hedonic Regression Methodology, 1993 - Onward, additional ACORN and Census weightings (Nationwide 2019a).

research has shown that some divergence between these indexes is the result of firm performance (Costello and Watkins 2002) and that each index was slightly biased towards regional trends — the Nationwide by the South East and the Halifax by Yorkshire and Scotland (Nicol 1996). Nonetheless, these two indices by the 1990s had distinct advantages over the DoE index, both in being published far more frequently than the DoE index and using methodologies that were more reliable for sub-national figures. They also both featured characteristics such as new-build housing or first-time buyers, and at regional and sub-regional levels — each of which was of particular interest to many government departments (Fenwick and Duff 2002).

Between 1945 and 1990, the production of statistical knowledge of the housing



market was divorced from the information infrastructure of land registration. At the start of this time period, this infrastructure was not a form that would allow the production of such knowledge. Firstly, with the limited scope of compulsory registration, comprehensive transaction information was collected only in London. Secondly, that access to the register remained strictly guarded under the 1925 Act and as an institutional prerogative of the LR, in effect ensuring that the information collected remained strictly confined to the machinery of conveyancing.

These barriers to using the infrastructure of land registration for statistical purposes were broken down throughout this time period. First, through the expansion of compulsory registration throughout England and Wales. Which, once begun under Wilson in 1964, steadily extended until the last areas were brought into the title system in 1990. Second, that secrecy of the register was slowly chipped away during this time, with a regime of 'no access, unless' being overturned into one of 'access, unless' with the 1988 Land Registration Act.

Over this period, the production of housing market statistics developed in increasing reach and complexity outside of the information infrastructure of land registration. First, the development of national house price indexes by the Nationwide and the DoE, through the creation of the 5% sample to the use of new hedonic methods by the Halifax index. The scope of which, although seeking to be nationally representative, were limited in data on which they drew, capturing the housing market only via the lending of Building Societies. By the start of the 1990s, the national statistics of the housing market became increasingly limited in their ability to capture the dynamics of the housing market.

## **Towards the Creation of the HPI**

The early 1990s mark the beginning of a decades-long process of utilizing land registration information for statistical purposes. The recommendations from several

reports in the early 1990s became the base for deriving a set of housing market statistics from information collected by the LR; a process which after almost three decades resulted in the House Price Index [HPI] being designated as an Official National Statistic (Office for Statistics Regulation 2018). The following section will discuss how the Genesis of the use of land registration information for statistical purposes is not found in the growing scope and sophistication of the infrastructure of land registration but in growing dissatisfaction with current housing market statistics.

### **The Performativity of the DoE Index**

By the early 1990s, the composition and dynamics of the housing market in the UK were undergoing significant change, and, as a result, the shortcomings of the DoE index were becoming more apparent. This section details how the housing market was quantified and the moves taken to create an improved measure of the UK housing market. This section details the shift towards using land registration data as the primary source of official housing market statistics beginning in 1994 with a Retail Price Index Advisory Committee report. This section further explores the importance of the quantification of the housing market for the management of the UK economy.

The previous section ended by detailing the shortcomings of the DoE index. This section does not delve into these issues further but instead discusses their importance for how they linked to a wider ecosystem of government statistics. As the (Wall 1998) report notes, in a comment directed at the DoE index that; “All main [government] users expressed a need for an index that was representative of all house purchases, whether cash or mortgage-based whether or not the index itself covered both.”(Wall 1998).

The shortcomings of the DoE index and the possibilities of replacing it with a new measure based on land registration data was first explicitly raised by a 1994 report published by the Retail Price Index Advisory Committee [RPI-AC] (RPI Advisory Committee 1994). This report marks the first serious government assessment of the DoE and the development of other house price measures since the Five Percent Sample was launched in 1964. The Committee's focus was, in particular, the 'Treatment of Owner-Occupied Housing Costs' in the calculation of inflation, which while not explicitly seeking to assess house prices, required house price values to be considered as part of the calculation of measures of inflation — which at the time of the report relied on the DoE index. The publication of this report marks a significant shift in the understanding and use of house price indices in the UK. Its publication acknowledges that such figures are not just descriptive of the housing market but are performative in creating other statistical figures and shaping economic policy. Furthermore, it relies on the data sources and statistical methodology accurately capturing and quantifying the housing market for the performance of national economic management. The publication found that the DoE index of the time was no longer adequate for this purpose, setting in motion the sequence of reports, reviews and committees that led to creating the Single Official HPI — which the following section charts.

The importance of a housing market index and how the calculation of the DoE index went on to act in the wider economy and system of economic management is summed up in a 2007 report by the Royal Institute of Chartered Surveyors, which explains how:

*“House prices feed directly into the RPI, through measured physical housing depreciation and mortgage interest payments: physical housing depreciation represented approximately one-third of annual RPI-X inflation in December 2002. This, in turn, plays a significant role in the setting of interest rates by the*

*Monetary Policy Committee.”* (Royal Institute of Chartered Surveyors 2007)

The calculation of the DoE index thus did not only describe the world, but it also acted in it in a highly direct manner — one which formed a loop back to the housing market itself through the Bank of England Interest [BoE] Rate informing the mortgage market.

The link between the housing market, housing market statistics, and the BoE rate has not been consistent in its form but rather forms a network of interconnected parts which have changed over time. At the time of the RPI-AC 1994 report, there was a direct link to the calculation of the RPI through the DoE index, although the setting of interest rates in response, at this time, remained a political decision made by the Treasury. Throughout the 1990s and early 2000s, the relation between the parts of this system transformed; through the granting of independence in setting interest rates to the Bank of England; in the switch from RPI-X to CPI measures of inflation; and the 2% inflation target set by the Treasury (Kynaston 2017). To explain the detail of all these changes and their response to and treatment of the housing market is beyond the scope of the research presented in this Chapter. However, without delving into the evolution of a complex system of interdependence between these moving parts, it continues to be empirically proven that there is a causal relationship between inflation, the housing market and the interest rate set by the Bank of England. This extends from the filtering of the BoE interest rate, through financial markets, to mortgage repayments of households (Becker, Osborn, and Yildirim 2012)<sup>10</sup> to a structural long and short-term impacts on to house prices themselves (White 2015).

While the switch from RPI-X to CPI removed the direct link between the calculation of inflation and the DoE index, house prices measurements continued to be central

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<sup>10</sup>Although this one shows to be asymmetrical, in a manner which favours financial lenders rather than household borrowers.

to monetary policy.<sup>11</sup> The importance of house price indexes in the setting of monetary policy is clearly stated by Nickell in his account of his work on the Monetary Policy Committee [MPC]. In this account, he discusses how the direct link between the calculation of house price growth as a variable in RPI-X and that following the switch to CPI, house price inflation continued to be one of the main concerns of the MPC. This concern was further complicated by the data which was available to the BoE. With Nickell resorting to mixed Halifax/Nationwide figures rather than DoE index for his assessment of house price growth and ongoing property market trends.<sup>12</sup> Indeed, as Fenwick and Duff (2002) notes, the availability and reliability of housing market figures have been an ongoing issue for the BoE, with “ differences in trend between the existing indices have created problems of interpretation for the Monetary Policy Committee of the Bank of England”.

The quantification of the housing market was thus of great importance to how the national economy was managed through monetary policy. The MPC, therefore, acknowledges such measures to be performative in their effect. In both the DoE directly factoring into the calculation of RPI-X and after the switch to CPI through the weight, such measures were given by members of the MPC. Consequently, the scope and accuracy of housing market statistics were of great importance. The RPI-AC first raised concerns about the suitability of the DoE for this task and suggested that land registration data could form the basis of an improved house price measure.

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<sup>11</sup>The inclusion of Owner-Occupied Housing costs in measures of inflation has been a point of great debate amongst economists, as the Consumer Price Index Manual states, “The treatment of owner-occupied housing in consumer price indices (CPIs) is arguably the most difficult issue faced by CPI compilers. Depending on the proportion of the reference population that are owner-occupiers, the alternative conceptual treatments can significantly impact the CPI, affecting both weights and, at least, short-term measures of price change.” (International Labour Office 2004, pp ). For a detailed exploration of owner-occupied housing costs, see: (Eurostat 2017)

<sup>12</sup>Which by this time had moved from the Department of the Environment to the Office of the Deputy Prime Minister, and was therefore known as the ODPM index. However, the designation of this index as the DoE index has been used throughout this Chapter regardless of the time of publication for clarity.

## Housing Market Statistics 1990 - 2016

The creation of a single definitive national statistic was thus of clear importance to the macro-economic policy in the UK, with measures of the housing market not simply reflecting trends in prices but performing in the management of the economy. The final part of this section charts the coming together of the data collected as part of the information infrastructure of land registration and the production of statistical knowledge of the housing market. Arguing that while the use of land registration was the best available data source for the creation of new statistical knowledge of the housing market, the purposes for which this information was collected did not fully align with that of the ‘machinery of conveyancing’.

Which it was believed would address many of the perceived faults of the DoE index. The RPI-AC suggested that:

*“In the longer term it may be possible to produce an index from the Land Registry data on all purchases in England and Wales irrespective of sources of finance and the Committee recommends that the CSO investigates this.”* (RPI Advisory Committee 1994)

It is from this point onwards that the data collected by the information infrastructure of land registration began to be brought into the production of housing market statistics. The convergence of which, however, was not a straight forward process, taking almost 25 years from the recommendations of the RPI-AC to the Official Single House Price Index [HPI] being designated as an official national statistic in 2018 (Office for Statistics Regulation 2018). The remainder of this section tracks this convergence and covers; the digitization of records held by the LR, the problems faced in the lack of attribute information collected by the LR, and creation of new house price indexes culminating in the creation of the HPI.

The timing with which the RPI-AC made its recommendations for the use of land

registration was well timed to the changing nature of the infrastructure of land registration itself. There are three reasons why the early 1990s mark a distinct shift in the access to, and availability of, land registration data for statistical purposes. Firstly, the extension of compulsory land registration had come into force in all of England and Wales by 1990 — as detailed in the previous section. Secondly, that the provisions access to the register itself had undergone a significant change in 1988 — also discussed in the last section — effectively ending the secrecy of the register. Finally, by the early 1990s the LR was in the final stages of the computerization of its transactional data. The advent of the full computerization of these records, the changes to the legal access of these records, and the comprehensive nature of the data now collected enabled new possibilities in the use of land registration data for statistical purposes. This allowed for easy electronic access to comprehensive and up-to-date data for statistical purposes — crucial without requiring the implementation of additional work on behalf of the statistical agencies.

The process of the digitization of information at the LR began well before the 1990s in the early 1970s. The digitization of the records LR entailed a great deal of technical and administrative work, but the switch from paper forms to digital databases itself did not fundamentally reconfigure the content or schema of the data held by the LR.

The first investigations into the use of digitized records began in 1971 with a feasibility study into the digitization of ‘records to title’ (National Archives 1984a). The LR was keen to investigate the advantages of the switch to a computerized database, in response to the growing difficulty of the sheer amount of information which it found itself having to archive, following the expansion of compulsory registration areas. The archival research I did reveals the scale of problem the LR was facing with Correspondence between LR officials in 1969, showing alarm over growing logistical requirements, with the LR already making use of 13 miles of shelf

space and estimating that this would grow at approximately another 2 miles per year (National Archives 1969b). This problem was managed in the short term by the ruthless weeding of documents which, as a result of the switch to the title system, were no longer of strict legal relevance — such as deeds before the establishment of the root title, expired leases, and most documentation which was older than 15 years after the last registration event (National Archives 1969a). The digitization of records to title began in 1984 with the LR instead first computerizing the Land Charges system and digitizing the records it already held in 1974 and later the Index of Proprietors Names [IOPN] (National Archives 1984b,c) . A task which was fully complete in 1995<sup>13</sup> — just after the suggestions for the use of this data made by the RPI-AC (National Archives 1996).

The use of the data collected by the LR was an obvious choice as the base for a new housing market index. Primarily for the scope of the information collected by the LR, which following the expansion of compulsory registration, was now comprehensive for all areas of England and Wales. Thus, a new index would be based on the whole population of housing market transactions rather than a sample mediated by building societies as the DoE had been constructed. As a result, a new measure based on land registration data would cover all transactions regardless of financing — thus covering the growing proportion of cash purchases and buy-to-let mortgages which were a particular concern of the RPI-AC and MPC. Furthermore, the size of the data collected would allow for detailed sub-regional breakdowns and avoid the biases of market share and geographical fluctuation which afflicted private indexes. And, as a result of the digitization of records would be available to statistical agencies on a monthly rather than yearly basis.

Following the suggestion of the RPI-AC first of which was an internal feasibility study conducted on the LR data by Fleming and Nellis (1996). These two authors

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<sup>13</sup>It is for this reasons that the LR Price Paid Dataset used in the next Chapters starts in January 1995.



have also been responsible for the design of the Halifax index (Fleming and Nellis 1983) and for pioneering the use of hedonic method for housing market price estimation in the UK. They applied a similar methodology to the newly available LR data. However, their study found that:

*“in spite of the extremely large size of the Land Registry database, its explanatory power was lower than that provided by the DETR and Halifax databases”* (From: Wall 1998).

The reasons for this being that despite the far larger sample size of the LR data it lacked any accompanying characteristic information. As, while the LR data collected information on properties being transacted as part of the land registration process, it collected and stored only that which was legally relevant to the facilitation of conveyancing. When turning to this information for statistical purposes the only information which was thus available was the location and price of each transaction. However, when applying statistical methods this information was insufficient to the heterogeneity of the underlying housing — the methodological details of which are unpacked in the following Chapter. As a result, the application of hedonic statistical methods to the newly available LR data could not initially surpass the exiting metrics.

Fleming and Nellis initial feasibility study showed that the data now collected and processed by the LR may make a suitable basis for a new house price index in the universality of the housing market it presented. An index which through utilizing the information infrastructure of land registration would address many of the flaws of the DoE index. However, the lower explanatory power of their feasibility study also showed that the creation of a new comprehensive index would not be as simple as switch the basis of housing market statistics to the new LR data. In reaction to this initial hurdle several government departments experimented with producing their own house price index's, including the recently formed Office for National Statistics

[ONS], the Department of the Environment, Transport and the Regions [DETR] which as part of a Whitehall shakeup took over the DoE index, the Bank of England creating an internal measure for the Monetary Policy Committee and the LR themselves (Wood 2005).

The LR also experimented with collecting additional data which would address the issues raised by Fleming and Nellis. However to acquire the range of information sought, such as the number of rooms or age of a property, would have required statutory intervention (Wall 1998). In an effort to circumvent this obstacle the LR tried to collect this information on a voluntary basis. However, this yielded few results with majority of transactions failing to fill out the voluntary supplementary information on the characteristics of the properties in question (Fenwick and Duff 2002).<sup>14</sup> The small sample size of the information which was collected through this process further hindered the creation of a new index as it was unrepresentative and could not accurately adjusted.

In seeking to understand the convergence of the information infrastructure of land registration and the production of statistical information about the housing market it is notable that the Land Registration Act 2002, the last major piece of land registration legislation in the UK did not include any provisions for the collection of such characteristic information for statistical purposes. The Act itself is characterised by Cooke (2003 pp 158) as “a vast piece of lawyers’ law” which “repeals an unsatisfactory statute and substitutes a better one, making the law more consistent and more workable.”. In the context of the information infrastructure of land registration it is notable for three main reasons. Firstly, that the Act enabled the switch to a full system of e-conveyancing, allowing all aspects of registration and the transfer of property to be switched to digital platforms. Secondly, that the

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<sup>14</sup>One can speculate that this is a result of the manner in which land registration functioned as an information infrastructure. With the professional solicitors who were most likely to be involved in the filing of documents with the LR being unlikely to know much about the actual property which they ushering through the machinery of conveyancing.

'trigger' events for the compulsory registration of property were vastly expanded, in effect ending a dual system of private conveyancing and the underlying feudal basis for the ownership which persisted in some forms of land ownership.<sup>15</sup> In effect meaning that "nearly, but not quite, everything one does with a legal estate in land triggers registration" (Cooke 2003). Thirdly, that despite these changes the collection of additional information for statistical purposes was not included. The absence of which is demonstrative of the continued gap between the purpose of the infrastructure of registration as a 'machinery for conveyancing' and the aims of statistical agencies to quantify the housing market. In that, the inclusion of such a provision would have been a minor statutory and administrative intervention (one which in practice would have extended to a few extra boxes on a TR-1 form) but was not countenanced as it was contrary to the purpose for which the LR was run as a legal facilitator of trade in property.

The changes brought about by the 2002 Act resulted in a dramatic uptick in the percentage of land in England and Wales which was registered with the LR. Charting exactly how much of a difference this made is difficult as prior to the introduction of the Act, no figures on the overall percentage of land registered land in England and Wales were regularly kept (Hansard 1995). With the passing of the Act "the land registry anticipates something like a 40 per cent rise in first registrations as a result from October 2003." (Cooke 2003, pp 156). And, in comparing the figures first published by the LR in 2006, when an estimated 50% of land in England and Wales had been registered, with the figure of 88% in 2016, shows the impact the 2002 Act had (Land Registry 2006, 2016).

While the 2002 Act drastically increased the reach and scope of the information

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<sup>15</sup>The only remaining areas of law in which private conveyancing could be practised were; leaseholds under seven years; dealings with rent charges and franchises of yet unregistered land; dealings in public-private-partnerships leases; and dealings with manors (Cooke 2003, pp 157). With the Act even including specific provision which allowed land held by the Crown to be registered, a previously impossible task as Crown land contained to be owned under the feudal 'in demesne', i.e. absolutely (Cooke 2003, pp 165 )

infrastructure of land registration, the question of how the information now collected by the LR could be used for statistical purposes continued to be developed throughout the early 2000s. The lack of characteristic information beyond the price and location of the property being transacted remained a stalling point in the development of new house price indexes.

In 2003 the DoE index became the responsibility of the Office of the Deputy Prime Minister [ODPM], and received a methodological refresh. The ODPM index did not switch to LR transactional data as the main source of its data. Instead it relied on the Society of Mortgage Lenders [SML] sample, in essence an expansion of the same data source as the BSA to include high street banks which was administered by an expanded professional association. Rather, the LR data played a minor role relative to the size of the data it represented, being used as part of the mixed-adjustment weighting on an expanded selection of SML data (Office of the Deputy Prime Minister 2003a,b). A use, which while only making a small contribution to how the ODPM index was calculated represents the first incorporation of data derived from the information infrastructure of land registration into the production of official statistical knowledge of the housing market.

Following the inclusion of LR data into the ODPM index, the LR itself developed its own set of statistics based on the data which it collected. First through a simple mean of monthly, quarterly and yearly housing market transactions, and then developing a more sophisticated repeat sale model in 2007 (Royal Institute of Chartered Surveyors 2007). As the name suggests, repeat sale models are constructed by comparing the sale price of the same property at two points in time. A basic repeat sale model therefore only requires data identifying a unique property location, the date at which the transaction took place and the price of the property — which is the extent of the transactional data which was recorded by the LR.

However, while the data collected by the LR was sufficient for the needs of a repeat

sales model, a number of potential issues exist in such models which make them less than ideal for the construction of house price indexes. These included; changes between sales which the model cannot account for from depreciation to extension to each property, sample selection bias of properties which are transacted more frequently (for a potentially wide variety of reasons) and, that this method makes poor use of the extent of the available data often limiting its use for frequent (i.e. monthly) updates and for sub-regional measures (See: Eurostat 2013; Haurin and Hendershott 1991). As a result, Eurostat caution that:

*Although a natural starting point for constructing an index, the repeat sales method is not preferred over the (stratified) hedonic method for constructing a constant quality residential property price index.*(Eurostat 2013, pp 160)

As such, the creation of the LR house price index did not fully address the needs of many of the government users of the index. The LR index joined a proliferating number of housing index's in the 2000s each of which sought to address how the housing market could best be quantified. This included house prices index produced by the government such as, the ODPM index, the LR index, an experimental and internal BoE index, and a Scottish index produced by the Registers of Scotland, and private index produced by: Nationwide, Halifax, Rightmove, Academetrics, RICS, Hometrack and the University of Ulster. As a result, while the early 2000s saw the data produced by information infrastructure of land registration incorporated into the production of statistical knowledge of the housing market the confluence of the two did not address the fundamental reasons which had driven this process.

It was on the basis of these accumulated house price indexes, each of which took a differing approach and data source as to how the housing market could best be quantified that a comprehensive review of housing market indexes was launched by the National Statistician in 2010 (National Statistician 2010). Which found that:

*Differing needs for house price information over time has led to a suite of*

*different measures. These different measures can lead to different and sometimes contradictory messages being drawn depending on which source is used. In turn, this can make it more difficult for users to make clear decisions based on the available information. (National Statistician 2010, pp 5)*

With the report recommending that:

*A single definitive house price index and accompanying statistics should be produced by the official statistics producer community. This index should:*

- 1. Represent the prevailing market price of residential property at completion of sale.*
- 2. Measure both house prices and house price inflation based on the price paid for transacted properties.*
- 3. Have a UK coverage.*
- 4. Generate estimates (at least) monthly.*
- 5. Be timely with minimal revisions.*
- 6. Be available as a seasonally adjusted and an unadjusted series.*
- 7. Provide a consistent index series to enable trend analysis.*
- 8. Provide robust sub-regional estimates and estimates for user defined areas.*
- 9. Provide comparable estimates for sub-sets of transactions or properties.*

(National Statistician 2010, pp 6)

A list which consolidated many of the previous criticisms previous levelled against the existing indexes and laid out a criterion which a new index should seek to fulfil. The immediate impact of which, however, was not to unify the existing measures but to spawn another house price index produced by the ONS and based on integrating the LR data with the ODPM methodology. The existing index continued

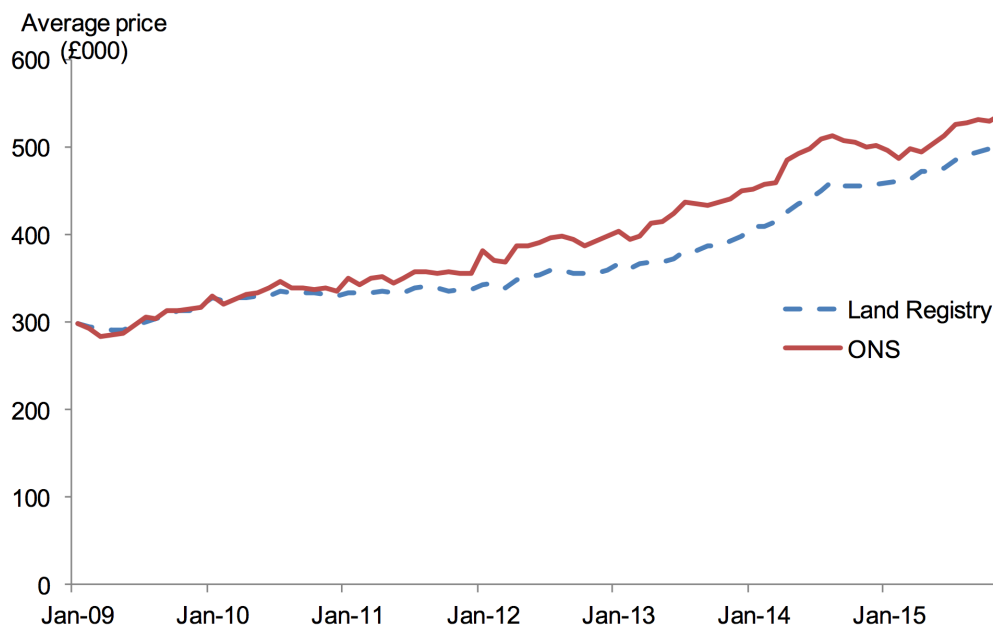
to be produced alongside the new ONS measure. As a result of the differing methodologies on which each index was based began to diverge over time, further adding to the issues of interpretation which had been raised by the 2010 report.

Despite these issues in the conflicting results and methodologies used in the construction of the ONS and LR house price index their creation marks an important change in the relation between the infrastructure of land registration and production of statistical knowledge of the housing market. For the first time since the creation of the LR and of the production of housing market statistics, all main measures of the housing market in England and Wales were based on information which was primarily collected as a result of the process of land registration. Consequently, while the purpose of information infrastructure of land registration as a 'conveyancing machinery' may not have been fundamentally altered, this machinery could now be said to be inextricably linked to the way in which the housing market became known.

Figure 6.3 shows the divergence between two house price statistics produced separately by the LR and the ONS. As the report notes, this divergence is the result of "differences in coverage, the source data and methodology used" (ONS 2016). Which, the 2016 report into which found that the discrepancy between the two indexes had understandably resulted in "difficulty in understanding and interpreting the data" amongst those seeking to understand the housing market in the UK (ONS 2016).

The divergence between the ONS index and the LR is addressed in the 2016 ONS proposal for the creation of a Single National House Price index. The report signalled the start of the joint ONS and LR creation and an end to the production of multiple differing indexes across different government departments. Which led to a series of consultations and the development of a new index methodology discussed by the LR

Figure 6.3: The Divergence between ONS and LR house price indices for London



(2014) and the ONS (2016). The result of which was the creation of the Single National House Price Index which began to be published from 2016 onwards.

The resulting HPI fulfilled all of the criteria laid out by the National Statistician's 2010 report. The HPI itself was constructed on the bases of a hedonic regression model which at its core was based on land registration data captured by the LR. And, with it cementing the new role of land registration as the means through which statistical knowledge of the housing market was produced. However, the requirements of this model could not be meet solely by the data collected by the LR. Rather, the final HPI is at its base is that of the 'atom' of the registration of title recorded by the LR but which is supplemented by a system of filtering and organizing LR to classify 'appropriate' transactions and of further data collected outside the information infrastructure of land registration. This research coins the term 'statistical superstructure' to capture the additional layers of administration, maintenance, data processing, and quality assurance which are required for the



construction of the HPI. The term ‘statistical superstructure’ builds on the quote which opened this Chapter from Lady Hale who refers to the “system of land registration [as] merely conveyancing machinery” (The Supreme Court 2014) by acknowledging the core purpose of the information infrastructure of land registration as the facilitation of the transfer of property. It is for this reason that the work of the LR and the information which it collected was divorced from the quantification of the housing market for over 150 years. To create the HPI thus required a ‘superstructure’ to be built on top of the infrastructure of land registration to capture and process the additional information needed to quantify the housing market. The term ‘statistical superstructure’ thus refers both to its purpose and specifies that its work and organisation is auxiliary to the ‘machinery of conveyancing’. Moreover, it seeks to specify that this work does not alter or amend the infrastructure of land registration but is rather built on top of an already existing process. The methods and sources of which are taken up further in the following Chapter where the research examines the methodology and data sources of the hedonic model on which the HPI is based.

The section has traced the use of land registration as the basis for a new national housing market index. It has drawn on the previous sections to provide a context as to why this data became available in the early 1990s and provided a distinct advantage over the use of other data sources. In doing so, it has shown that the creation of a new housing market was not as simple as switching the source of the data used. With early attempts to use land registration ,while being far more comprehensive than existing measures, providing less explanatory power. Over the following two decades land registration data was slowly incorporated into a number of official housing market statistics — the number of which began to proliferate. It was as a result of the divergence between different official housing market figures that the HPI itself was created to serve as a single authoritative national index. The HPI was based fully around land registration data bringing

together the information infrastructure of land registration and the production of statistical knowledge of the housing market.

## **Conclusion**

This Chapter has traced the relationship between the information infrastructure of land registration and the production of statistical knowledge of the housing market. It has demonstrated that from the founding of the LR in 1862 until the early 1990s the information collected by the LR did not contribute to statistical representations of the housing market. The reasons behind this were rooted in the purpose for which land registration was implemented; not to know or tax the property market, but as a machinery for the efficient conveyancing of property. In the 1990s this began to change as a result of the move to create a new housing index, based on LR data, through building what I have named 'statistical superstructure' on top of the infrastructure of registration.

The history of housing market statistics and their development matter because they are the means through which the housing market becomes known. In turn how the housing market becomes known conditions what can be learnt about the housing market. As the research presented in this Chapter has shown, before 1952 there was not a measure of the housing market, only disparate attempts to quantify the property market. However, from the creation of the DoE/5% index a national housing market statistic was produced and as a result of the data sources and methodology used created a specific vision of the housing market as owner-occupied housing bought through building society mortgages. These figures did not just describe the housing market but acted in the world, directly affecting inflation, the interest rate and the growth of housing market itself. It is because of the performativity of the DoE/5% index, and its inadequacies, that BoE led the creation of a new housing market measure.

To study the housing market, its relation to elites, and inequality requires an understanding how the housing market becomes known. As this Chapter has shown the process of the quantification of the housing market affects all these areas of study. This process defines what constitutes the housing market, what kind of properties and transactions are counted, how they are aggregated into creating a national picture, and as a result how housing market statistics act in the world. The performativity of housing market statistics also has bearing on how social scientist through their own research seek to understand and therefore act upon the world. This research therefore vitally highlights what may have been previously missing from analysis of the housing market across the social sciences creating the potential for future insights.

# Chapter 7: Quantifying the Housing Market

*“Whilst in reality there is no such thing as an average house, there is a user need for a single number.” (National Statistician 2010)*

## Introduction

As the National Statistician attests, there is no such thing as an average house, but there is an average house price. This Chapter examines the work that goes into the average house price as a process of abstraction and quantification. It asks what can be learnt about the relationship between housing and elites from this process of quantification, both in what is and is not captured in this process and what can be learnt from the data sets and figures produced as a result of this process.

The research presented in this Chapter asks:

What can be learnt about elites and housing from statistical knowledge which derives from the information infrastructure of land registration?

It splits this question into two parts; the first examines how statistical knowledge of the housing market is produced and manifested in the HPI, and then examines what can be learnt about the relation between elites and housing from the statistics and datasets which derive from this process.

In critically approaching the production of the HPI, the first section of this Chapter is split into three subsections, each of which tackles a different element in the construction of these statistics. The first sub-section starts by interrogating the econometric methodology of hedonic regressions and their application to residential property price indexes. This research explores the mismatch between economic theory on which the HPI is based, the endless heterogeneity of the built environment, with the statistical and material limits of the actual construction of the HPI. The theme of the miss-match between the ideal residential property price index and the realities of the data available in the construction of the HPI is taken up again in the second subsection. In this section, it will be considered how the construction of this statistic matches up with the functioning of the information infrastructure of land registration. This section examines how the LR classifies property transactions as part of the 'housing market' and the extent to which this aligns with the definition of houses on which house price indexes are being brought into question in the context of elite participation in the housing market. The third section explored the gap between the information captured by the information infrastructure of land registration and the data needed for the calculation of the HPI; through examining the data used to supplement the LR transaction records. In particular, this section examines the inclusion of ACORN data as a reduction of the social world into the HPI and questions its inclusion in the quantification of the housing market. The close reading of the HPI this section contributes is drawn on in the research that follows in the second half of this Chapter and the subsequent Chapter. Through understanding in detail the HPI, its data sources and its methodology, this research is able to tease out the high-end properties of today's elite, which are missing from official housing market statistics and unpacking the functioning of the information infrastructure of land registration that has led to their omission, and to add them back in.

The second part of this Chapter then turns to look at the data and statistics produced

in the calculation of the HPI. Again, this section is split into three sub-sections, with each approaching the quantification of the housing market from a different angle. Having examined the production of the HPI in-depth, the first sub-section looks at the HPI itself with a particular focus on what can be learnt about elites and the housing market. This section presents findings that clear regional trends are differentiating the UK housing market, with the high end of the housing market being clustered in inner London. Therefore, revealing that elite engagement in the housing market can be glimpsed through geographical segmentation, but how the HPI is calculated is not suitable for examining trends that run counter to the central tendency of the housing market. The second sub-section uses the Price Paid Dataset, which forms the base of the HPI, and contains all housing market transactions in England and Wales. Through approaching this dataset in terms of the distribution of the housing market as a whole, rather than through regional trends and central tendencies, this sub-section finds that the price growth in the top percentiles is pulling away from the housing market as a whole — a trend which is obscured by how the HPI is calculated. The third sub-section takes this analysis further by using the Price Paid Dataset to calculate a Gini coefficient for the housing market. It will be shown that inequality within the distribution of housing market transactions has been increasing since 2008, with this trend being driven primarily by transactions at the very top of the market. The concluding section of this Chapter draws these two parts together by looking at the jump in transactions for properties over a £1 million in 2013. This section shows how this jump can be attributed to introducing the Annual Tax on Enveloped Dwellings resulting in changing purchasing practices at the very top of the housing market. This theme will then be explored in Chapter 8, with the ‘missing’ transactions this reveals having resulted from the methodological choices made in the construction of the HPI and the data-structuring practices of the infrastructure of land registration examined in this Chapter.

## **The Making of a Measure**

The first half of this Chapter looks ‘under the hood’ of the HPI to examine how it is constructed, both in terms of the statistical methodology used and the data on which it is reliant. In doing so, the research presented seeks to question what can be learnt from the HPI itself and the assumptions on which it rests, bringing critical sociological scrutiny to the quantification of the housing market itself.

To do so, this section is split into three sub-sections, each of which examines a different aspect of the HPI itself. The first of these looks at the methodologies used in the creation of Residential Property Price Index [RPPI]. It will be explored how housing is abstracted within the academic econometric literature and the formalisation of RPPI hedonic models by Eurostat. This section seeks to explore the assumptions which are made about housing in the process of quantification.

The second part of this Chapter brings these formal econometric assumptions about how housing indexes should be modelled into conversation with how the HPI itself is constructed. In doing so, this miss-alignment between the theories behind RPPI’s and the reality of the data collected by the information infrastructure of land registration will be highlighted. This gap will be shown to be a result of the primary purpose of land registration, demonstrating that it is not intended to be a means through which the housing market becomes known- but instead serves as a machinery for the conveyancing of property. The result of this is that it requires a ‘statistical super-structure to be enacted top of the infrastructure of land registration to be statistically useful.

The final section takes this observation further by examining the supplementary data needed from outside the information infrastructure of land registration to calculate the HPI. The data collected in land registration is not enough to fulfil the methodological requirements needed to create the HPI. In this section, particular

attention will be paid to the inclusion of geo-demographic variables in the creation of the HPI, and what this might mean for the resulting HPI and more broadly about how the inclusion of ‘sociological’ data in a housing market index can be understood.

## Quantifying Housing

To understand the means through which the HPI seeks to quantify the housing market, this section examines how houses are conceptualised within the econometric literature and how this abstraction is then modelled. The first part focuses on the assumptions made about the nature of housing itself on which quantifications of the housing market rest. From which the analysis then proceeds to the hedonic regression models used in the calculation of the HPI. This subsection interrogates the assumptions inherent in such models and identifies some of the potential issues which can arise as part of this process of abstraction and quantification.

The creation of any form of RPPI or quantification of the housing market first requires creating a single identifiable unit of a ‘house’ that can be transacted. Within the literature on the creation and use of house price indexes, this base definition of what exactly is being recorded is taken for granted as an assumption, yet it is not explicitly addressed. In almost all cases, what is assumed as the base unit is of *real property* owned by single households. This is not, as it may first appear, a straightforward assumption. However, in the econometric literature on the qualification of housing markets, the outright and straightforward ownership of a property is assumed. This assumption draws on both the widespread legal framework of real estate ownership prevalent in almost all national states<sup>1</sup> and one

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<sup>1</sup>One which it must be noted — and which there is not space to unpack further here — is rooted in the western legal tradition and its often violent imposition and disposition of alternative forms of land ownership and governance. As Bhandar states “*Title registration itself as an inherently colonial way of relating to the land*” (2018).



which is in line with a 'common sense' definition of what constitutes a privately owned home.

The assumption of what a base unit of housing or property is, something this Thesis has shown, is not a consistent object. The assumption of property ownership as simple and stable relies on the *Blackboxing* of the complexity of how property is owned. This is a theme that is explored in Chapter 4 through the *Blackboxing* of the legal form and representation of the property by the information infrastructure of land registration. This theme is further explored in Chapter 5 through the split between freehold and leasehold land. A split is not recognising within quantifications of the housing market, but one which is constitutive of a bifurcation of what it means to own a property. These themes are again explored in Chapter 8, which considers how the LR classifies housing and property through uncovering the 'missing' houses of the high end of the property market, which are owned through shell companies located in offshore tax havens. However, in the exploration of quantification of the housing market discussed in this sub-section, these issues are not pursued further. As they are not explored in the broader econometric literature on creating housing market indexes, the following discussion adopts this assumption when working through this perspective.

The far greater problem for economic theory in creating house price indexes is the nature of housing itself, which differs from many other economic goods. At a base level, all housing is different, and that access to housing is a basic necessity of modern society. Of the two, the first is considered extensively in the measurement of housing. While the second is rarely ever discussed within economic studies of housing and house prices. The fact that that access to safe and secure dwellings for individuals is a fundamental human right-one which is the basic precondition for the existence of the majority of humanity-remains one that cannot be forgotten (Marcuse and Madden 2016).

From an econometric perspective, housing differs from other economic goods in its intrinsic heterogeneity. The heterogeneity of real property as an economic good is embedded in several features which are intrinsic to the concept of housing — which is a potentially empirically and theoretical rich area of sociological study (King 2009) — which for the purposes of RPPIs three of these heterogeneities are of particular importance, the location of housing, the built form, and temporality.

The location of a house is a ‘natural’ heterogeneity, in that there is a spatiality in which a property is fixed to a particular location. This is to say that no property can be exactly similar to another as the space they occupy cannot be in the same location of another property (Wood 2005) — as a result, no two properties can, at a fundamental level, ever be considered to be alike. This is a simple but fundamental observation that distinguishes real estate from other markets that do not share this quality. Furthermore, in the context of RPPIs, it has been shown that the price of a property is intimately linked to the exact location of that property (see: Orford 2017).<sup>2</sup>

The second heterogeneity is of the differences between dwellings themselves. Unlike location, the form taken in the built environment is not one in which there is an intrinsic heterogeneity between properties — it is possible to build houses from the same plan with standardised materials — but is one which can be widely assumed to be true. Most houses differ slightly in one way or another from each other in a myriad of both large and small ways, from the size of a property to small details of its internal layout, to the extent to which it can reasonably be assumed that no two houses are directly comparable in their form.

The third heterogeneity draws on the built form of housing, deepening the relationship between the material form and its temporality. While no two properties

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<sup>2</sup>Although, this is now a well-established feature of house price research Orford . This is critical of how it is often approached within the economics literature, arguing that “the treatment of location within hedonic house price research often reflects a naive treatment of location within these theories”(Orford 2017)

are comparable, nor is the same property comparable between two spans of time when considering their relation to price. Diewert (2007) identifies two distinct reasons for this temporal heterogeneity; firstly, that built form of a property will depreciate over time; and second, that properties, if not depreciating, will undergo some form of repair and renovations and potentially more significant periodic remodelling or extension. When trying to calculate RPPIs, a single property cannot be assumed to be a constant between two points in time.<sup>3</sup>

The challenge in the creation of an RPPI is to abstract these heterogeneities into a statistical product. To do so requires that features of the built environment be standardised in a manner that can be turned into an RPPI. This presents two distinct challenges: developing a statistical methodology that enables these heterogeneities to be transformed into a single representative number and the collection and standardisation of housing data to which this methodology can then be applied. In producing an index of house price change, four distinct methods are commonly applied: property assessment information, mix-adjusted or stratification methods, repeat sales methods, and hedonic regression methods. Of these four methods, Eurostat “recommends computing the HPI using a hedonic method.”(Hill et al. 2018). Other methods are considered to be less optimal but potentially of use concerning specific housing market conditions or in situations of limited data availability.

For this reason, official UK housing statistic has developed through a refinement of statistical methodologies that have reflected both the availability and quality of data available to the compilers of RPPIs in the UK. This is evident in the research on the development of housing market statistic in the UK throughout the 20th century precedent in the last Chapter. This progression moves from the simple nationwide mean of the first DoE index, through the weighted survey sampling of the 5% DoE

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<sup>3</sup>Indeed, it is exactly this temporal issue and the low volume of property resales that are the main drawbacks of repeat sales methods.

index, through to the mix-adjusted stratification model of the ODPM index and finally to the hedonic regression model of the HPI itself. The models used before the creation of the HPI are considered inferior for the coarseness of both the input data and output results as well as sensitivity to data collection (Eurostat 2013). Indeed, these were both issues raised by the BoE in the use of the 5% sample for the purposes of macro-economic management. The issue of sample selection also plagues the use of repeat sales methods, which has not been implemented as a national statistic in the UK, along with further issues of market turnover and assumptions over dwelling uniformity over time.

For these reasons and following the recommendations of Eurostat, “The UK HPI is calculated following recommended international best practice as defined in the Eurostat Residential Property Price Index handbook”(Land Registry 2020b). Indeed, the moves towards the use of hedonic regression methods for the calculation of RPPIs in the UK throughout the 1990s and early 2000s both draw on their success in the UK on the Halifax index (Fleming and Nellis 1983) and a growing academic consensus of the superiority of hedonic methods (Diewert, Haan, and Hendriks 2011; Hill 2013; Hill et al. 2018) Therefore, the following analysis focuses exclusively on hedonic methods as the means of quantifying the UK housing market.

Hedonic methods build on the assumptions made in the abstraction of housing as an economic good discussed above. Using an understanding of housing in the abstract as the means through which the housing market can be modelled. The remaining part of this section examines how such models are constructed and the issues derived from this form of abstraction.

Hedonic methods are neatly summarised by Orford (2017, pp 1) as “hedonic pricing is an econometric technique used for estimating the monetary attributes of complex commodities”. Statistically speaking, the regression methods used in hedonic models are not distinct from those of standard linear regressions. Rather, the term

‘hedonic’ denotes the sub-field of their specific application to price movements. The origin of hedonic models has been traced back to the 1920s (Taylor 2003; Waugh 1928). However, their use did not become widespread in modern econometric theory until the work of Griliches and Committee (1971), which introduced the utility of hedonic methods to a wide variety of economic applications.

The RPPI hedonic model specified by Eurostat is:

$$P_n^t = \beta_0^t + \sum_{k=1}^K \beta_k^t Z_{nk}^t + e_n^t \quad (7.1)$$

Wherein  $P_n^t$  is the price of a property  $n$ , in the period  $t$  which is a function of the number of  $K$  characteristics measured by  $Z_{nk}^t$  plus the inclusion of  $e_n^t$  as the inherent random error (Eurostat 2013, pp 50). The construction of an index across time is then derived from the change between regression coefficients over time.

The model is therefore designed to incorporate the inherent heterogeneity of real estate. In that, it is based on the movement in prices across all properties that are included in its calculation while taking the varied nature of the characteristics of each property into account. From an econometric perspective, a hedonic method is an ideal way to represent price movements across national real estate markets. Indeed, there are very few criticisms of hedonic modelling, in general within this literature, with the controversies that do exist being limited to the extent to which housing markets should be considered linear or logarithmically distributed, the treatment of time dummies, and whether weighting of characteristics should be used (See: Diewert 2003).

The challenge faced in the creation of the HPI was the application of the theoretical properties of an RPPI described in a statistical model to the realities of real-world data; in which the assumptions made in the abstraction of housing as an economic good thus contend with the material constraints of the process of

quantification.

The difficulties of the contention between the abstraction of how housing markets can ideally be modelled and the reality of what it is possible to model cannot be understated; with Eurostat cautioning that:

*[It is] not possible to construct a “perfect” RPPI; it will only be possible to construct an approximation to the theoretically ideal index” (Eurostat 2013, pp 22)*

The disconnect between the theoretical basis of the hedonic methodology and the reality of the way in which actual RPPI's are constructed lie in their treatment of heterogeneity. As discussed above, housing can be considered an intrinsically heterogeneous good, with it not possible for two houses to be identical. Indeed, there are often many differences between even houses in a small local area or those built under similar specifications at a similar time. In abstraction, a hedonic model of all features, and the heterogeneity between them, could be accounted for under  $\sum_{k=1}^k \dots Z_{nk}^t$ . In practice, however, there is a limit to the information which can be passed to this function.

These limits can be divided into two specific sets of issues, of which information will be beneficial to the computation of an RPPI; the standardisation of this information from facets of the built environment into to data points which can be processed; and the collection of that information. It is these issues that are explored in the remaining first half of this Chapter.

The question of what information is needed to construct a representative HPPI is one that strikes at the heart of what *exactly* such an index is attempting to measure. It must necessarily balance the inherently heterogeneous nature of housing. No two houses are alike, with the ability of hedonic models to accommodate this variation against what features of this heterogeneity best fit the calculation of the RPPI and the

material limitations in the collection of the data. As Shiller points out:

*The problem is that there are too many possible hedonic variables that might be included, and if there are  $n$  possible hedonic variables, then there are  $n$ -factorial possible lists of independent variables in a hedonic regression, often a very large number. (Shiller 2008, pp 10)*

In addition to the potential use of  $n$  variables in creating a hedonic model, there are two further statistical considerations in selecting the features included in the data. The first instance of (multi)collinearity reveals the limits between the theoretical heterogeneity that hedonic housing models are intended to accommodate and the actual limits to what can reasonably be included in such a model. This is not a unique problem to RPPI models, but is, “it is considered extensively in the hedonic literature, and it is widely viewed as a major problem for hedonic functions” (Triplett 2006, pp 178). Not all additional information on the feature of a house will be additive to the statistical power of a hedonic model. For example, a variable on the number of rooms in a house, including a further variable on the number of windows in a house, although providing greater detail of information, may add little in terms of explanatory power if the correlation between the two variables is close to one. The resulting bias caused by this collinearity essentially over-fits the hedonic model on a wide availability of data, and as a result, potentially leading to coefficients which are unstable from across cross-sections of the data — an error which would be a major cause for concern in the context of the performativity of RPPI’s.

In practice, however, the extent to which multicollinearity is an issue in the construction of RPPI’s is limited by the data usually available at the time of their construction. What ends up being included as the  $n$  excludes many features that could be included in a hedonic model, being limited by the material constraints of collected data. Hill is particularly blunt — by the standards in which RPPI’s are

usually discussed — when he states that in reality, in the construction of national house price indexes, “The choice of explanatory characteristics is often determined largely by data availability” (Hill 2011, pp 41). Indeed, far from the theoretical grounding in the endless heterogeneity of the built environment on which the use of hedonic models is based, Sirmans et al. (2006) finds that most hedonic models are based around nine core housing characteristics.

The more pertinent practical issue is, as a result, not over-fitting of the model to the multitude of existing heterogeneities but of bias that arises from the scarcity of data used. In particular, one of the major concerns in the use of hedonic models in the construction of RPPI's is omitted variable bias. Some characteristics of a house may have a significant impact on the price of a property that is not captured in the select number of variables used in the RPPI. For example, environmental factors such as air pollution, water quality and undesirable land use have been shown to have significant impacts on house prices (see: Boyle and Kiel 2001), but such factors are rarely included in the construction of RPPI's.

Therefore, the creation of RPPI methods is plagued by the gap between how housing is abstracted as an economic good that can be modelled and the material constraints of the process of quantification itself. The theoretically endless heterogeneity of housing is therefore reduced in practice to a small set of variables. Hedonic models themselves encapsulate this gap in the process of quantification. Hedonic models, in theory, can account for endless variability. However, the reality of their application is severely curtailed, statistically, by issues of either multicollinearity or omitted variable bias and practically in the constraints of the data available and which can realistically be collected.



## **Creating the HPI**

The creation of the HPI was thus a question of applying hedonic methods to the data made available to the ONS. Which, as is discussed in Chapter 6, was decided to be property transaction records that were collected through the information infrastructure of land registration. As has been suggested in previous sections, this is itself not a straightforward process with the needs of this form of calculation not aligning with the purpose of the information infrastructure of land registration. Therefore, these processes crucially shape what is and is not included in the HPI.

The importance of the variables, what is included, and what is not, and how it is recorded is highlighted by early attempts to utilise LR data to create a new House Price Index based on a hedonic model. Despite being able to draw on a dataset that was significantly larger than any other available at the time, it was found to have an explanatory power far lower than the existing DoE or Halifax index (Fleming and Nellis 1996; Wall 1998). This result was due to the lack of characteristic variables available alongside the transactional information recorded by the LR, as discussed in Chapter 6.

The early experiments using hedonic models on the newly digitised LR data show that price and location data alone did not provide sufficient explanatory power. As the research presented throughout this Thesis has shown, the availability and extent of the information recorded by the LR are embedded in the development of the information infrastructure of land registration itself. The information recorded by the LR is limited only to that information that is sufficient for facilitating the process of conveyancing.

The limitations placed on the creation of the HPI by the data-structuring of the information processed and retained by the LR are built-in to what is included in its calculation. In particular, what is considered to be an ‘appropriate’ transaction — is

what this sub-section will explore further. In line with the definition derived from Eurostat (Eurostat 2017, pp 57) the UK HPI is based on the transaction of dwellings acquired by households at ‘market prices’. However, the distinctions made in this definition only map approximately, and in an indirect manner, onto the data collected by the LR.

The transactional data recorded by the LR is stored in three separate databases, each of which has its own data schema; the Price Paid Dataset [PPD], the Commercial Corporate Ownership Dataset [CCOD], and the Overseas Company Ownership Data [OCOD]. The origins of the split between these databases have their roots not in the original design of the infrastructure of land registration but in the socio-material way in which the register itself was *actually* kept. In particular, the split between how different corporate and non-corporate entries are recorded is to be found in the historical development of a sub-register known as the Index of Proprietors names [IOPN].

The IOPN, as the name suggests, was the record of the name associated with the entity which owned the title to the land in question. To this end, the IOPN purpose and content is aligned with the second record book described by the Land Registration Act of 1862 describes as:

*a statement of the persons, classes or descriptions of the persons, that are to become entitled to the lands, and the estates and the powers, and that exists, or may arise or become invested in such a person retrospectively* (Hansard 1862a, pp 467)

The origins of the specifically named IOPN are, however, not in the 1862 Act, but the reorganisation of the Register in the *Land Transfer Act* (1897) — before the expansion of compulsory registration to London — and further consolidated by the 1903 Land Transfer Rules (National Archives 1974). Furthermore, the collection of proprietors names and archiving for the purposes of future checks and claims against bankruptcy

and indemnity was further entrenched by the *Land Registration Act 1925* (1925) as a key part of the LR remit.

However, despite this statutory basis for the IOPN, its essential maintenance as a functional component of the infrastructure of land registration was subject to practical socio-material concerns. By 1936 the rising number of registrations being processed by the had increased both the workload associated with keeping the IOPN and its utility as an index of names. As a result, the IOPN had run into the same issues which plagued the first registries in West Riding and Middlesex, with the index containing many entries for people of the same name, variations in the spelling, and a lack of ability to account for changes in names. The problem was compounded by the extended remit of the LR and could include the names of individual landowners, building societies, limited companies, corporations, and trustees. As a result of the lack of standardisation of what was being recorded by the IOPN — and how this related to other official records — the Chief Registrar wrote in 1936 that he had “never placed a high degree of confidence in its [IOPN] accuracy” (National Archives 1936). Moreover, the cost of the IOPN was high, running to over £2000 per year. A cost which was regarded as poor value for money, with the IOPN itself reportedly only begin consulted a few times each year (The Law Journal 1959).

As a result of these shortcomings, the Chief Registrar sought to use his discretionary powers to reorganise how the IOPN was kept — to reduce the administrative burden placed on the LR. To continue to meet the statutory requirements laid out by the 1925 *Land Registration Act 1925* the IOPN was modified so “it may achieve its essential function of being a link between the Land Charges Register and the Land Registries where such a link is required and discarded where such a link is not” (National Archives 1936). In effect, this meant to keep only the most provisional of records on the name of titles owned by *individual-proprietor* with no further records

being kept on other forms of owners. This shift away from attempts to keep a comprehensive record of the IOPN was further matched by the attitudes of LR assigned to work on the IOPN with correspondence between the LR and the Lord Chancellor's Office reporting that "it was difficult to get staff to maintain a record [of the IOPN] with meticulous care when they knew no practice use would ever be made of a large part of the information they were gathering"(National Archives 1974). Thus from, 1934 to 1972, the IOPN only recorded the names of individual proprietors with all enquiries related to corporate bodies being directed to the Board of Trade with whom Company Registration records were kept (National Archives 1953b).

This changed dramatically in 1972 following the Seillon-Mesco affair in which millions of pounds of fraudulent dealings in land could not be adequately investigated by the Crown due to the lack of records kept by the LR (National Archives 1974). The criminal proceedings of this case brought the IOPN to the attention of the Lord Chancellor, with the reform of the IOPN becoming a clear administrative and political priority. As a result of this pressure, the IOPN was split with a new computerised record of all corporate entities for the first time since 1934.

The IOPN register of corporate names differed in its computerised form, and the fields of information kept from the IOPN of individual proprietors. The most important difference was information on the company registration numbers, which were incorporated in LR records for the first time. The incorporation of company numbers acted as a means to match information from the IOPN with other government records regardless of the specific way in which the name itself of the entity was recorded (National Archives 1977).

The split between the corporate IOPN and the individual-proprietors IOPN stayed in place as all IOPN records were computerised. As the purpose of these two

records was the same—and hence shared the same name—the content required of these records differed. Each version of the IOPN required fields that were redundant on the other (i.e. company number, title/honorifics), and when implemented on the computerised punch-card system of the time, this translated into taking up different physical areas of an individual punch card. As a result, merging these records to include fields that would be blank in many entries was an obvious inefficiency that should be avoided.

The origins of the split with OCOD are also to be found with an ongoing legal case over the ownership of the Estonian Embassy in London, which raised questions for the LR of how corporate forms not registered in the UK should be recorded. This case highlighted both the flaws of how the IOPN had recorded legal entities before 1935 and how entities outside of the English administrative and legal system were to be recorded. In 1919 the Estonian government purchased 176 Queens Gate, Chelsea in London as the premise for their UK embassy. However, as a foreign state could not for technical legal reasons be added to the register, the title was recorded in the IOPN under the names of the Estonian ambassadors at the time, Felix and Eduard Puchk (National Archives 1975). When the two Ambassadors returned to Estonia, the property was then placed into the trust of the Land Bank of Estonia, who was later resisted as the proprietors without the title being converted. In 1940 Russia occupied Estonia and subsequently founded an Estonian Soviet Socialist Republic that nationalised all Estonian banks. After which time, the London embassy continued to be occupied by the 'Estonian Legation'. By the mid-1970s, the ownership of the embassy was thus at the centre of a complex and ongoing legal case over the ownership of the embassy, with the exact details of what had been recorded by the LR being an important set of facts in the case. As a result of these ongoing difficulties at the time, the computerised and bifurcated IOPN was being established, the LR began recording non-UK corporate entities treated separately from companies registered in the UK (**nationalarchives1986**).

The split between the modern-day PPD, CCOD and OCOD, have their roots in the decisions made during the computerisation of the IOPN. A series of splits proved to have technological and institutional inertia, remaining in place as all information held by the LR was slowly digitised. Therefore, the split between these datasets continues to be made based on the form through which the real estate being transacted is owned. All real estate bought by a corporate entity based in the United Kingdom becomes part of the CCOD dataset; those overseas the OCOD; and any other transaction which a private individual makes as part of the PPD. Crucially, the LR does not collect any information on the underlying use of the property or any information that could be used to classify a household.

The consequence of this fundamental feature of the data-structuring of the LR's data is that while this form of classification in many cases lines up with the definitions of transactions used in creating an RPPI, it does so imperfectly. As in most cases, the real estate assigned to the PPD is of single households purchasing residential property for personal use; this is not a fact that can be deduced from the data itself. Indeed, in a significant number of cases, the data-structuring of the LR's data does not align with the definitions used for the base unit in the construction of an RPPI. For example, homes purchased by individuals not for their own use but as rental properties cannot be distinguished from the data collected by the LR as there are no recorded categories from which either the household status of the purchaser or the use of the property itself. In the case of a buy-to-let mortgage on a second property as a form of individual capital investment, this would still fall with the guidelines suggested by Eurostat, which, as this is a residential property, purchased by a household would still fall within the scope of its definition (see : Eurostat 2017, pp 57). A definition which can be challenged on several fronts.'

Firstly, that when this definition overlooks the changing dynamics of the UK housing market, which since the early 2000s has seen a sharp increase in the number

of private landlords taking advantage of the tax relief available on buy-to-let mortgages- seeing the number of private landlords quadrupling from half a million in 1990 to over two million by 2012 (Ronald and Kadi 2018). Secondly, a slight restructuring of how such properties are purchased makes a significant change to how this data is interpreted. For example, changes to buy-to-let mortgage tax relief in 2017 changed the dynamics which had previously driven the buy-to-let boom (Whitehead 2018), with many landlords deciding to incorporate their rental properties as a means of retaining their tax advantages. Incorporating their previously private holdings, little has changed for the individual landlord regarding their household wealth, but the property has been transformed in the way information about it is stored and calculated. In this case, a property, through this transaction to incorporate has become part of the CCOD dataset, and as a facet of this change in ownership, can no longer be distinguished as a residential dwelling by the LR or in the calculation of the HPI. Therefore, should such property be sold again to another corporate entity, it would not be included as part of the calculation of HPI, despite remaining part of the residential housing stock which a private household could buy. Alongside the growth of buy-to-let investment from the mid-1990s in the UK, in the wake of the financial crisis, has seen a rapid increase in large institutional investors moving into the private rental market (Beswick et al. 2016). The conjunction of these trends alongside the growing evidence that both buy-to-let and institutional investors can purchase dwellings below the price that owner-occupiers would pay (Allen et al. 2018; Bracke 2019), suggest that this definition will lead to a growing distortion between the figures produced by the HPI and the reality of the market it is meant to capture.

Furthermore, the split in the information which is collected in these databases is not 'naturally' occurring but requires ongoing acts of maintenance to ensure that the transactional data collected by the LR is fitting with the statistical needs of the HPI. One of these maintenance acts is the specification that the transactions used in the

calculation of the HPI must be at their 'full market value'. Values deemed to be either under or over the 'full market value' are not included in the PPD dataset.

Unlike its predecessors, the HPI is not reliant on a sample but rather uses the population of 'full market value' transactions in England and Wales. However, applying the definition of 'full market value' is to create a subset of transactions recorded by the LR—with their being many transfers of property, including those for cash that do not meet these criteria. The distinction of this criteria not being one that is built into the information infrastructure of land registration, but is one that is applied *post hoc*.

Therefore, the application of this criteria is one of curation, which requires an ongoing maintenance and quality assurance procedure for the purposes of statistical production. The only distinction that occurs at the point of registration is that of the form of transfer required and the ownership of the property. As discussed in the previous Chapters, the information collected at the point of transfer is limited to what is needed for the conveyancing process. This continued to remain the case, even after the expanded triggers for the registration process included in the 2002 Land Registration Act.

The split in how information is recorded by the LR and what has deemed a transfer at 'full market value' first occurs in the form used. Furthermore, there is a whole different process for a transaction of property by inheritance (AS1 — Assent of Whole Registered Title (Land Registry 2020e)) and a transaction of property by market purchase (TR1 — Transfer of Whole Registered Title (Land Registry 2020a)). TR1 transfers are the only ones being recorded in the PPD, OCOD and CCOD datasets. Moreover, within the TR1 form itself, the only differentiating information between properties is the title number of the property and the classification of the transferee and transferor — with this data then being mapped onto the three



different LR datasets.

Of these three datasets, those transactions which are classed to have been conducted by individuals go through a further quality assurance process. The CCOD and OCOD datasets, which are not used in any national statistical products, not being checked further. The PPD, by comparison, is used in the calculation of the HPI, and as a designated national statistics is required to follow the Office for Statistics Regulation (2015) Quality Assurance of Administrative Data toolkit and undergoes a series of further checks to ensure the quality and veracity of the data. The process requires not being part of the process of land registration but a 'super-structure' of statistical production, which sits on top of the process of land registration.

This process starts with all price information being manually entered twice by caseworkers into the LR database 'by hand' to ensure that all values are transcribed correctly and that especially erroneous transaction values can be flagged. Following which automatic reports are generated weekly and checked for quality assurance checks at LR Local Offices. The prices which fall outside the price band for the area in question are inspected by Compliance and Audit teams at each Local Office to ensure that they fall within the bounds of the 'full market value' of a property in each area. Finally, at an aggregate level, monthly figures are assessed by an Audit Assurance Team which are independent of LR operations, with corrections being made at each stage, as necessary before the data needed for the publication of the PPD and HPI is extracted for analysis by the ONS (Land Registry 2018a). Each stage of which represents an act of maintenance, one which continually being undertaken to ensure that the information which is collected as part of the work of the infrastructure of land registration conforms to the differing requirements of the use of this information for the production of statistical knowledge of the housing market. The need for ongoing maintenance of infrastructure is crucial to understand how they function, in terms of everyday labour of infrastructural workers (Star

1999), the temporalities infrastructures inhabit (Ribes and Finholt 2009), and their scale of the infrastructure itself (Graham and Thrift 2007).

The HPI is thus based on the transactional data collected by the LR. However, it requires a further system of processing in addition to the work of conveyancing to fit the requirements of the quantification of the housing market. The use of this data is not shaped to the needs of the construction of the ideal RPPI but to the realities of what can be used from the data collected as part of the existing information infrastructure of land registration. This transactional data forms the basis of the HPI of what is considered a 'house' and what is considered a 'housing market' transaction.

### **Beyond Land Registration Data**

The data collected by the information infrastructure of land registration is by itself, however, not fully sufficient for the production of the HPI. Despite the comprehensive collection of transactional information for the property market, the scale of this data alone does not provide sufficient explanatory power for a housing market index. Rather, the base data forms are the origins of the HPI but need to be supplemented with characteristic information collected outside the infrastructure of land registration.

Therefore, this sub-section examines the additional variables used in conjunction with LR data to produce the HPI. Firstly, this Chapter briefly covers the property characteristic information, which is added in from data collected as part of Council Tax. The majority of this section focuses on the use of the ACORN geo-demographic variable. It will be shown how this variable warrants further examination due to its source and method of calculation. The research in this section raises three concerns in its use; racial profiling used in its construction, the 'double counting' of property market information, and the potential performative 'loop' of which its use in the

HPI may be indicative.

To address this problem, the construction of the HPI supplements the base data available from the LR with other sources of data. The calculation of the HPI takes the form of:

$$\log(p^i) = k + \sum_j \beta_j x_j^i + e^i \quad (7.2)$$

Where in  $x$  covers six property features which cover; local authority area; property type (detached semi-detached, terrace, flat), number of rooms, floor area ( $m^2$ ), if the property is a new build and ACORN classification code — with all variable aside from floor area being transformed into binary variables. Of these features, only the transaction date, price, property location, and new build status are recorded by the land registry. As such, while LR data forms the core of the HPI, additional complementary data which cannot be derived from the information infrastructure of land registration is needed to create an accurate RPPI.

Four variables of the six are derived from information collected by the Valuation Office Agency [VOA].<sup>4</sup> The information which the VOA collects under the provisions of the 1992 Local Government Finance Act empowered the collection of such information to assess Council Tax valuations accurately.

Unlike the base LR data, the VOA itself is not responsible for the direct collection of the data but its collation from local councils. As a result, while “VOA works hard to standardise its approach to data collection but given the large variety in dwellings, there have been some different local interpretations over the years. ” (Land Registry 2018d). Consequently, the accuracy of the information held varies, matching 85% of the same categories recorded by the CensusCensus but varying between 70% - 95% for different local authorities. There is a 95% match rate to the base LR

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<sup>4</sup>This is true only for England and Wales with additional sources of data needed for Northern Ireland and Scotland, for which both LR and VOA data are not available. In these instances

transactions.

The inclusion of the VOA data thus provides the LR with the property attribute data needed for the hedonic model used in calculating the HPI. The collection of this data occurs outside the process of land registration itself, with the need to match records demonstrating the gap between the title system of ownership and the administrative Council Tax system based on occupancy and use of the property as housing.

The second data source used to complement the data collected by the LR is the ACORN classification of the area in which the transaction was located. The ACORN system itself, how it fits into the HPI, and its impact on how the housing market is understood, is the concern of the rest of this section. While the addition of the VOA property attribute data adds something that could be captured by the information infrastructure of land registration but is not, the inclusion of ACORN data adds a variable that is independent of the property's characteristics in question.

One which furthermore requires scrutiny in its inclusion of the production of the HPI as it is one of the most important explanatory variables used in the hedonic regression, as the technical documentation for the HPI explains:

*"The floor area and type of property (detached, semi-detached for example) are generally found to be the most important variables in explaining a house price, followed by the Acorn variable (out of 6 variables)." (Land Registry 2020c)*

The ACORN variable stands apart from the other variables used in the calculation of the HPI as it is a geo-demographic classifier maintained by the private company CACI. One which CACI describe as:

*"[The ACORN variable] segments postcodes and neighbourhoods into 6 Categories, 18 Groups and 62 types, three of which are not private households. [ACORN analyses] social factors and population behaviour, it provides precise information and in-depth understanding of the different types of people."*

(CACI 2019)

The inclusion of the ACORN classification variable is conspicuous as a privately held third-party data source in what would otherwise be an administrative set of government data. In the development of the new HPI, the ONS provides little justification for the inclusion of the ACORN data. Rather the ONS notes that it had been used similarly previously in both the previous LR and ONS index. However, the documentation states that *“a key determinant of house prices are the demographic characteristics of the area in which the property is located”* (ONS 2016, pp 11). Indeed, ACORN variables were used in previous iterations of the RPPIs in the UK; in particular, the first ODPM hedonic regression model used ACORN data to weight the index (Office of the Deputy Prime Minister 2003a). However, this research has been unable to find any accessible archival documents which shed light on the reasoning behind the inclusion of ACORN data in revamped ODPM index. Likely, further information on this topic will not be available until memo’s from the ODPM, LR and BoE are released by the National Archive’s in the late 2020s and early 2030s.

The inclusion of the ACORN geo-demographic data could be seen as an attempt to account for omitted variable bias by introducing an indicator that seeks to provide a reductive categorical variable for the ‘social world’. As the documentation notes, that while the data organised at the level of postcode and neighbourhoods, *“Acorn is essentially a segmentation of people and their characteristics.”* rather than one which is based on the built environment (CACI 2019). Accordingly, it, therefore, adds a variable that acts as a distillation of the wider social world into the HPI. The justification for the use of ACORN data in the HPI, however, somewhat contradicts this with the methodological documentation stating:

*“The reasoning (and importance) for using such a classification is that the location of a property should influence the price people are willing to pay and as*

*such is an important price determining characteristic that should be accounted for when modelling house prices.”*

While the ACORN is a neighbourhood classification, it is not strictly speaking a geographic variable. Indeed, not only is a location variable already included in the HPI at the local authority level, other, more accurate, methodologies for the inclusion of geographical location and geographical clustering have long been available for use in RPPI's (for a recent example see: Maguire et al. 2016). This distinction raises questions over the classification output of the ACORN used in the HPI and the data which feeds into it.

As a privately produced product, the exact methodology used in constructing the ACORN classification is a closely held industrial secret. However, the methodological documentation published provides a good view of the underlying data sources on which the classification is based. Of the thirteen data sources used in the construction of ACORN, most of the key information is derived from the aggregation of demographic data collected by the state, with a particular reliance on published census data. Many of the additional data sources enhance the demographic data produced in the Census, for example, the inclusion of population density data.

The inclusion of the ACORN variable in the HPI raises three concerns that warrant further scrutiny. Of these three concerns, the first regards the appropriateness of the ACORN variable to how it treats racial and ethnic minority populations. Secondly, there are methodological concerns over the 'double counting' of housing market information from using the ACORN variable. Finally, in combining these two issues, there is a larger and more speculative question as to whether the inclusion of 'social data' in the quantification of the housing market contributes to a self-reinforcing model of social stratification.

The first of these concerns lies with the distinctions that geo-demographic methods

seek to establish from the data they draw. For example, categorisations, such as the grouping 'struggling estates', with further sub-classifications like 'deprived and ethnically diverse in flats' have been rounded on by fellow sociologists, as the claims of demographic sophistication by CICA can be seen to amount to little more than crude racial profiling. A point which is could not be made any clearer than the development by CACI of their dataset, which compromises one of the thirteen variables of ACORN, to track traveller sites specifically. The inclusion of this marginalised group into ACORN data in this crude manner does little more than replicate the racism and marginalisation already faced by travellers across the UK (Watt 2009). In particular, it raises a question about the suitability of the inclusion of ACORN data in the construction of the HPI to include a measure that reinforces the racist house price scaremongering and base racist prejudice pushed by the right-wing press.

The second set of concerns is with how ACORN itself treats housing data. One of the additional data sources for ACORN is LR transactional data and residential rental prices. There are three concerns with the use of this data in this context. The inclusion of LR data in ACORN constitutes a form of 'double counting' within the construction of the HPI. The potential effects are not addressed in any published methodological or quality assurance work on the HPI. Furthermore, the inclusion of rental market prices is a direct proxy for house prices, which according to the methodologies proposed by Eurostat, should be excluded from the construction of RPPI's.

Thirdly there are a larger, if more abstract, set of concerns about such data looping back into the measures they intend to capture, which could be seen to create a set of self-reinforcing socio-spatial dynamics. This question relates to how housing indexes are performative in the picture they present of the housing market. As designing the measures of a house price index, it is the expectation which it will act in the world. A point which Eurostat itself explicitly raises when it notes that:

*"There are many areas of society where individuals or organisations use residential property price indices (RPPIs) directly or indirectly either to influence practical decision making or to inform the formulation and conduct of economic policy." (Eurostat 2013).*

The performativity of HPI is, in this case, more direct than that of financial models. MacKenzie (2006) describes how economists have misconstrued the performativity of economic models by inverting Milton Friedman's famous maxim to argue that:

*"Financial economics, I argue, did more than analyse markets; it altered them. It was an "engine" in a sense not intended by Friedman: an active force transforming its environment, not a camera passively recording it"*  
(MacKenzie 2006)

In this context, the power of RPPI's is not analogous to that of the Black-Scholes model in that it has clearly not reshaped markets to anywhere near the same extent. The difference is that, unlike the financial models, which were designed to capture a picture of the market but ended up reshaping them in their image, RPPI's have been designed specifically with their ability to influence markets and the decisions of individuals in mind. This raises the question, if the price of a house is, as by the ONS own admission, reflective of the demographic characteristics of a neighbourhood, what impact could the inclusion of this data have in the context of RPPI performativity? The stratifying effects of geo-demographic classifiers have been raised as a point of concern by other sociologists (For example see: Uprichard, Burrows, and Parker 2009) independently of their interface with other metrics. Thus, when brought into conjunction with metrics that are performative of house prices, to what extent does the quantification of the housing market contribute to a self-reinforcing loop of pre-existing social and wealth hierarchies on housing ownership?

The construction of the HPI is thus one which seeks to construct the best possible



single metric for the UK housing market, which is in line with international best practice for the construction of RPPI's and with the data available to the ONS. However, this does not mean that concerns cannot be raised with the process of quantification itself. These concerns do not seek to undermine the HPI but to inform analysis which draws on the HPI and future research into the UK housing market. To which the gap between the economic theory behind the HPI and the reality of its implementation is a case in point.

The theoretical assumptions that underpin the housing market's quantification are built around the endless scope for the heterogeneity of the built environment. These are translated into the hedonic model, which forms the basis of the HPI. And, in theory, a hedonic model can accommodate endless variation within its parameters. In reality, however, the extent to which this heterogeneity is actually modelled is severely prescribed. Firstly, as a statistical problem, there are many pitfalls around multi-collinearity (and the reverse problems of omitted variable bias). Secondly, as a practical issue, with only a select number of characteristic variables being collected and suitable in constructing an RPPI.

The reality of the construction of how an RPPI should be constructed and the materiality of the data collection is further evident in the 'gap' of what is classed as a housing market transaction. The information infrastructure of land registration does not collect data on the use or characteristics of a property and instead differentiates the housing market based on the form of property ownership. This form of classification requires a 'statistical superstructure' of quality assurance to be assembled on top of the machinery of conveyancing for which the information infrastructure of land registration was founded. The supplementary data added in from outside the process of land registration forming part of this superstructure and enabling the explanatory power of HPI to surpass that of the measures which preceded it.

The HPI can thus provide a great deal of insight into the housing market in the UK. This single figure captures the macro price changes in the UK housing market as a whole. Indeed, it is a measure that is far more comprehensive than previous measures, with the LR data on which it is based capturing the complete population of housing market transactions in the UK.

However, what can the HPI tell us of the relation between elites and housing in the UK? This is a question which the following section explores in greater depth by looking at the figures produced in the calculation of the HPI itself. Before this analysis, however, through looking at the HPI as a process of quantification alone, a number of points can be raised about the position of elite housing within this data. Firstly, that of the heterogeneity of the built environment, only a select number of variables are included in the calculation of the HPI. Only features such as the size of property and number of rooms will track features of properties of the high end of the market. Equally, the location variables included capture only the Local Authority area, and administrative geography, which is too large to capture the specific pockets and 'elite postcodes', which are distinct in their desirability and cost. Other desirable features, such as the age of a property (Hill 2011), additional land and green space (Gibbons, Mourato, and Resende 2014), and proximity to amenities such as schools (Glen and Nellis 2010; Orford 2018) and transport (Ahlfeldt 2013; Wang et al. 2015), all of which have been proven to correlate with the price of a property. Secondly, the form of the HPI is specifically created to find a central tendency in the housing market. In this regard, the HPI is more comprehensive than previous measures of the housing market, such as the DoE/5% sample, in the range and size of the data on which it draws. Indeed, the HPI can, by its definition, be said to draw on the full population of housing market transactions rather than a sample. However, the extent to which this extended coverage matters for elite housing is minimised through the mode of calculation. Finally, that there is a gap between the assumptions of what constitutes a housing market and the

infrastructure of registration. The infrastructure of registration not collecting information on the use of the property but instead defining the housing market based on the form of ownership through which a property is transacted. In most cases, this data structure aligns with that of the definition of housing that the HPI seeks to capture. This misalignment is, however, one that is of particular importance when considering elite housing. As the following sections and final Chapter will show, many of the most expensive houses owned by the elite in the UK are owned through corporate structures for tax and wealth management. Moreover, as a result of ignoring the use of the property and instead focusing on the form of its ownership as a proxy for this value are missed from the HPI.

## **Underneath the HPI: Exploring the Land Registry Price Paid Data**

### **Prices**

What can be learned about housing and elites from exploring house and housing from the statistical knowledge derived from the information infrastructure of land registration? As the preceding sections have shown, there is no straightforward answer to this question. Compared to the housing market statistics that preceded the HPI, it is clear that more information is now distilled into these statistics in a more sophisticated manner. The first sub-selection seeks to tease out the relationship between elites and the housing market by analysing the regional breakdowns within the HPI. The extent to which the HPI can speak to the high end of the housing market is, due to the methodology through which it is constructed, however limited. The following two sections approach the relationship between elites and housing in the UK by using the underlying PPD data from which the HPI is constructed to account for the HPI's limitations. The second sub-section approaches the housing market via a breakdown, not by the property's location by price decile. In doing so,

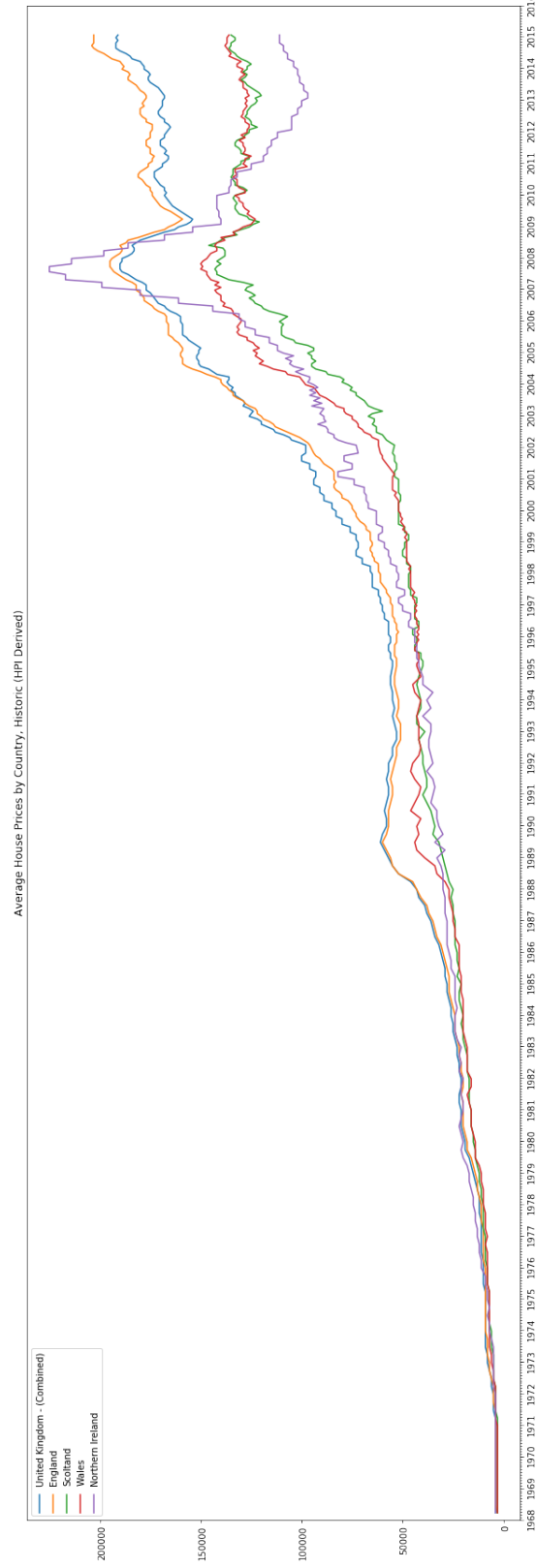
revealing the extent to which prices at the very high end of the property market have been accelerating. The final sub-section builds on this insight through developing a Gini index of the housing market in the UK. This Gini index demonstrates the extent to which inequality within the housing market has been growing due to the high-end properties that are primarily located in Central London.

Holmans (2005) refers to pre-1990 housing market statics as ‘styled pictures’ rather than authoritative records — the reasons for which are discussed in depth in Chapter 6. And, while this picture may not be comprehensive, it does provide the best long-run representation of the UK housing market currently available. Figure 7.1 presents the last such figure. This representation is a derived back series produced by the ONS which adjusted the previous DoE/5% sample figures, relying on Regulated Mortgage Survey data, to best align with the current HPI methodology — although it remains a series which is not part of the official UK HPI and should be used for ‘indicative purposes only as it does not meet the quality standards required of current national statistics.

Figure 7.1 shows the dramatic rise of house prices over the period for which official house price statics have been gathered showing the gradual rise in house prices from the late sixties and early 1990s, with a general trend of year-on-year growth. One which saw the average house price in England grow from £3,000 in 1968 when records began to £55,000 in 1995 — a cumulative growth of 1,202 index points. A similar trend is evident in all countries in the UK. From 1995 onward, house price growth appreciated more dramatically, with the average house in England in 2015 costing £191,000 — a cumulative growth in 10 years of 985 index points.

The picture these figures paint is hard to ignore, of a long-term application of the value of housing with a dramatic growth from 1995. One which, except for Northern Ireland (with the mid-2000 bubble being partially tied to the housing bubble in Ireland), being broadly uniform trend for all countries within the United Kingdom

Figure 7.1: Average House Price by Country, Historic (HPI Derived)



Note

derived figures run from 1968 - 1995 for England and Wales, 1968 - 2003 for Scotland and 1968 - 2005 for Northern Ireland.

— albeit with Scotland and Wales having lower average house prices than England, and growth recovering more slowly after the 2008 financial crisis.

This is, however, a broad ‘stylised picture’ of trends in the national housing market over this time, one which, before 1995, was confined to a specific subsection of housing transactions, of those backed by Building Society (and later including bank) mortgage. Although this may provide a reasonable portrait of the housing market, it is unlikely to have ever captured the dynamics of elite home purchases during this period. As it was known that purchasers at the top of the market from 1945 to 1990 were if they were using outside financing at all, likely to be using different lending institutions such as banks and insurance companies (Holmans 2005). Similarly, until the HPI, other changing dynamics of the housing market such as buy-to-let or cash purchases were excluded from housing market figures — both of which are likely to be clustered amongst the most affluent.<sup>5</sup> To this end, while housing market figures before the creation of the HPI may illuminate general trends in the housing market, they do not provide an entry point for examining the relationship between elites and housing.

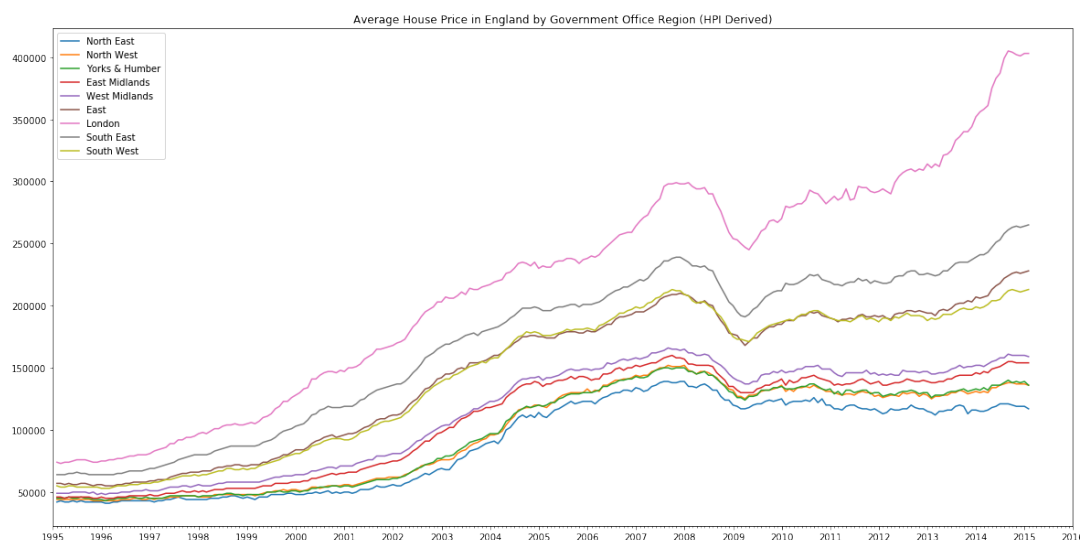
However, because the HPI is based on the comprehensive information infrastructure of land registration, it can be used to tease out the relationship between elites and housing — an avenue of research that was previously precluded by the methodology from which housing indexes were derived. The first part of this analysis approaches what is possible by looking at geographical trends within the HPI. Figure 7.2 show the back-derived HPI for housing in England by Government Office Region [GOR]. The long-run trend of house prices this presents is similar to that of Figure 7.1, of significant price growth across England since 1995. There is a clear dip in house prices following the financial crash in 2008. This Figure further

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<sup>5</sup>Interestingly the when comparing figures reliant on the CML data to those in the HPI, average house prices in the mid-1990s are higher for those using the CLM data. For example, in 1995, the average house price in England is £67,332 in the ODPM but £53,000 in the HPI back-series (non-derived). Potentially reflecting on aggregate the price discount which researchers have shown cash buyers (and ‘non-chain’) enjoy see Bracke (2019)

clarifies the differential trends across regions, with house price growth in London intensifying in the following a recovery from 2008/9 while prices in Yorkshire and other Northern GOR's stagnate.

Figure 7.2: Average House Price by Government Office Region, (HPI Derived)

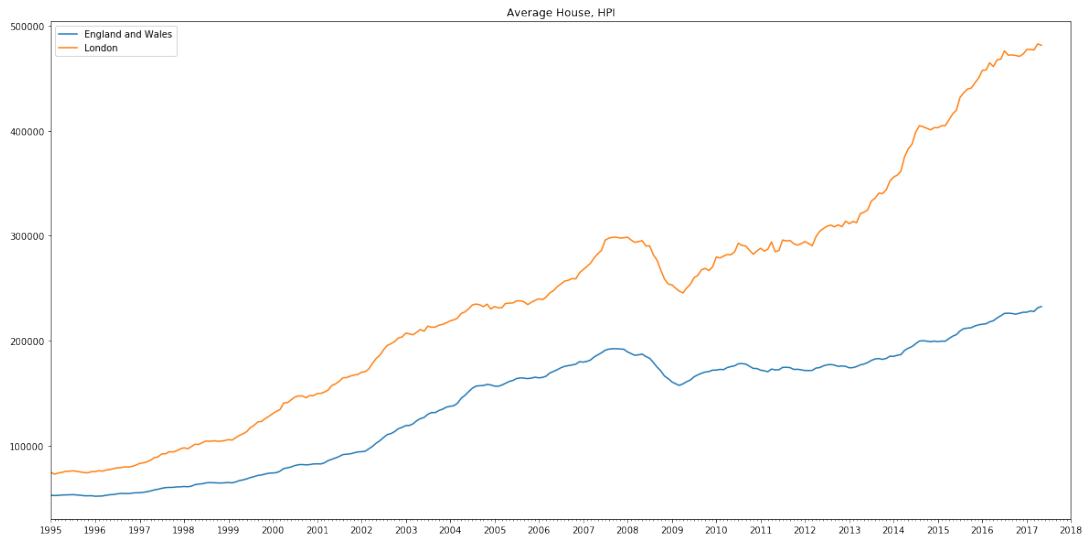


The divergence between GOR shown in Figure 7.2 demonstrates the geographic diversity hidden beneath the headline figures of the HPI. It is a divergence that is not wholly unexpected. The HPI, and the national picture it paints, is a tool that is of particular interest in national economic planning — as the BoE interest in the development of house price indices attest — but one which creates an artificial image of a unified national market. Due to the geographically fixed nature of housing, one which remains local in character despite national trends. As the National Statistician noted when undertaking a review of house price indices:

*The housing market in the UK is not a single market. House prices can rise in one area whilst they fall in another. These variations can occur across geography but also house types. Therefore, any aggregate move in house prices, or indeed house price itself, will mask variation at lower levels. (National Statistician 2010)*

This is particularly evident in Figure 7.2 for London, which not only leads in price

Figure 7.3: Average House Price England (excluding London) vs London, HPI derived



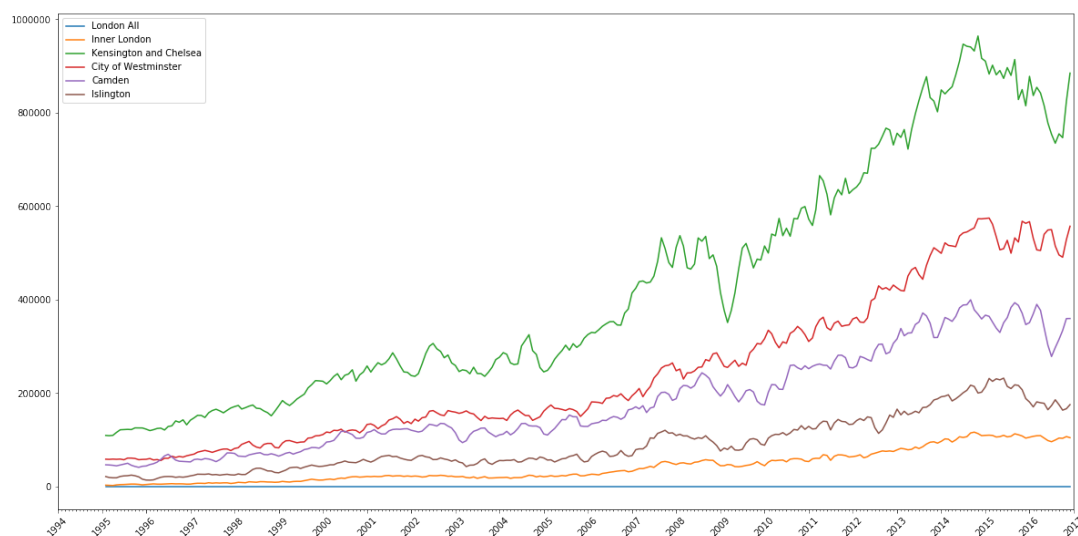
growth, slowly pulling ahead of other regions before 2008/9, it sees significant growth in the following years, which is not seen in other areas of the UK. This divergence is further highlighted in Figure 7.3 in which the average house price in London is compared to that in the rest of the UK.

Such figures tell of general housing market trends in the UK in which average house prices have risen significantly over the past decade across regions in England with further significant house price growth in London. The extent of this can be seen in how the average house price in London in 2015 is twice that of the average price outside of the Capital.

The extent to which trends in elites and housing can be glimpsed is in the geographical clustering in which elites often live. With this elite clustering at both a cultural and economic level having been identified clearly by previous sociological research (Burrows, Webber, and Atkinson 2017; Cunningham and Savage 2015) To this end, trends in specific London Boroughs mirror those in the previous graphs of accelerating price growth compared to other regions. This is demonstrated in Figure



Figure 7.4: Average Price Difference Between Top London Boroughs compared to the Average London Price



7.4 in which the difference in average house price growth in the most expensive London boroughs is compared to the average house price for London as a whole. The average price for Inner London boroughs grows slightly compared to the London average, but there is significant growth in Kensington and Chelsea, and Westminster. Price growth in these areas can be seen to be significantly pulling away from both the London and UK average in the speed of its continued price growth.

These figures suggest that the dynamics of house prices in these areas are significantly different from the rest of the UK housing market. However, the extent to which such dynamics is viable in the HPI is limited to how they can be teased out of the geographical differences. This geographical specificity is limited to a Local Authority level.

The extent to which the HPI can be used to learn about the elites and housing is limited — as the review of the methods used in the calculation of the HPI in both the previous section and Chapter has made clear. With the purpose and methodology of

the HPI standing contrary to an examination of elites and housing, as:

*in constructing a single number for house prices at a particular time, the aim is to indicate the 'central tendency' of house prices. Differences in assumptions made in doing this can result in large differences in the 'average' house price.*(National Statistician 2010)

As a result, within the HPI, trends in the relation between elites and housing are visible only in so far as they relate to the central trends that quantification of the housing market seek to capture. Thus, for example, there is a clear divergence between price growth in 'elite areas' compared to those in the rest of the country. This, however, cannot be explored in great depth through the HPI itself.

## **Deciles**

However, the relation between housing and elites can be explored in greater detail by using the underlying PPD dataset on which the HPI is based. The LR has released this dataset under an Open Government Licence to allow researchers to work directly with the transactional data collected by the Land Registry. The following two sub-sections make full use of this data to explore further the trends revealed in the geographical breakdown of the HPI index.

The PPD contains only the information collected by the LR and not the supplementary data added from other agencies. As a result, the HPI cannot be replicated and applied to different geographical areas or a specific sub-set of transactions. Indeed, even should this be possible with the correct data, such an aim may be a fool's errand. As Hill (2011, pp 46) notes, due to the many variables involved in the creation of an index, there is a great sensitivity of an index to the selection and use of such variables. He cautions that the exact recreation of an RPPI without access to exactly the same code that "It is undoubtedly true that two researchers given the same data set will end up constructing different hedonic

indexes”.<sup>6</sup>

Therefore, the research presented below seeks to explore the data of the HPI in a different light—one which focuses on the top of the housing market frequented by elites. To start exploring the PPD data and the 23 million transactions, it contains Figure 7.5 plots a simple monthly mean and geometric mean of the PPD against the average price of the HPI. Firstly, this figure reveals a geometric mean of all transactions in the PPD tracks very closely with the official HPI itself. This can be attributed to the mathematical function of a geometric mean, which like the more complex hedonic methodology, tracks strongly towards the central tendency within the data. Furthermore, a geometric mean is used in the creation of the average house price metric, which is constructed through using a weighted basket which averaged using a geometric mean and then adjusted to track the HPI index (Land Registry 2018b). Consequently, a geometric mean should map the average house price relatively closely, which is determined from a weighted basket of property types tracked to changes in the index. Secondly, the simple mean of transactions in the PPD dataset pulls away from the HPI average price and the geometric mean over time indicates increasing prices towards the top of the distribution.

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<sup>6</sup>For example, to exactly recreate the HPI one would also need access to all of the data collected in the Regulated Mortgage Survey conducted by the CML — in effect all mortgage completion data in the UK. While not factoring into the hedonic regression described above, it is used to assign weights to the property attribute data (especially for properties where this information is missing) in calculating the HPI and the sub-series for first-time buyers.

Figure 7.5: Mean, Geometric Mean PPD and HPI index

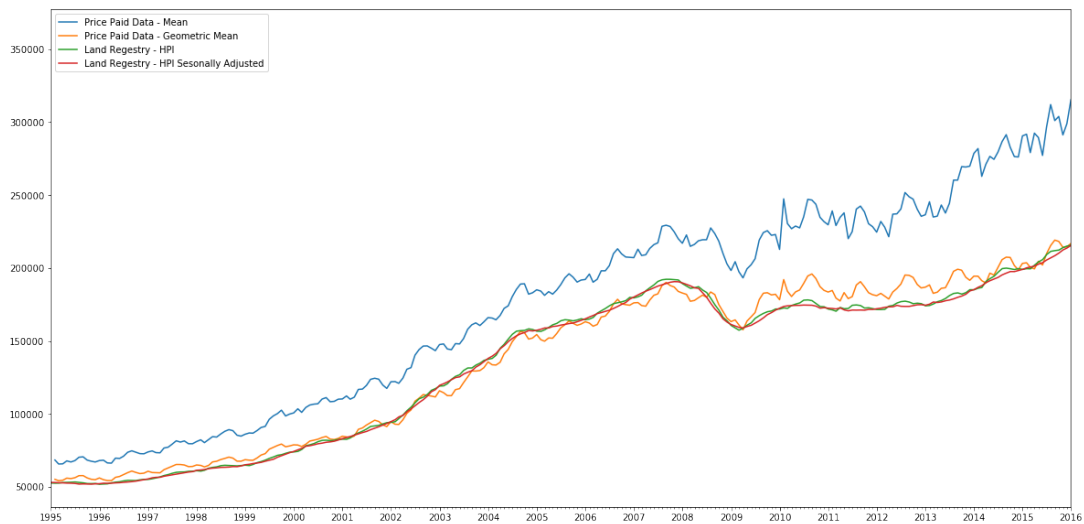
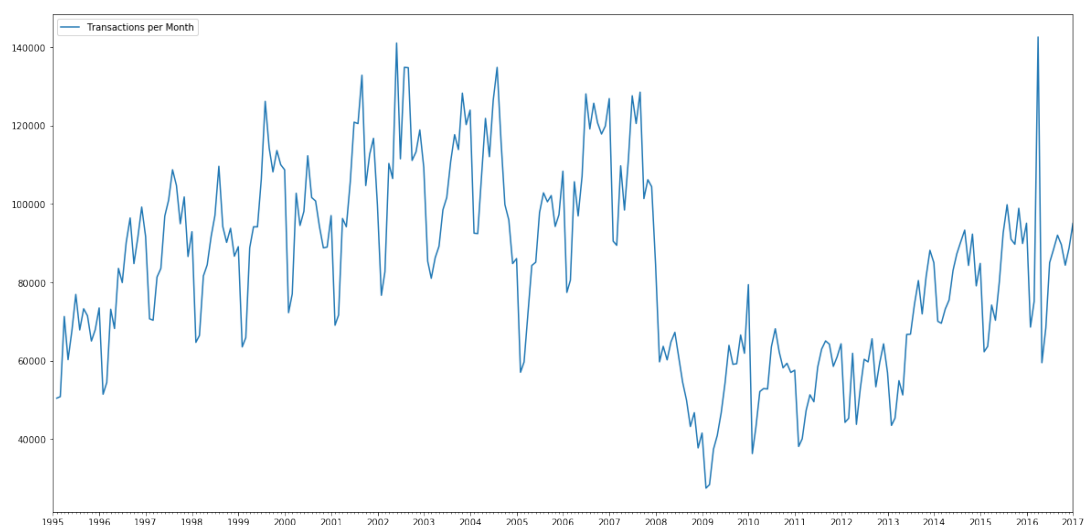


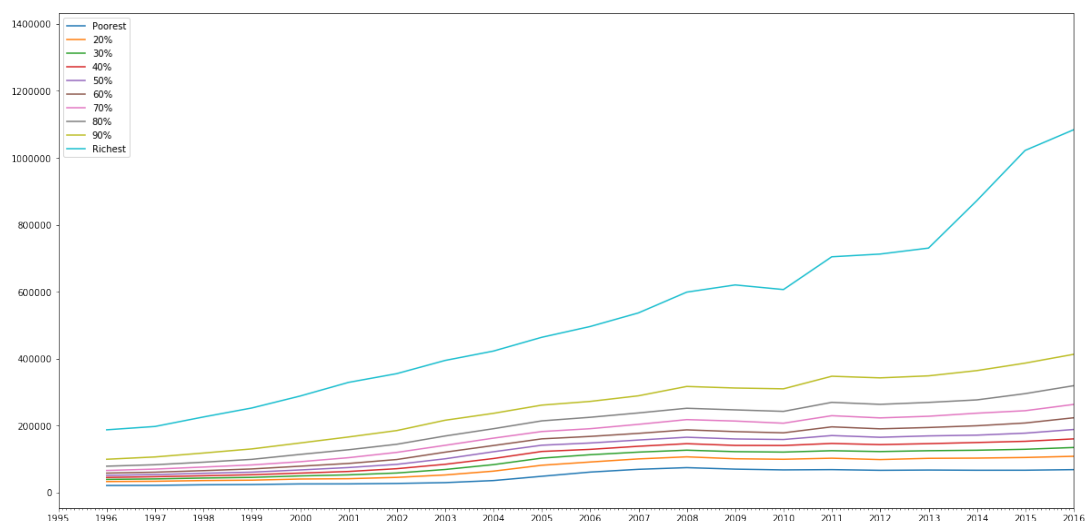
Figure 7.5 further shows what appears to be a season variation in the simple mean and geometric mean in comparison to the HPI, which is adjusted to account for seasonal variation. To explore this phenomenon, Figure 7.6 plots the number of transactions per month for the PPD dataset. It reveals a clear seasonal pattern to the number of transactions conducted. A pattern that shows great variation throughout the year but is broadly stable from year to year. The following analysis does not apply a seasonal adjustment to the data used but follows the clear January to December peaks yearly to account for this variation.

Figure 7.6: Transactions per Month, PPD



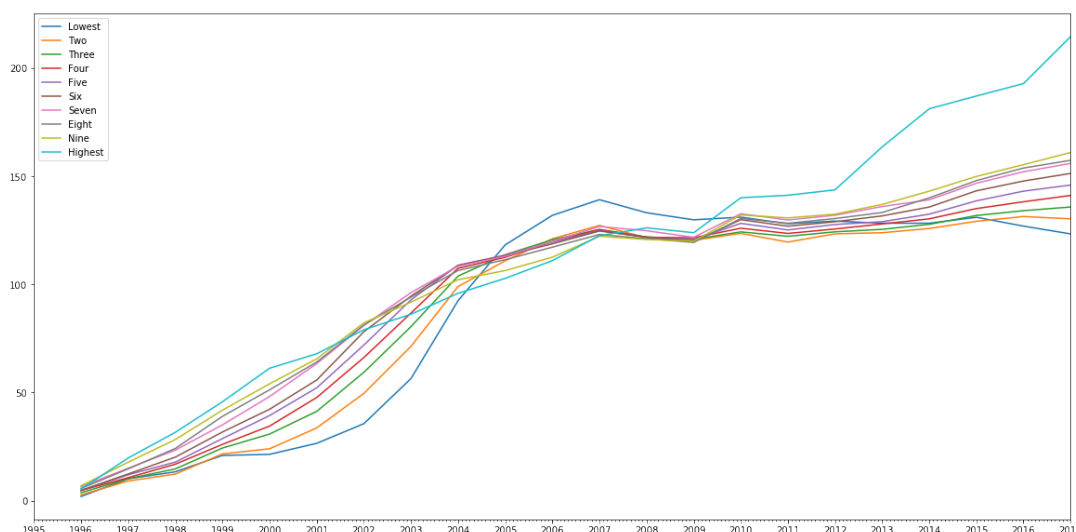
To begin approaching trends in transaction data from a non-geographic perspective, Figure 7.7 shows the mean price of yearly transactions in the PPD by decile. In contrast to the picture presented by the HPI, the decile banding reveals highly differentiated price growth. Modest growth for the lowest decile, with the top decile pulling away at an accelerating rate from all other deciles, can be seen.

Figure 7.7: Mean Growth in Price by Decile, England and Wales



This is further illustrated by Figure 7.8 in which the cumulative percentage change of the mean of the price in each decile is tracked. This Figure shows the rapid price growth in each decile from 1995 until the mid-1990s. The highest decile initially led this growth until the early 2000s, when the growth in all other deciles overtook it. Particularly notable is the steep cumulative growth of the lowest decile during this period, with this being the decile with the highest cumulative growth from 2005 to 2009. After 2009, however, price growth for the bottom decile stagnates, with their being modest cumulative growth for all other deciles after 2009. The exception is the top 10% of the market, which shows significant cumulative growth, which from 2009 onwards pulls away from the other deciles.

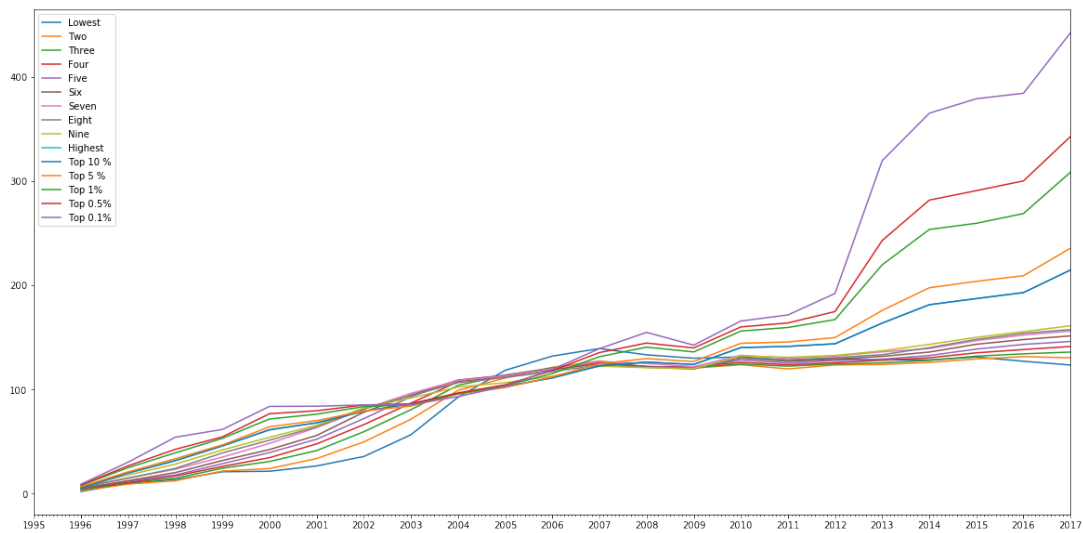
Figure 7.8: Cumulative Percentage Growth by Decile, England and Wales



The calculation is run again in Figure 7.9 with the top decile further being broken down by the top 5, 1, 0.5 and 0.1 per cent. Therefore there is greater cumulative growth in each smaller top band shown, demonstrating that transactions drive the price growth seen at the very top of the market.

It is, therefore, evident from breaking down the underlying PPD data by decile what the geographical breakdown of the HPI suggests: that in areas with a high

Figure 7.9: Mean Growth in Price by Decile, England and Wales



concentration of wealth and elites, the dynamics of house price growth are different to those of the UK as a whole.

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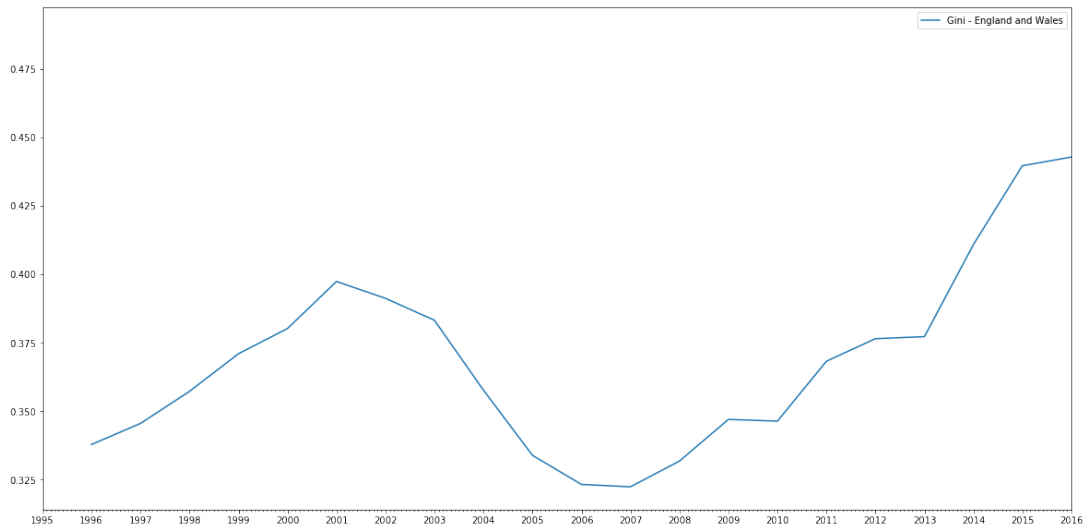
## Gini

Through developing a decile approach to working with the PPD data on which the HPI is based, it becomes clear that prices at the very top of the housing market are growing much faster than those of the market as a whole. To further explore this dynamic, this section moves on from a decile breakdown of transactions within the HPI to examine this growth in relation to the housing market as a whole. This research uses the data available in the PPD to construct a Gini coefficient for the housing market in the UK, to explore the dynamics at play within the UK housing market and its relation to elites and housing. The Gini coefficient is a summary measure of the distribution of values. Wherein 0 represents perfect equality within the distribution, i.e. all values are the same, and 1 represents perfect inequality within the distribution, i.e. one value is the sum of the distribution, and all other

values are 0.

The results can be seen in Figure 7.10. For this Figure, the Gini coefficient was calculated every year with the price of all of the transactions that were logged in the PPD for that year.<sup>7</sup> When applying this measure to the housing market, it should be noted that while the Gini coefficient is a measure of inequality within a distribution, it is not a measure of inequality in itself. Rather, it is reflective of the range of the distribution of values within the housing market, in a manner that is more comprehensive than traditional covariance measures (Yitzhaki and Schechtman 2012). However, the inequality of transactions in the housing market can indicate broader trends within wealth inequality in the UK. Given, the housing market itself represents 61% of the UK's entire net wealth (Land Registry 2017b) and being the largest mean category of wealth holdings across all age groups (Crawford, Innes, and O'Dea 2016).

Figure 7.10: Housing Market Gini by Year, England and Wales



<sup>7</sup>Where the Gini is defined as:

$$G = \frac{\sum_{i=1}^n (2i - n - 1)x_i}{n \sum_{i=1}^n x_i} \quad (7.3)$$

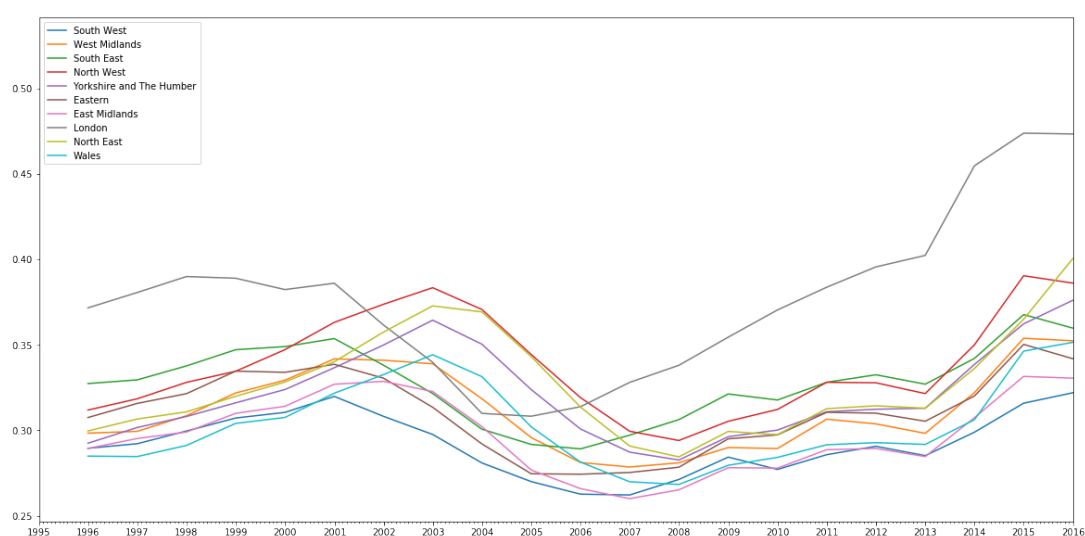
An implementation in which the  $x$  values are pre-sorted in ascending order, significantly improving computation time (the python implementation of which was written by (Guest 2017))



The picture that Figure 7.10 paints of the housing market is notably different from that of the HPI, with the ‘inequality’ between transactions rising through the late 1990s before falling through the early 2000s and then rising rapidly again in the wake of the 2007 financial crisis. These trends are explained by the decile analysis carried out in the last sub-section. The fall in inequality between 2000 and 2007 was driven by the price growth of the bottom deciles growing faster than higher deciles during this period. However, this fall was followed by rising inequality driven by a stagnating lower decile and a top decile growing faster than the rest of the distribution.

When broken down by Government Office Region, as we can see in Figure 7.11 shows there is a broadly similar picture, except for London, which appears to be leading the trends seen in other regions and racing ahead in terms of inequality within the market.

Figure 7.11: Housing Market Gini by Year, Government Office Region



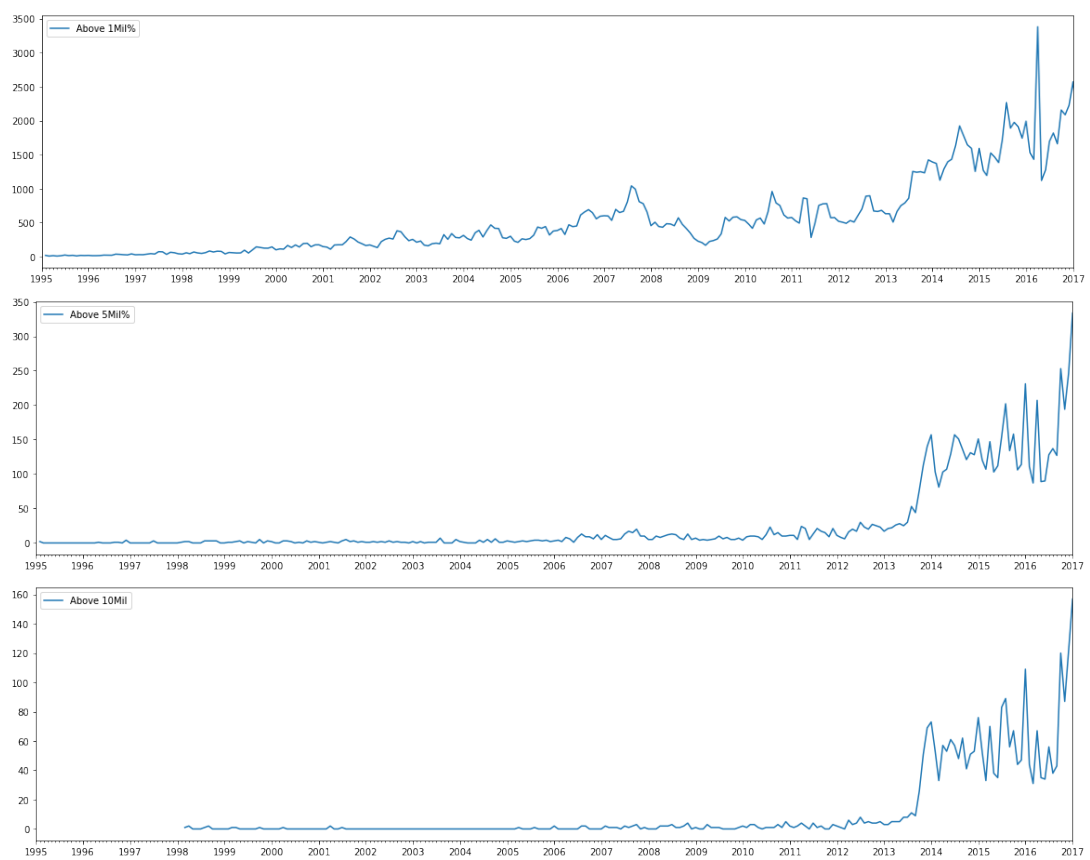
The apparent resistance of the Gini for London to the financial crisis in 2007 highlights one of the main advantages of Gini as means by which to examine macro trends in the housing market—showing that as a measure, its calculation is independent of the number of transactions that have taken place — which stands it

in contrast to index measures which are often altered by transaction volume. Furthermore, that the Gini measure is location agnostic may also be seen as an advantage, providing a macro level optic to an area of study that the specificity of place can blind. That said, the usual critiques levelled against the Gini as a measure of inequality are still applicable in its application to this new context. In particular, that it is a measure of activity within the market but is not reflective of the broader housing stock and the value located within it, which can be seen as broadly analogous to debates over the measurement of incomes vs wealth (Killewald, Pfeffer, and Schachner 2017; Spilerman 2000). Moreover, while the Gini measure demonstrates a shifting dynamic in the composition of the housing market transactions not reflected in the HPI, it tells us little about the drivers of this change.

However, while using Gini and deciles for the housing market paints a compelling picture of the overall dynamics of the housing market in England and Wales, the dynamics of rapid price growth at the top 1% of the market raise further questions% of the market rise. Figure 7.12 starts to do this by plotting a cruder picture of the high end of the market, which charts the transaction volume for the 'prime' and 'super-prime' property categories.

The selection of these price points is based broadly on the use of 'prime' terminology used by 'high end' London estate agents (see: Knight Frank 2017). The 'prime' is usually defined as properties listed at between the £1 - 10 million mark and the 'super-prime' above £10 million, with their price and the type of buyer this attracts being the main signifier for this section of the market. The seasonality and volatility of residential property sales are on full show here. Most importantly, these graphs reveal that the huge jump in decile and Gini growth from 2013 is largely an artefact of a jump in the number of transactions in properties in this price band. A feature that, while picked up in the rises in the Gini and price bands in the decile

Figure 7.12: Transactions per Month by Price Bracket



analysis, is not picked up in these volume agnostic measures. These measures stand testament to the impact this small set of transactions had on the widening inequality in the distribution of house prices.

The question that Figure 7.12 in 2013 to prompt this sudden change in transactions at the very top of the housing market? The answer is found in a combination of property taxation and how housing market prices are recorded and captured in the PPD and HPI. In the 2012 Autumn Statement, Chancellor George Osborne announced that the “Hundreds of millions of pounds of tax loopholes are being closed with immediate effect” in upcoming legislative changes (Gov.uk 2012). Amongst these changes, which came into force in the 2013 Budget (Hansard 2013), was a new tax called the ‘Annual Tax on Enveloped Dwellings’. This tax placed an annual levy on residential properties owned by overseas companies that the company does not use for commercial purposes. In effect, it was a tax that was targeted specifically at a practice of structuring the ownership of real estate through shell companies located primarily in secrecy jurisdictions for tax planning. The advantages accrued include avoiding stamp duty, capital gains and inheritance tax, amongst other benefits. Consequently, many wealth management firms advised customers to restructure the holding of their U.K. homes before the introduction of these new charges, and in the use of such schemes for the purchase of new property, to avoid the cost and the associated changes to the treatment of capital gains and inheritance tax in cases where properties were owned in this manner (Brassey and Burns 2019; Peerless 2018).

As a result, there was a large jump in the number of transactions at this level from 2013 onwards. It is not that the tax brought forward a huge influx of properties that were being bought and sold at this time, but rather that it had a distinct impact on how such transactions were being recorded. This change highlights the importance of how the infrastructure of land registration can record and quantify information

about the housing market.

These transactions for some of the most expensive homes in the country had previously taken place through offshore shell companies. As a result, they had fallen through the 'gap' between how housing is defined in the statistical view of the housing market and how the land registry structures its information—with the fact that these homes were owned by companies located overseas having diverted them into the OCOD rather than the PPD dataset used to construct the HPI. Had the definition of what was considered a housing market transaction been different, including all properties used for domestic occupation regardless of how they have owned the very top of the housing market would not have been missed in this way.

Their absence from the PPD, and by extension the HPI itself, is therefore approached in this research as a point of breakdown in the information infrastructure of land registration and the quantification of the housing market. This breakdown and the previously 'missing' high end of the property market from the statistical picture of the housing market being taken up in the next Chapter.

## **Conclusion**

This Chapter has explored the HPI in-depth, both in how it is constructed and what the resulting figures and datasets can tell us about the relationship between elites and housing. It has demonstrated growing inequality in transactions within the property market, a trend driven by properties at the very top of the housing market. Moreover, due to how the HPI is constructed has largely been missed in official housing market statistics. This is true both in terms of the methodology through which the HPI is constructed — the purpose of hedonic regressions is to best find the central tendency within the housing market — and the data made available through the infrastructure of land registration.

The first section of this Chapter focused on the methodology behind the construction of the HPI. With the first subsection, through a critical examination of the econometric assumptions that underpin the use of hedonic methods, finding a miss-match between their theoretical potential to model the endless variety of the built environment clashing with the statistical and material limits of the built environment the limited set of variations which are modelled. This theme was further explored in the gap between the definition of housing, as required in the development of an RPPI, and the data collected through the information infrastructure of land registration. The split of 'housing' is based on ownership of a property, rather than its use, correctly classing many transactions but not always aligning with using a property as a residential dwelling. This split is particularly important in the findings at the end of this Chapter, which shows the jump in properties being transacted at the very top of the housing market after the introduction of ATED. Any residential home structured through a company envelope has been excluded from the PPD and HPI due to this data practice—a theme explored in greater depth and quantified in Chapter 8. The final subsection examined the data, which is used to supplement the LR's transactional data, focusing on using ACORN geodemographic data. Questions were raised about the extent to which the inclusion of this data is appropriate in the context of a house price index if the use of this data constitutes a form of 'double counting' house price information, and the extent to which the inclusion of such data, in the context of index performativity, could create self-reinforcing socio-spatial dynamics.

The second section of this Chapter built on this analysis by working with the data and figures produced due to this process. The first sub-section looked at the HPI. It was found that, as a result of the methods on which the HPI is based, it is not suited to analysing the relation between elites and the housing market, but it could be glimpsed through the geographic breakdown of these figures. The second sub-section took this exploration further by using the PPD dataset on which the HPI

is based. Through approaching the housing market in terms of deciles and percentiles, this section found that the very top of the housing market displays different price dynamics than that of the rest of the property market. The very top percentiles are shown to be pulling away from the price growth of the rest of the housing market. This pattern is explored further in the final subsection, which constructs a Gini coefficient to measure inequality within housing market transactions. It shows that inequality within housing market transactions has significantly increased since 2008. This increase is shown to be driven by properties at the very high end of the housing market.

The analysis of the housing market in terms of the inequality within transactions reveals the jump in transactions at the very top of the market following the introduction of ATED. This jump highlights the importance of how the information infrastructure of land registration classifies data. These two themes are taken up in the following Chapter. Chapter 8 presents research that uses the research presented in this Chapter as its point of departure. It seeks to 'add back in' the transactions of elites at the very top of the market that are obscured by how the infrastructure of land registration can classify transactions and how the housing market is quantified.

# **Chapter 8: A Breakdown of the Information Infrastructure of Land Registration? — Working through Land Registry Data**

## **Introduction**

The research presented in this Chapter works with the LR data to ‘add back in’ the high-end properties of today’s elite that are missing from UK housing market statistics. As the houses which this Chapter identifies are owned through overseas shell companies, the overwhelming majority are located in tax haven jurisdictions and have therefore been missing from housing data published by the LR. This Chapter approaches this missing data as a ‘breakdown’ in the information infrastructure of land registration. By approaching the missing data as a point of ‘breakdown’, the research in this Chapter can both interrogate how the LR data is structured and use a range of datasets and computational methods to correct this deficit. In so doing, this research finds that the ‘missing’ houses identified in this Chapter are not the result of a ‘bug’ in the infrastructure of land registration, but a ‘feature’ that stems from the long-arch historical development of the system of land



ownership and registration.

To this end, this Chapter returns to the vignette of Witanhurst house with which this Thesis started. It does not look specifically at this case but rather seeks to address the puzzle presented in aggregate. As such, the research presented in this Chapter asks:

How does the information infrastructure of land registration complicate knowledge of elite homeownership?

How can Land Registry transaction data be used to gain a better understanding of elites and housing?

This Chapter picks up where the analysis of the land registry data ended in the last Chapter by taking the unexpected jump in extremely expensive homes in 2014 following the announcement of the Annual Tax on Enveloped Dwellings [ATED] as its point of departure. It does so by approaching the jump in high-end transactions as a moment of breakdown in the infrastructure of land registration. The structuring of the ownership of domestic properties through overseas shell companies for tax evasion brings attention to the lack of information that the LR collects about the transactions it processes. The research presented in this Chapter seeks to make visible this moment in the information infrastructure of land registration and question if this is a moment of breakdown or the intended functioning of land registration to explore the relation between elites and housing.

Therefore, this Chapter is based around a split in how the Land Registries data is collected, stored, and understood. From this split, the research in this Chapter focuses on identifying those residential properties that had previously been 'missing' and using the resulting figures to understand better both the infrastructure of land registration and elites and housing. Therefore, the research in this Chapter is a case study of a point of 'breakdown' in the information infrastructure of land

registration, which is explored through using datasets provided by the land registry. Building on the analysis of the HPI and PPD in the last Chapter, this Chapter adds to this picture by exploring residential houses which have been ‘enveloped’ in company structures using data sets provided by the LR on these transactions, and then merging this data with other datasets. In doing so, this Chapter will explore property transactions by overseas companies contained in Overseas Company Dataset [OCOD] and, through computational methods, identify the residential properties contained within it. This research will present original findings on elite home ownership in England and Wales and use this analysis to further an understanding of land registration as an information infrastructure.

This Chapter is split into six sections. The first section presents the methods used in this Chapter and locates them within the sociological literature and their relation to the study of infrastructure, elites and inequality. As the methods and ethics of the research presented in this Chapter differ from those in other Chapters, this section develops the concept of ‘investigative sociology’ as a way of working with big data to research elites. The remaining five sections are focused on working with the data itself and works through the process of identifying the elite houses that had previously been missing from housing market statistics. The second section starts by introducing the datasets used in this research; three LR datasets, a leaked copy of an LR dataset, and two energy performance datasets which are used to identify domestic and commercial properties. The third section then examines what can be learnt from the dataset of transactions by overseas companies as it was released by the LR, where the residential houses owned through shell companies are ‘hidden’. The fourth section then brings the datasets used in this research together. It details issues with each dataset, the methods used to improve and correct the data and the process used to merge the data to identify domestic properties owned by overseas companies. The fifth section of this Chapter looks at the results from this matching process, focusing on the geography of enveloped dwelling and what this reveals

about elites. The final section of this Chapter looks at the prices of the properties previously missing from housing market statistics. This section is split into two subsections; the first part addresses the price information missing from LR data, and the second analyses the results and compares these findings to the housing market presented in the last Chapter.

## **Big Data, Sociological Research and Investigative Methods**

The research presented in this Chapter makes novel use of a number of large, publicly open datasets as a means of investigating the houses ‘missed’ by the information infrastructure of land registration. This research focuses not to see what can be deduced from each data source in isolation but what is revealed through their combination. The orientation of this approach is thus investigatory, drawing its focus from the omissions of the Land Registry and thus the production of knowledge about the UK’s housing market, discussed in the last Chapter. Such an approach is enabled by the new opportunities presented by new digital datasets and recent methodological and technological enhancements that now allow researchers to utilise these sources fully. This approach, and how it is carried out, is explicitly inspired by the suggestions of Miller and Dinan (2016) on how ‘investigatory research’ can be adapted to, and further, academic enquiry. As they argue:

*“the social scientist adopting an investigative approach is akin to an investigative journalist, but using the arsenal of research methods and practices of the social sciences to produce what Molotch termed ‘deep journalism’ (1994). We think this is particularly apt and timely as there are signs of a revival of investigative journalism embracing big data. The investigative style we are advocating here is interdisciplinary, and sociology can engage with those inside and out with the academy who are also interested in researching the powerful using digital tools*

*and big data. We take this notion of 'studying up' (Nader 1972; Williams 1989) as a jumping-off point in sketching one means for empirical sociology to forge new forms of elite studies using big data and ICTs, exploiting the proliferation of new data sources, be they leaked, scraped or officially published through transparency, disclosure or open data projects."*

Taking an 'investigatory approach' is thus a mode of research inspired by, and seeks to further, the wider revival of elite studies within sociology. In particular, this approach seeks to utilise data sources that may be of equal interest to journalists but are tackled to further empirical sociological research. As such, this approach seeks to bring social science research methods and practices to bear on new forms and sources of data. This development is a reflection of changes to the sources and production of data, as it is to how sociologists approach research methods.

The need for methodological innovation and the development of new approaches to the study of elites has been highlighted by Savage (2014), who has argued that traditional sociological methodologies are not suited to the study of this powerful, socially remote and often inaccessible group. The revival of elite studies within sociology is as much a theory as it is a methodological turn, with the renaissance in this field of study has been marked by a move away from the Weberian assumptions that had underpinned the mid-century study of elites (Wedel 2017). In its place, the new elite studies have embraced the need for a multiplicity of theoretical and methodological approaches, which allows researchers to move across disciplines and theoretical traditions while retaining a clear focus on the study of the wealthy and powerful (Davis and Williams 2017). An 'investigatory approach' thus contributes to the development of contemporary elites' studies through embracing both changing attitudes towards the means of enquiry and the substance through which it is pursued.

Moreover, an investigatory approach is explicitly focused on the utility of the research

to wider questions of public interest. This is of particular importance to need to 'study up' when adopting such an approach. As its purpose is not, as with much other academic research, to pursue questions of only social scientific interest, but to use the pursuit of academic research and the development of sociological knowledge as a means through which the wealthy and powerful can be held to account. To quote Miller and Dinan (2016):

*The purpose of such work is neither simply academic nor activist, but should also have practical relevance in that it assists accountability.*

This explicit studying up is an important part of the ethical and moral justification for using investigatory methods in a manner that resonates with the journalistic justifications for such work. As, while social scientists often shy from combining datasets in a manner that could allow for the identification of individuals, or of probing the data at a granular, rather than at an aggregate level, in the case of investigatory methodologies, there is a specific and compelling reason employing such techniques.

The possibilities of 'investigatory research' put forward by Miller and Dinan, while focusing on the study of elites, forms part of a large debate on the challenges facing contemporary sociological research. In particular, their article is part of an edited collection of responses and reflections by McKie and Ryan (2015) to the influential arguments put forward by Savage and Burrows (2007) in their now classic article on the "*Coming Crisis in Empirical Sociology*". In which Savage and Burrows (2007) argue that sociologists were ill-prepared for the oncoming deluge of digital data and that without adapting and developing new methodologies to engage with this emergent reality, the discipline risked an increasing detachment and irrelevance from the social world it seeks to understand. Indeed, as the authors note, in a later reflection on this article, at the time of writing, the term 'big data' was unknown to a sociological audience, and it is only in hindsight that the prescience of their position

became apparent (Burrows and Savage 2014).

Much of Savage and Burrows's original article focuses on the possibilities presented by transactional data and geodemographic classifications. In particular, the focus on how both the collection and classification of such data was the preserve of what they called 'commercial sociology', to which hitherto academic sociology had paid little attention (See: Burrows and Gane 2006). Indeed, while sociological research is now far more aware of the use of transactional data and geodemographic classifications outside of the academy, the extent to which the discipline has engaged with these data sources remains limited (Webber and Burrows 2018). Rather, sociological research has engaged less with the data of 'commercial sociology' and more with what has come to be known as 'digital trace data, which is produced as the by-product of online social interaction (Edwards et al. 2013).

The turn towards the study of digital trace data as a means through which sociologists can understand the social world is, however, not without its limitations. As Manovich (2012) has pointed out, much of this large social data is concentrated in the hands of a few vast technology companies; access to which is must always be negotiated by the researcher — a critique which is equally true of transactional and geodemographic data. The negotiation of access to such data risks fragmentation of research practices, with a select few researchers being given access to the 'walled garden' of proprietary data on terms that are both favourable to, and in the interests, of the companies involved. Whereas to attempt to access such data without the collaboration of the companies involved through web-scraping and other similar methods would result in more complicated and patchier data collection and potentially put the researcher at risk of copyright and terms of service violations. Or for social research to turn its back on digital social data entirely, potentially placing social research in a position that is increasingly irrelevant to an ever digitising world (Salganik 2017). The dilemma faced is not only one of access but also how

researchers should engage with such data and on what terms this engagement should be conducted.

The challenge facing social scientists in their engagement with new digital data sources is not limited to questions of access but also those of methods. As, despite the apparent utility, to say nothing of profitability, of big social data to the companies whose platforms facilitate its generation — to sociologists, its benefits remain open to question as the analytic techniques driving the adoption, use and understanding of ‘big data’ are those of data science. Moreover, while many of the basic statistical principles on which data science draws are the same as established social science methodologies, the intent with which they have been developed and used differs significantly, with their power being found in their ability to use the size of the big data, along with cutting edge statistical learning techniques, to predict behaviours. By contrasts, for sociologists, the power of statistical methods is in their ability to demonstrate causality, with little attention being paid to their predictive properties. These priorities have begun to be challenged as interdisciplinary work using computational methods has begun to encroach on the traditional domains of sociological research. While some within the discipline have sought to bridge the gap (Keuschnigg, Lovsjö, and Hedström 2018) such differences may prove to be irreconcilable. In particular, Uprichard (2012) has argued that predictive model’s risk being stuck in a perpetual present, which limits their analytic ability to ‘now casting’, which is ultimately at odds with the principles of a sociological imagination.

Therefore, the politics of method and digital data is now one of the defining questions facing social science. One which mirrors how these such technologies - of data collection, algorithmic classification, and real-time monitoring - are being applied to as many forms of social life as they can capture. The result of which is that *“data is generative of new power relations and politics [which] is evident in the recent*

*controversies about how Big Data was used in the US election and UK referendum to create personalised political advertising to influence how people voted*", who Ruppert, Isin, and Bigo (2017) go on to argue that this is demonstrative of the fact that "*data and politics are inseparable*". Thus, the strength of an investigatory approach to digital data is that the political nature of data is embedded in the core assumptions that structure how and why the research should be undertaken. In particular, the research presented in this Chapter side-steps many of the challenges discussed in the use of transactional data as it is not owned by a commercial interest but is freely published by a government agency, the Land Registry. In doing so, it seeks to utilise these methods to the study of the information infrastructure of land registration as a means of opening up the *Blackbox* of registration and to investigate a potential site of 'breakdown'.

## **Introducing the Datasets**

This Chapter makes use of two main data sources and six distinct datasets. The two main data sources are property transaction records and energy certification data. These are The Land Registry's Price Paid Data [PPD], Commercial Corporate Ownership Data [CCOD], Overseas Company Ownership Data [OCOD], a copy of the Overseas Company Registration data, which was leaked to, and then subsequently published by Private Eye [EYE]; and the Department for Communities and Local Government's Domestic Energy Performance Certificate Registration Data [EPC-DOM] and Commercial Energy Performance Certificate Registration data [EPC-NONDOM].

### **Land Registry Data**

The development of the LR's system for the registration of property was discussed in depth in the preceding Chapters, and the LR datasets used in this Chapter are the



Table 8.1: Table of the Datasets used in Chapter 5

Dataset	Data Publisher	Start Date	Size
Price Paid Data [PPD]	LR	1995	23,346,509
Company Ownership Data [CCOD]	LR	1971 *	3,373,346
Overseas Company Ownership Data [OCOD]	LR	1999 **	97,008
Private Eye Overseas OCOD [EYE]	LR/Private Eye	1999	100,997
Domestic Energy Data [EPC-DOM]	DCLG		
Commercial Energy Data [EPC-NONDOM]	DCLG		

\* Threshold of 10,000 transactions per year.

\*\* Threshold of 1000 transactions per year.

public-facing manifestations of that process. The main focus of the LR system discussed in Chapter 7 was limited to privately owned domestic property and thus confined itself to the PPD dataset. The CCOD and OCOD used in the Chapter are broadly similar in the information they contain about the properties being transacted, with the addition of information on the operating name of the owner and their corporate form. The defining feature between these three datasets is the legal entity that owns the property, with transactions being conducted by private individuals assigned to the PPD of any corporate form the CCOD and any corporate form not located within the UK to the OCOD. It should be noted that, as was discussed in Chapter 7, that the LR remit only covers England and Wales and therefore, properties owned in Northern Ireland, Scotland, or any other UK territory are not included in the data presented here. Furthermore, that while the transactions in these datasets go back several decades, it is crucial to remember that the compulsion to register transactions with the LR was only introduced in the 2002 Land Registration Act (Hansard 2002).

The availability of these datasets to researchers has been a relatively recent development, with the PPD having first been released under an Open Government License in 2012 (Land Registry 2012). The release of the PPD forms part of a wider shift in public policy priorities which have responded to advocacy for greater government ‘transparency’ — particularly in the form of releasing information and

data of statistical interests which had previously been closely held. For the Land Registry, the purpose of opening up this data was to, in its own words, provide “opportunities for innovative developers, businesses and the public to generate social and economic growth through the use of data” (Land Registry 2012, pp 6).

However, while the publication of this data was a boon for researchers, the move towards greater ‘transparency’ through the release of greater information and data should not be accepted simply as an unassailable good. As, while such data provides researchers with a data source that would previously be far beyond the means of even a large and well-funded research team, the use of such data is not without its drawbacks. These concerns can broadly be split into two categories: issues with the data itself, and more broadly, with how the information is collated and released. For example, the power of the PPD data to researchers is in its granularity. However, the Information Commissioners Office has questioned whether this granularity constitutes a form of personal data to which access should thus be appropriately restricted (Boswarva 2017).

While at a far broader level, questions have been raised as to whether ‘transparency’, on which the drive to release such datasets is based, holds together as a sufficient basis for the provision of such data. This tension is to be found within much of the literature on the politics of ‘open data’. For example, it has been explicitly taken up by Fenster (2015) who argues that the promise of a more accountable government, better policy and truer democracy is not something that can be delivered by providing more information. Rather, transparency as its own political goal, he argues, “consistently disappoints” as there “is never enough of it”.

The contradiction which Fenster reveals further hints towards the politics of how the data itself is produced. In that, the provision of such data is not simply a matter of it being released. Rather the provision of open data is an act of knowledge production

in and of itself, with the ways in which the data is assembled always being a process which is negotiated and contingent, through which information held by an institution is translated into a form which can be disclosed (Hansen and Flyverbom 2015). Wherein the researcher sees open data, no matter how granular, it should still be distinguished from the 'raw data' of institutional practices of data collection as storage. Indeed, as Bowker (2005, pp 184) states "*raw data is both an oxymoron and a bad idea; to the contrary, data should be cooked with care*". Whether much of the publicly released data as open data has been 'cooked with care' is a matter that is open to much debate. As the stated aims of what is intended or made achievable through the provision of open data are often at odds with the original purpose for which organizations collected this data. Heimstädt (2017) argues that the release of open data sets often results in a 'decoupling' between the stated aims of opening up data and the core structure and purpose of an institution. A mismatch which he argues, can result in the 'open-washing' of the data on offer. Which can result in:

1. *Selecting the disclosed information to exclude parts of the data or parts of the audience.*
2. *Bending the information in order to retain some control over its expected value.*
3. *Orchestrating new information for a particular audience.*

(Heimstädt 2017)

Of which charges of all three items can be levelled against the Land Registry.

In particular, the 'opening up' of the PPD under an OGL must be considered in the context of what information was accessible from the Land Registry before this release. As far from being inaccessible, information held by the Land Registry had been available in a commercial context. Then, as now, it was possible to access the title deeds to a property for a small fee (currently £3 per property) — a provision

which had come into force in 1990 following the Land Registration act of 1988, which amended the Law of Property Act 1922 to allow for an unrestricted right of request to registration information (Land Registry 2012). Of course, while £3 may be a reasonable fee for accessing detailed information on a specific property, it quickly becomes a prohibitive burden to researchers, even for a relatively modest area. Indeed, after the public release of the PPD, the Land Registry continued to offer this subscription service which was then limited to commercial property transactions held in the CCOD and OCOD. At the time of the release of the PPD, the Land Registry notes that it only had 37 subscribers to these datasets, a figure which becomes understandable in the context of a reported cost of £50,000 per year for a full subscription (Boswarva 2012).

As a result, using property transaction data as a means of holding the corporate sector to account or to investigate the use of corporate bodies as a means of tax structuring was priced beyond the reach of curious journalists, activists and academics. Rather, the release of the PPD could be seen as means of ‘open-washing’ through selective disclosure, ensuring that the data could only be used as a means of examining the *domestic property market* rather than the far broader sweep of *land ownership*.

The release of only the PPD and not the CCOD or OCOD reveals the ‘decoupling’ between the release of data and institutional purpose. Firstly, the information disclosed fitted within the LR core institutional purpose as a facilitator of the residential property market but excluded the data collected in the CCOD and OCOD, which fell outside of this remit. Secondly, the public release of the PPD, while continuing to run a subscription service to the CCOD and OCOD — as well as products like the UPRN-Title Number lookup table (which is a crucial tool for accurately linking individual properties to many other commercial and statistical databases, which remains a paid-for product at the time of writing) — the Land Registry retains control over how its data can be used both symbolically and as a

measure of the market value of that information. Finally, the release of only the PPD and the information held within it is orchestrated to be of interest to those involved in the property market itself. In contrast, the similar information held by the corporate sector in the CCOD and OCOD is of greater political significance and has been kept walled away from journalist, researchers and activists, who may have sought to use it in this manner.

This is further reflected in the data quality of the OCOD and CCOD datasets compared to the PPD dataset. As discussed in Chapter 7, not all transactions are released as part of the PPD dataset; rather, it contains only those deemed to be transferred in which property is exchanged at its 'full market value'. The curation of this specification is, however, one that requires maintenance. With the price of a transaction being checked against the definition of 'full market value' and, if necessary, filtered out of the PPD at several stages, from data input by caseworkers, the checking of potential non-market values which are flagged for weekly regional quality assurance, to monthly aggregate checks carried out by a national Compliance and Audit teams (Land Registry 2018c). Therefore the multiple levels of quality assurance taken in the production of the PPD dataset result from the use of the dataset for the production of the HPI. As with the HPI being designated a National Statistic, the HPI follows the Office for Statistics Regulation (2015) Quality Assurance of Administrative Data toolkit. This toolkit seeks to ensure the integrity of the data used in the production of the HPI at each step of the collection of data for its production. By contrast, the CCOD and OCOD datasets are not used to produce any statistical knowledge and are therefore not subject to the same quality assurance levels as the PPD. The difference this entails is starkly highlighted by the extent to which price information — one of the easiest and most important variables to record in the transaction of a property — are missing from the OCOD and CCOD datasets in Table 8.2. Indeed, the production of the HPI, as discussed in Chapter 6, now forms a core part of the LR's remit, and the information infrastructure of land

registration is accordingly marshalled to this aim. By contrast, the CCOD and OCOD are produced as a by-product of the process of registration and with the information infrastructure only being used to verify and secure the veracity of ownership and its transference and thus resulting in a far lower level of data quality when treated as an aggregate source for statistical analysis.

### **Data Leaked to Private Eye**

The OCOD data had been a paid-for product until 2017; therefore, the first details of what was contained within this dataset to reach the public domain came from the reports of investigative journalists at Private Eye magazine who obtained a leaked copy of the dataset. The implications of which can be seen in the reports published in September 2015 by Private Eye, of the scale of the ownership of UK property by overseas companies which are primarily located in tax haven jurisdictions. The OCOD itself was later released publicly by the LR under an OGL in 2017, in an unassuming blog post that caught many researchers and activists who had long been lobbying for its release by surprise (Land Registry 2017a). However, the release of the OCOD is notable for what is missing as much as what is contained, particularly when viewed alongside the leaked Private Eye copy of the same data. In particular, one of the most important aspects of the data, the price, is missing for many transactions in the LR release but is to be found in the Private Eye release — which is addressed in the following section. This data is used in section three of this Chapter to correct as many possible transactions in the OCOD data with the correct price information.

### **Energy Performance Certification Data**

The final datasets used is the Energy Performance Certificate Register - Domestic [EPC-DOM] and Energy Performance Certificate Register Commercial [EPC-NONDOM]. These datasets, released for the first time in March 2017, contain

Table 8.2: Missing price information in Land Registry Datasets

Year	PPD - N	CCOD - N	OCOD - N	PPD: Missing	CCOD: Missing	OCOD: Missing	PPD %	CCOD %	OCOD %
1995	796529	33043	135	0	3217	25	0	9.73	18.51
1996	964591	44534	231	0	4446	60	0	9.98	25.99
1997	1093633	53690	288	0	5444	76	0	10.13	26.38
1998	1049703	46481	428	0	5253	118	0	11.39	27.57
1999	1193999	49750	1113	0	5534	321	0	11.12	28.84
2000	1128522	49284	1646	0	6138	389	0	12.45	23.63
2001	1244984	52084	1466	0	6563	425	0	12.60	28.99
2002	1350896	64204	1665	0	6418	419	0	9.99	25.16
2003	1234660	57295	1811	0	7027	465	0	12.26	25.67
2004	1231126	75731	2254	0	8288	600	0	10.94	26.61
2005	1060754	116489	3820	0	8093	694	0	6.94	18.16
2006	1325296	152169	3892	0	14485	1098	0	9.51	28.21
2007	1271617	133782	4891	0	18312	1384	0	13.68	28.29
2008	649281	184519	5344	0	17235	1330	0	9.34	24.88
2009	624953	172913	4317	0	11633	1268	0	6.72	29.37
2010	662951	151497	4879	0	13302	1329	0	8.78	27.23
2011	660845	143880	5087	0	12969	1270	0	9.01	24.96
2012	668453	166569	6795	0	11780	1033	0	7.07	15.20
2013	810426	140144	6564	0	12495	1147	0	8.91	17.47
2014	983859	169701	8033	0	22357	2083	0	13.17	25.93
2015	1009407	262156	9247	0	37947	3192	0	14.47	34.51
2016	1043451	202867	10201	0	59001	3957	0	29.08	38.79
2017	1061134	239435	10360	0	85571	5138	0	35.73	49.59
2018	1017357	272928	1267	0	100835	501	0	36.94	39.54

all of the Energy Performance Certificates registered with the Energy Performance of Buildings Registers for England and Wales since their introduction in 2008 (Department for Communities and Local Government 2017a). At the time this research was conducted, this ran to 15,623,536 certificates for the EPC-DOM dataset and 475,885 certificates for the EPC-NONDOM.<sup>1</sup> All UK buildings<sup>2</sup> are now required to have a valid EPC when they are built, sold or let, which must then be registered with the Energy Performance of Buildings Register of England and Wales. The compulsion to register an EPC certificate at the point of transaction was introduced in the Housing Act 2004, with the Act itself implementing an EU wide directive on energy performance data (DIRECTIVE 2002/91/EC) which also introduced the 'Home Information Pack' for all domestic property sales — the Coalition government later abolished the Home Information Pack. However, EPC regulations have been kept in place unchanged. It should be noted that the EPC data is not representative of the building stock of the UK with there being issues around multiple EPC's being issued for the same building, as well as many buildings simply not having met the statutory requirements for an EPC as they have remained in individual ownership since compulsory certification was introduced in 2008.

The EPC dataset contains a wealth of information on the buildings on which they have been conducted, most of which are naturally concerned with energy efficiency and waste. However, several other indicators may be of interest to housing researchers, including floor space (m<sup>2</sup>), the number of rooms and indicators for the quality and age of the building stock. Indeed, it is EPC data that is used to supply characteristic information in the calculation of the HPI for transactions in Ireland

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<sup>1</sup>Since the public release of this dataset, it has been possible to opt-out these datasets. An FOI request submitted as part of this research reveals that between August 2015 and October 2020, only 2,257 domestic and 1,773 non-domestic certificate applications have opted out of this data publication. The DCLG refuses to release a more detailed geographic breakdown of those removed from the EPC datasets out of disclosure concerns.

<sup>2</sup>Exemptions include: places of worship, temporary structures, stand-alone buildings of less than 50 m<sup>2</sup>, industrial buildings, buildings used less than four months of the year and listed buildings if complying with EPC directives would alter the character of the building (Department for Communities and Local Government 2017a)



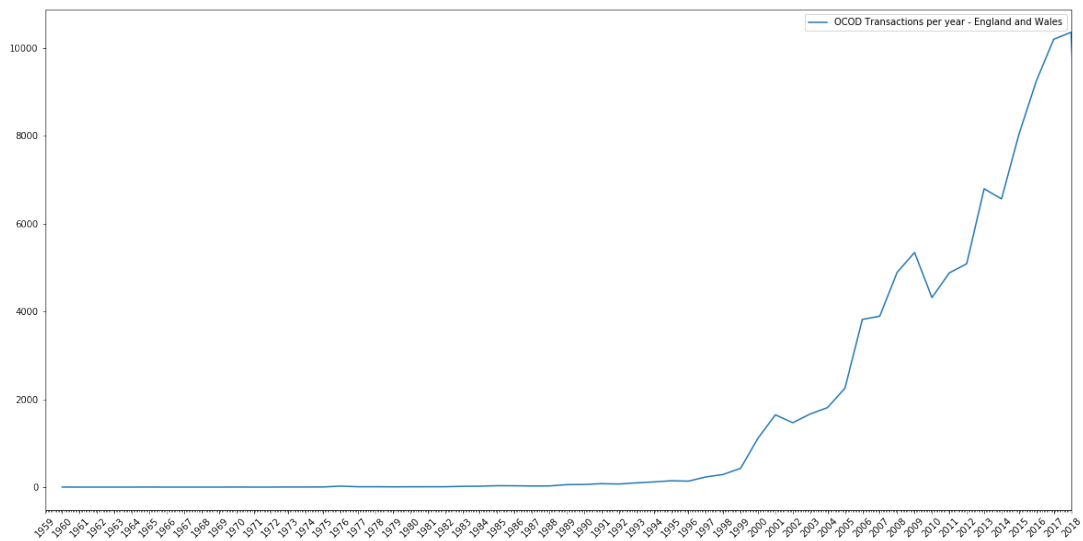
and Scotland, where such information is not collected by the Registers of Scotland and the Land and Property Service of Northern Ireland (Land Registry 2020d). Usefully, there is a clear distinction made between the domestic and commercial EPC which will be used to identify domestic houses which have been ‘enveloped’, moving them from the PPD to the OCOD and until now effectively ‘hiding’ them from view.

## **What Can Be Learned From the OCOD Data?**

The OCOD dataset itself contains a wealth of information on patterns of property ownership by non-UK registered companies. The following section examines what can be learnt from the OCOD data — as published by the LR — about the ownership of property in England and Wales by international companies. This section pays particular attention to the country where these companies are registered and the location of the property transacted.

The OCOD dataset runs from August 1959 to December 2018. However, few transactions registered as part of this data before 1990, with transactions by overseas companies only being reliably captured after the introduction of additional triggers for registration as part of the 2002 Land Registration Act. The lack of transactions before 2002 and the swift rise in transactions following the changes introduced by the Land Registration Act in the raw OCOD data published by the LR is visible in Figure 8.1. Indeed, of the 97,008 transactions in the OCOD dataset, only 6,156 are before 2001.

Figure 8.1: Transactions per Year OCOD



The country in which the company was located at the time of each transaction is listed in Figure 8.2. This figure shows the concentration of all transactions originating from companies registered in a small number of jurisdictions. Of these countries, the top four predominate with the British Virgin Isles [BVI], Jersey, Guernsey and the Isle of Man, being responsible for 68% of all overseas transactions. The top 20 countries listed in the OCOD account for 92% of all transactions listed in the OCOD. The OCOD data itself contains 180 countries of origin for companies that own property in England and Wales- this shows an extreme concentration of ownership in just a handful of jurisdictions.

Figure 8.2: Percent of OCOD transactions by Company Registration Location (Top 20)

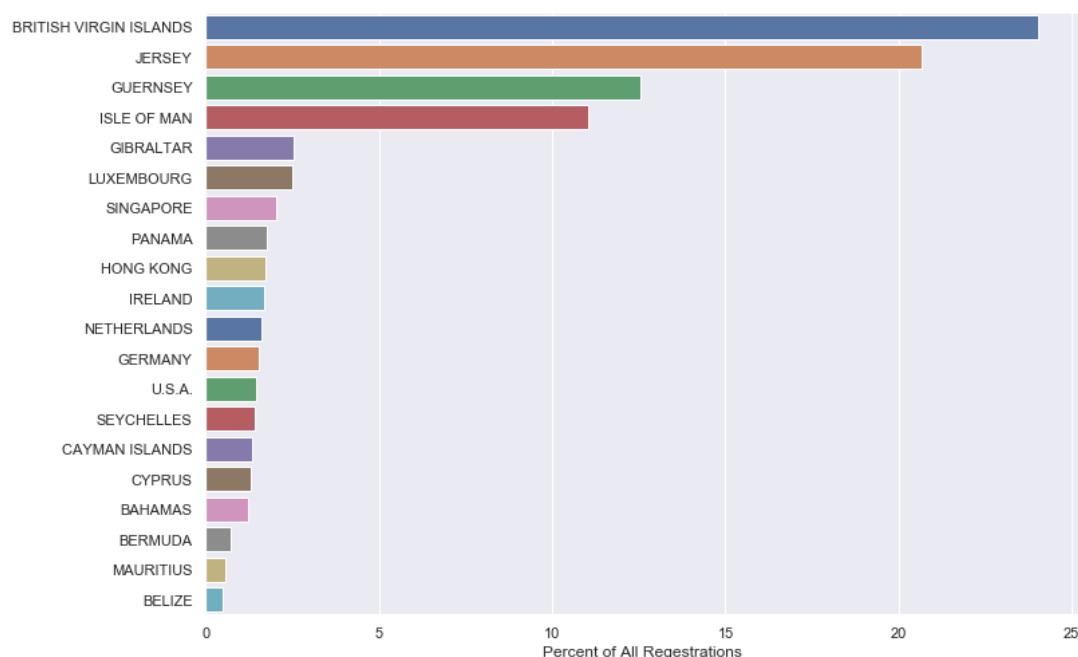
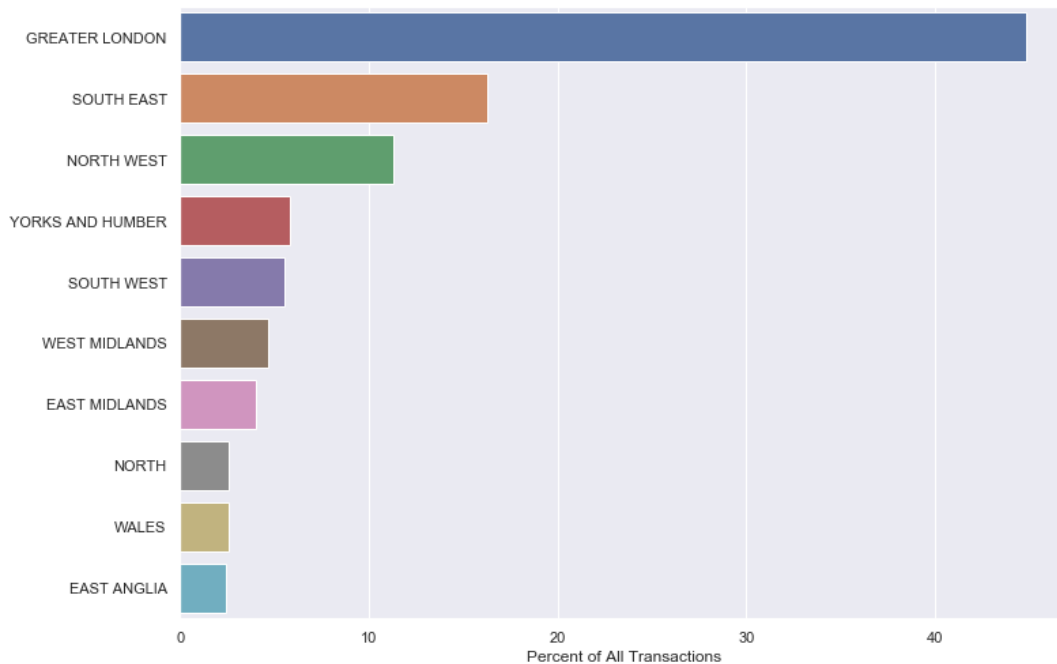


Table 8.3: Top 20 OCOD Transaction Locations by Corporate Tax Haven Index CTHI and Financial Secrecy Index FSI

Country	Number of Transactions	CTHI	FSI
BRITISH VIRGIN ISLANDS	23307	100	71
JERSEY	20057	98	66
GUERNSEY	12180	98	71
ISLE OF MAN	10713	100	65
GIBRALTAR	2464	66	69
LUXEMBOURG	2411	72	55
SINGAPORE	1997	81	65
PANAMA	1734	72	72
HONG KONG	1692	73	66
IRELAND	1647	76	48
NETHERLANDS	1551	78	67
GERMANY	1477	52	52
U.S.A.	1404	43	63
SEYCHELLES	1382	68	70
CAYMAN ISLANDS	1300	100	76
CYPRUS	1253	71	61
BAHAMAS	1192	100	75
BERMUDA	701	100	73
MAURITIUS	553	80	72

The countries listed in Figure 8.2 are particularly notable as many of them are widely considered as tax havens and hubs of financial secrecy. In particular, the top four overseas countries of the BVI, Jersey, Guernsey and the Isle of Man, are notable as being part of the Sovereign State of the United Kingdom, either as British Overseas Territories or Crown Dependencies. A status which, as a hangover of the structure of the British colonial empire, means that each, while nominally part of the British State and ultimately governed by Parliament, are largely self-governing and able to set their own fiscal and legal agenda (Foreign Affairs Select Committee 2019). The location of these jurisdictions within the auspices of the UK undoubtedly contributes to their dominance in the OCOD data. These jurisdictions are both historically favoured by firms working in the City of London in the design of tax avoidance schemes (See: Palan 2006) and themselves make up a significant portion of flows through global offshore tax havens — with BVI being the single largest contributor to the Tax Justice Networks Corporate Tax Haven Index Share percentage (7.29%). Table 8.3 provides a table of the top 20 countries listed in the OCOD dataset alongside the Tax Haven Index and Financial Secrecy Index created by the Tax Justice Network. In all cases, the scores derived by these countries is significantly higher than the UK's FSI score of 46 and CTHI score of 63, demonstrating the advantages which could be gained either in terms of financial secrecy or tax reduction through the use of structuring ownership through corporations located in these jurisdictions. Indeed, aside from the facilitation of legal avoidance, such tax havens are further facilitators of tax evasion and, in particular, be crucial components in the global facilitation of corruption and the laundering of criminal proceeds (Transparency International UK 2018; UK 2017).

Figure 8.3: Percent of OCOD Transactions by Region



A breakdown of the location of all transactions in the OCOD dataset is provided in Figure 8.3. The results of this breakdown show a similar concentration of transactions to Figure 8.2 with the vast majority of transactions being concentrated in only one category, in this case, Greater London, where overseas companies conduct 45% of all transactions. Again, the figure reflects the centrality of London to the UK economy, with the total worth of residential property in London now estimated to be worth £1.5 trillion pounds, making it twice as valuable as the nine next largest cities in the UK (Zoopla 2018).

The difference between the number of properties being transacted in different parts of England and Wales by overseas companies is illustrated in Figure 8.4. The figures in this graph demonstrate that outside of London, cities with dense urban areas, such as Manchester, Liverpool and Birmingham, are areas in which overseas companies are likely to own property.

Figure 8.4: Percent of OCOD Transactions by Districts Outside of London

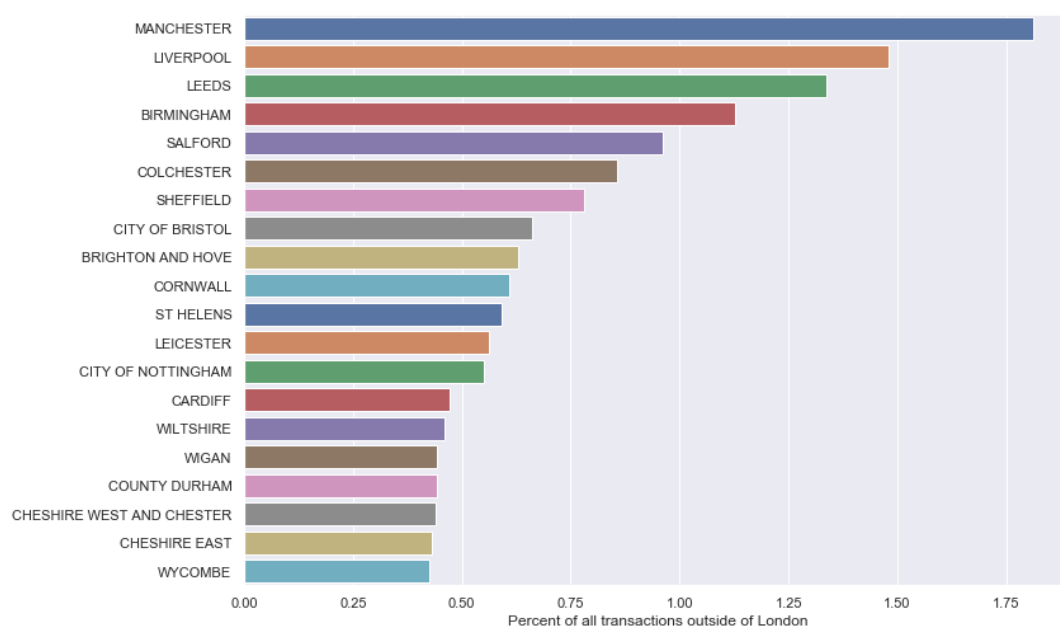
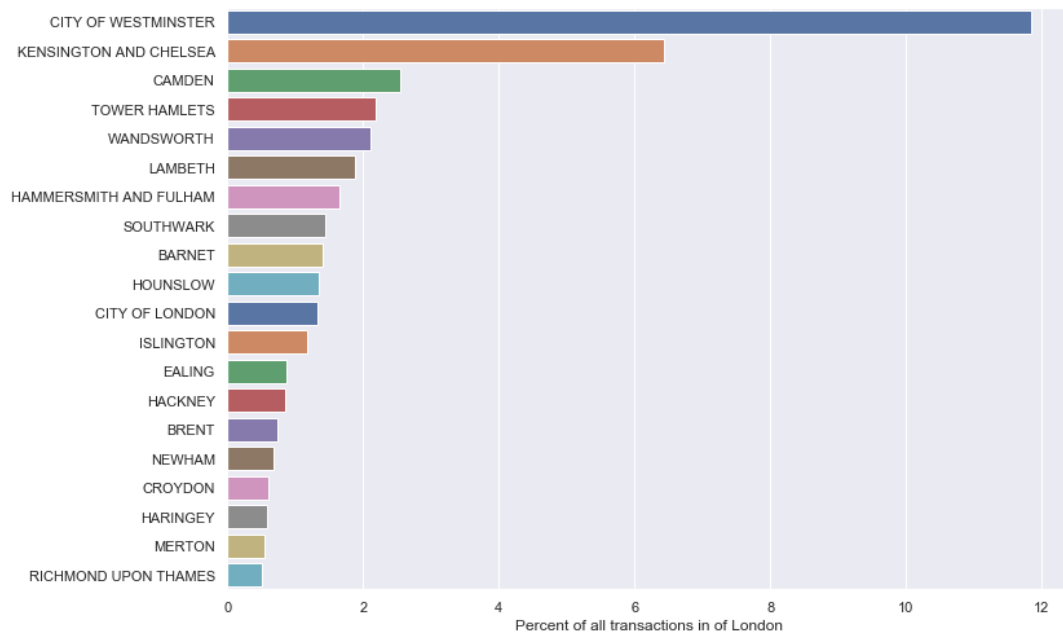


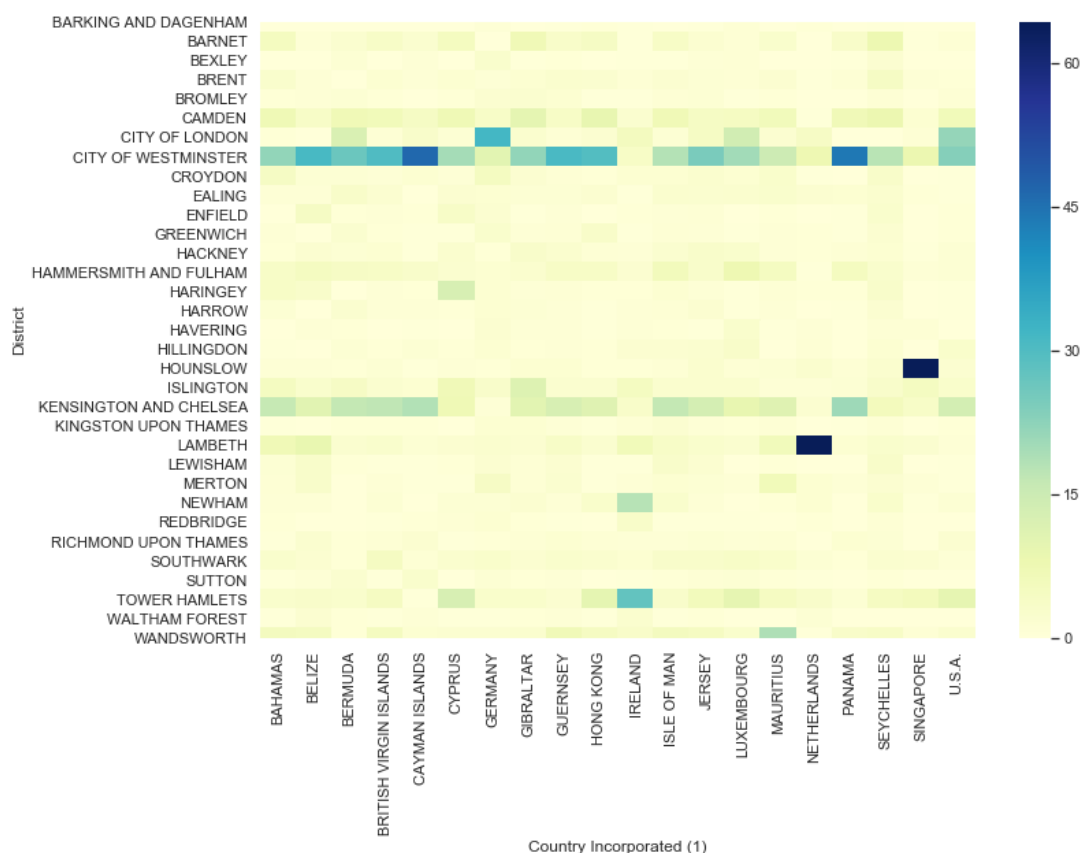
Figure 8.5 further shows the concentration of transactions inside London, breaking down transactions by Borough. This figure demonstrates the concentration of transactions within London 6 Boroughs having more transactions than Manchester-the area with the most transactions outside of London. Furthermore, this figure reveals that the majority concentration of transactions within London takes place in either Westminster or Kensington and Chelsea, the two areas with the highest average house price in London (and the UK).

Figure 8.5: Percent of OCOD Transactions by London Districts



Information about the location of transactions in England and Wales and the jurisdiction from which the purchase originates is brought together in the heat-map presented in Figure 8.6. The data presented in this graph demonstrates the extent to which transactions in the OCOD are concentrated in a small number of geographical areas in the UK, with transactions in these areas also originating from a small selection of offshore jurisdictions known for their financial secrecy and ability to shield companies and individuals from taxation.

Figure 8.6: Heatmap of Percent of OCOD Transactions by Country and London Borough



Notes: 1. The high number of properties in Hounslow owned by companies registered in Singapore are related to a single development (664 out of 671), 'Concorde Village' (brownfield land bought from Taylor Wimpy), where developers sought to sell many small individual plots to investors, though at the time of writing no new properties have been built at this site.

2. Similarly, the high number of properties in Lambeth registered to the Netherlands appears to be a scheme at the Park Plaza Westminster bridge where individual hotel rooms are registered as individual properties, accounting for 505 out of 571 such properties registered to companies in the Netherlands in the Borough.

## Bringing the Datasets Together

This section brings together the datasets discussed in the introduction to this Chapter to provide further original insight into the Overseas Company Dataset [OCOD]. The rest of this Chapter works with the data to derive insights that are not available from the data as it is released by the HM Land Registry [LR].



The following section is split into two halves, with the first section correcting for the quality of the data provided by the LR and the second merging the improved OCOD dataset with other data released by the LR and the Energy Performance Certificates [EPC]. In doing so, this section can significantly improve the quantity and quality of the information which can be derived from the OCOD dataset, to supplement the OCOD data with additional information from the EPC data — most significantly the classification of the use of the property — and to provide a point of comparison with the other land registration data produced by the LR. To do the work for these two sections, a varied set of computational methods, totalling over 3000 lines of code written in Python and R, was used.

### **Data Quality Issues**

As previously discussed, the quality of the data provided by the LR varies significantly — a result of quality assurance procedures applied to domestic property databases for their use of national statistical products. The following section seeks to correct the low quality of the data provided by the LR with their other datasets, which are not subject to these checks, specifically the OCOD, which is the focus of this Chapter, and the Company Ownership Dataset CCOD, as a point of comparison.

This section, therefore, details the procedures taken to improve the quality of this data and the resulting output. It starts by correcting the divergence in price information available between the leaked Private Eye data and the OCOD dataset. The expansion of transaction data ensures that each transaction represents a single property (in the same manner that the LR's domestic Price Paid Dataset is organized).

The following section details how the research presented here addressed these data quality issues, covering missing price information, grouping transactions, and assigning properties a unique identifier.

Table 8.4: Percentage of Price Information Missing per Year

YEAR	EYE	OCOD
1999	99.7	71.2
2000	53.8	76.4
2001	29.5	71.0
2002	27.6	74.8
2003	25.2	74.3
2004	25.7	73.4
2005	43.1	81.8
2006	35.8	71.8
2007	36.7	71.7
2008	26.7	75.1
2009	32.0	70.6
2010	26.9	72.8
2011	23.2	75.0
2012	50.2	84.8
2013	34.9	82.5
2014	26.5	74.1

As has been discussed (see Table 8.2), one of the most glaring differences between the OCOD data leaked to Private Eye [EYE] and the OCOD data later officially published by the LR is the availability of price information for each transaction. In the EYE dataset, price information is available for 65% of properties listed in the dataset, compared to 29% of transactions in the OCOD dataset. The distribution of the difference between these two datasets does not follow a clear pattern, with a breakdown being provided in Table 8.4, although the reporting of price in the OCOD data set noticeably improves in the years after which the EYE dataset is not available (see: Graph 8.7).

In inspecting the EYE data, it appears that some of the discrepancies between the two datasets are a column labelled 'Price (text infill)' in which price information is contained in a non-machine-readable format. The research presented here corrected and formatted as much of this price information as possible to account for these discrepancies. This included:

- Adding in VAT to entries in which a price was listed along with a note such as

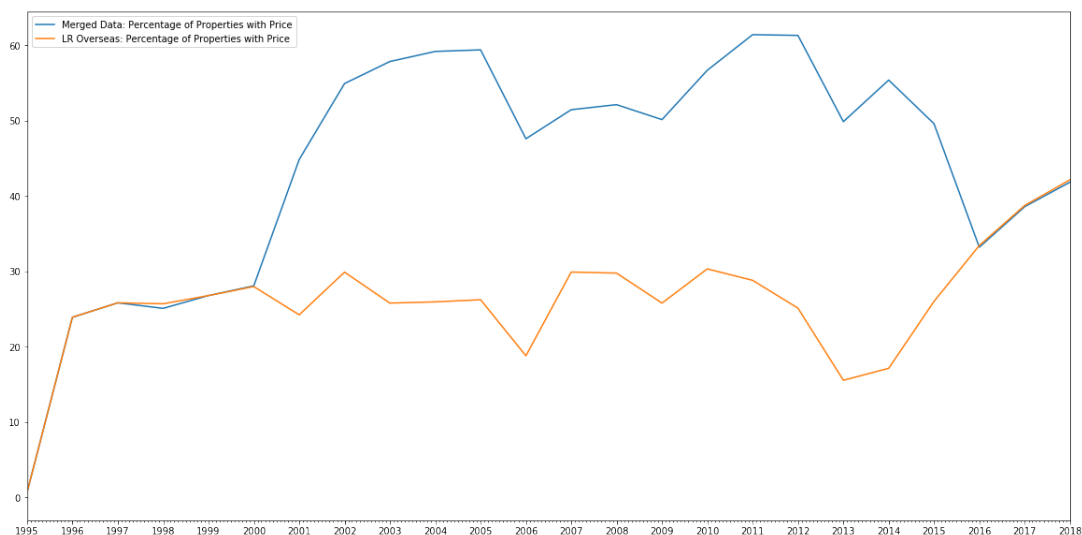
‘ + VAT’.

- Adding a median value when a range such as ‘between £500,0001 and £1,000,000’ was given.
- Assigning numbers to statements such as ‘not exceeding £1,000,000’, to which the figure mentioned would be assigned on the assumption that this would be closer to the actual price paid than an intermediate number.

In addition to coding functions to correct for the above frequent non-machine-readable entries, a further 92 figures were corrected by hand. I inspected the top 2000 transactions to ensure the validity of the very largest transactions in the OCOD dataset.

The corrected price information in the EYE dataset was then merged into the OCOD dataset, adding in price information only to transactions that did not previously contain price information. The results of which are presented in Figure 8.7, significantly increasing the price information available for transactions conducted by overseas companies.

Figure 8.7: Percentage of Price information added from Private Eye Dataset



A further data quality issue presented by the OCOD was the grouping together of transactions in singular rows. Finding data stored in this manner in the OCOD was a surprise as it contravenes the design of the system of land registration as a whole. At a technical level, in all previous iterations of the LR relational data schemas, the base unit is the 'atom' of the title — as is examined in detail in Chapter 4. It is likely, along with the lack of price information, to be a result of both the purpose of the information infrastructure of land registration — which is to work as machinery of conveyancing — and the lack of quality assurance for the OCOD and CCOD data as they are not part of a wider set of statistical standards, as is the PPD.

Of the transactions listed together under the same row, 10,632 were grouped with the term 'and'. Such cases were split into two transactions, one for each part of the address. A further problem was posed by address ranges in the data, such as the 10,603, linked together by 'to' or '-', which was then expanded to cover the range of addresses between these two numbers. When there was a specification such as 2,438, which had the additional label of 'odd' or 'even', the function used to split each transaction accounted for this, adding only the numbers in the specified range that were odd or even.

In total, this resulted in the number of transactions in the OCOD dataset being expanded from the 97,008 to 239,492 rows, an increase of 146%. As Table 8.5 shows, the increased number of transactions has dramatically added to the number of properties being transacted from companies located in tax havens. However, the overall distribution of these locations has not significantly altered, with the BVI, Jersey, Guernsey and Isle of Man still accounting for the majority of transactions.

The extent of the expansion of the OCOD dataset following the procedures listed is a significant finding. It reveals that the scope of property market transaction conducted by companies located overseas is over twice the size previously thought. All of the

Table 8.5: Increase in OCOD Transactions by Country

Country Incorporated	OCOD	OCOD Extended	Percentage Increase
BRITISH VIRGIN ISLANDS	23307.0	51726.0	121
JERSEY	20057.0	57349.0	185
GUERNSEY	12180.0	42002.0	244
ISLE OF MAN	10713.0	23861.0	122
GIBRALTAR	2464.0	7005.0	184
LUXEMBOURG	2411.0	4375.0	81
SINGAPORE	1997.0	4647.0	132
PANAMA	1734.0	3676.0	111
HONG KONG	1692.0	3826.0	126
IRELAND	1647.0	4240.0	157
NETHERLANDS	1551.0	2620.0	68
GERMANY	1477.0	2541.0	72
U.S.A.	1404.0	2583.0	83
SEYCHELLES	1382.0	2880.0	108
CAYMAN ISLANDS	1300.0	2549.0	96
CYPRUS	1253.0	2712.0	116
BAHAMAS	1192.0	2398.0	101
BERMUDA	701.0	1083.0	54
MAURITIUS	553.0	1339.0	142
BELIZE	496.0	931.0	87

Table 8.6: Column 'OCOD' is the number of transactions as published in OCOD dataset by the LR grouped by the country in which the company involved in each transaction was located. 'OCOD Extended' is the same grouping but applied after expansions listed above had been applied.

analysis, which follows, uses this expanded OCOD dataset, and therefore a larger and more accurate measure of the scale of properties transacted by overseas companies than has been used in other research.

## **Merging Datasets**

The previous section improved the quality of the OCOD data itself, as far as was possible, through working only with the OCOD data itself; this section further enhances the scope of the OCOD data by adding in additional data points. It does so through the matching of Energy Performance Certificates to properties listed in the OCOD dataset, which provides two key data points for the analysis in the later sections. The identification of property use as either domestic or commercial, and the addition of property feature information such as the number of rooms and total floor space.

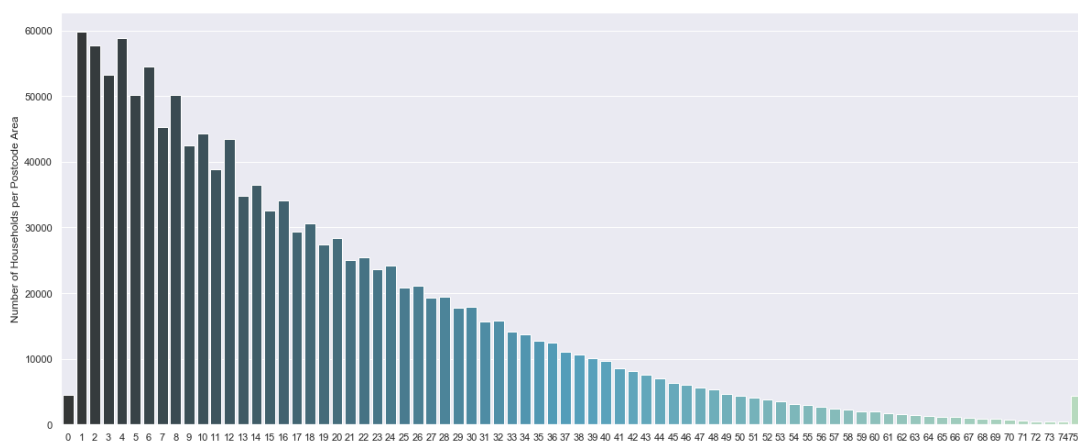
This section works through a number of issues faced in the merger of these two datasets. Firstly, the lack of unique identifiers common to both the LR and EPC data. Secondly, data cleaning and expansion of data points, similar to those covered in the last section, are applied to the EPC data. Thirdly, the process of merging the OCOD and EPC data itself and comparing similar mergers between other LR datasets. Finally, using the mergers between the other LR datasets and the EPC data further to improve the quality of results for the OCOD dataset.

All publicly published Land Registry data sets are affected by the lack of a unique location identifier attached to each property. As has been previously discussed, such information is held by the Land Registry (to at least the best available commercial standard) in the Codepoint UPRN form– a UK address standard managed and maintained by the Ordnance Survey. However, CodePoint has published only a commercial product priced beyond the reach of much academic research. To address this issue, this research develops a system of classifying properties based on

postcodes and house numbers in a manner that approximates a UPRN.

A postcode is assigned to all residential and commercial locations in the UK to which mail can be sent. The postcode system is regularly updated by the Royal Mail and responds to the creation of new addresses and the removal of out-of-date information regularly. The structure of the postcode itself is hierarchical with each additional digit or character of the seven-character postcode<sup>3</sup> adding an additional layer of geographical granularity. As a result, the average number of households in an area represented by the first two characters of a postcode (such as BB) is 144,234; expanding this to one-digit (BB1) results in a drop to 21,088 with an additional digit (BB10) reduces this to 10,172. The remaining combination of the last three characters and digits rapidly reduces these areas from 2833 to 228 and 17. The distribution of the number of households per each full postcode area is shown in Figure 8.8, which makes use of the same 2011 Census counts provided by the ONS (ONS 2011).

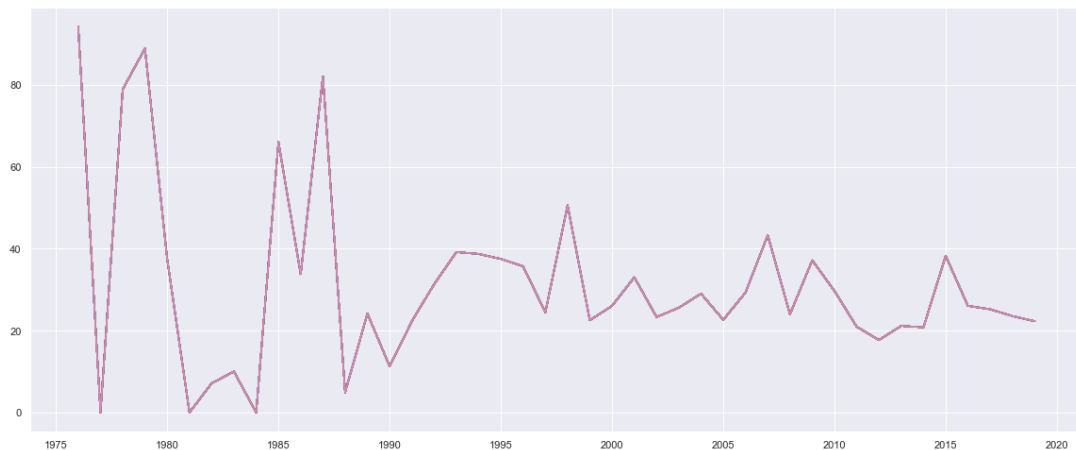
Figure 8.8: Number of households per full postcode area - Census 2011



explicitly avoiding overlapping address numbers within the same postcode area (Raper, Rhind, and Shepherd 1992). The system is further designed so that full postcodes with significant numbers of address being applied to single large structures, such as apartment blocks, rather than larger geographical areas.

Of the expanded addresses, however, not all transactions were suitable for this system, with 66,314 postcodes not matched. As Figure 8.9 shows, compliance with providing a postcode in the non-expanded OCOD dataset is highly variable before the move towards e-conveyancing with the introduction of the 2002 Act. However, after 2002 this settled into a stable pattern of between 20% - 40% of transactions being listed without a postcode.<sup>4</sup>

Figure 8.9: Percent of Expanded OCOD Transactions with Missing Postcodes



Before matching with the EPC datasets, similar steps were taken in the previous section to clean the data to ensure that each row covered a single property address. This process included expanding the address joined together and certificates that included more than one numbered property.

In the domestic EPC dataset, this resulted in an expansion of commercial certificates

<sup>4</sup>In part this may be attributed to a lack of eligible postcode for the area in question; with a simple frequency count of common terms such as 'Land' and 'Acre' revealing 3562 transactions with description, with a further 707 for industrial terms and 2052 for parking and garage spaces.



from 447,949 properties to 575,086, an expansion of 28%, and expansion from 15,642,509 to 16,007,074 for domestic certificates, an expansion of only 2.3%. In regards to postcode information, the data quality of the EPC data was far higher than that of the LR, with no commercial properties missing postcode information. For the certificates expanded to cover only a single address, a unique postcode identifier was created, in the same manner, used on the OCOD dataset to allow for OCOD property transactions and EPC certifications to be matched between the two datasets.

The unique postcode identifiers added to the OCOD transactions and the EPC data certificates were used to create matches between the two datasets. The matching between these datasets required significant computing power with this research making use of the LSE's high powered computing environment Fabian to run these merges and use the R data.table package for its speed and memory efficiency. The computations took over 120G of RAM memory and over 9 hours of CPU time to run.

Between these datasets, it was possible to match 57.7% of OCOD transactions with a suitable postcode identifier, of which 46.4 % were identified as domestic. In the course of matching domestic and commercial EPC certificates, there was an overlap of 5,271 properties, which was resolved by assigning only the most recent certification to each transaction, ensuring that no property was counted twice or was classed against an outdated certificate.

This match rate compared favourably to other matches between LR and EPC data, with a postcode match also being applied to both the PPD and CCOD datasets. The PPD dataset, as should be expected, showed the highest match rate to domestic properties and the CCOD data compared less favourably with only 35% of properties being identified as either commercial or domestic dwellings. Notably, there are far more domestic properties identified in the CCOD than those for

Table 8.7: Merging Results

Datasets	Match Result	%
PPD - EPC-DOM	6,969,290	78
CCOD - EPC-DOM	965,973	28
CCOD - EPC-NONDOM	243,917	7
OCOD - EPC-DOM	80,425	46
OCOD - EPC-NONDOM	19,508	11

commercial use. This result is likely to reflect both the scale of domestic properties owned by companies but rented out to households and the differing address structure of many commercial properties (i.e., unit numbers). These match rates also compare favourably to those used to match EPC and Registers of Scotland housing data in the calculation of the HPI. The ONS report an average match rate of 70% (Land Registry 2020d). Indeed, the match rate achieved for the PPD and CCOD dataset in this comparison could likely be improved with further data processing, matching the EPC data using the transaction and certificate expansion and one postcode match. In contrast, the OCOD data ran through three iterations of possible postcode address digit combinations to ensure the best possible match rate.

The matches between the CCOD, PPD and EPC domestic and commercial certificates were further used to enhance the quality of property information in the OCOD dataset by using postcode information they contained. This was done by counting the number of transactions, which had been matched to EPC certificates, at a full postcode level, i.e. BB10 2RE. This returned a dataset that counted the number of transactions, either identified as domestic or commercial, from both the PPD and CCOD datasets at a full postcode level. The symmetric difference of the number of transactions in each full postcode area was then taken for each dataset. This resulted in a list of postcodes areas that contained only domestic properties or business premises, as identified by the EPC certification. Domestic certificate matches to the CCOD were not used in this process, as many of these properties are domestic rental properties that are owned through UK based companies. The matching process thus

made use of LR's separation between ownership types to ensure that the full postcodes identified by this process were either full domestic or commercial, with no possibility of mixed-use areas being entangled in this matching process.

The dataset made of postcode areas, in which only properties listed as domestic or commercial, was used to identify the domestic or commercial properties that had not been directly matched to the EPC. This process identified properties as domestic or commercial based upon the EPC certificates matched to those in the same full postcode area and excluded areas with an overlap between domestic and commercial building use. This resulted in an increased match rate from 57.7% to 94.7%, with 74.1% being identified as domestic properties and 20.5% as commercial.

The above matching results apply only to transactions for which there was a suitable postcode identifier. Of the transactions in the OCOD dataset, 23,550 or 24.2% did not have a suitable postcode from which they could be matched with the EPC dataset. When added back into the expanded and matched OCOD dataset, this brings the match rate down to 65.2%. Of those without a postcode, 65% were identified as transactions relating to land via descriptions provided in lieu of an address through terms such as 'Land' or 'Plot'. These transactions were then classified in the final dataset as 'land'.

## **Locating Elite Housing**

This section begins the analysis of the results of the matching process detailed in the last section. The initial analysis of this data focuses on two fundamental features added by the matching process- the use of the property and their location. This section, therefore, starts by analysing the breakdown in the use type of properties owned by overseas companies. It then moves on to examine the location of these properties. Starting first with domestic properties at a national level and then breaking these results down further by examining the specific micro-geographies of

ownership in London.

The most striking results of the process of the matching process are shown in Figure 8.101.10 which shows the breakdown between the use classification of properties. Showing the extent to which the majority of transactions in the OCOD dataset are for domestic properties. Those classified as commercial made up less than 20% of the OCOD dataset. This finding confirms the suspicions of other research and media reports in which it was believed that many transactions conducted by companies located overseas were being used as a means to own domestic homes in a 'tax-efficient manner' (The Guardian 2016; UK 2017).

Figure 8.10: Final Percent of OCOD Transactions Classified by Use

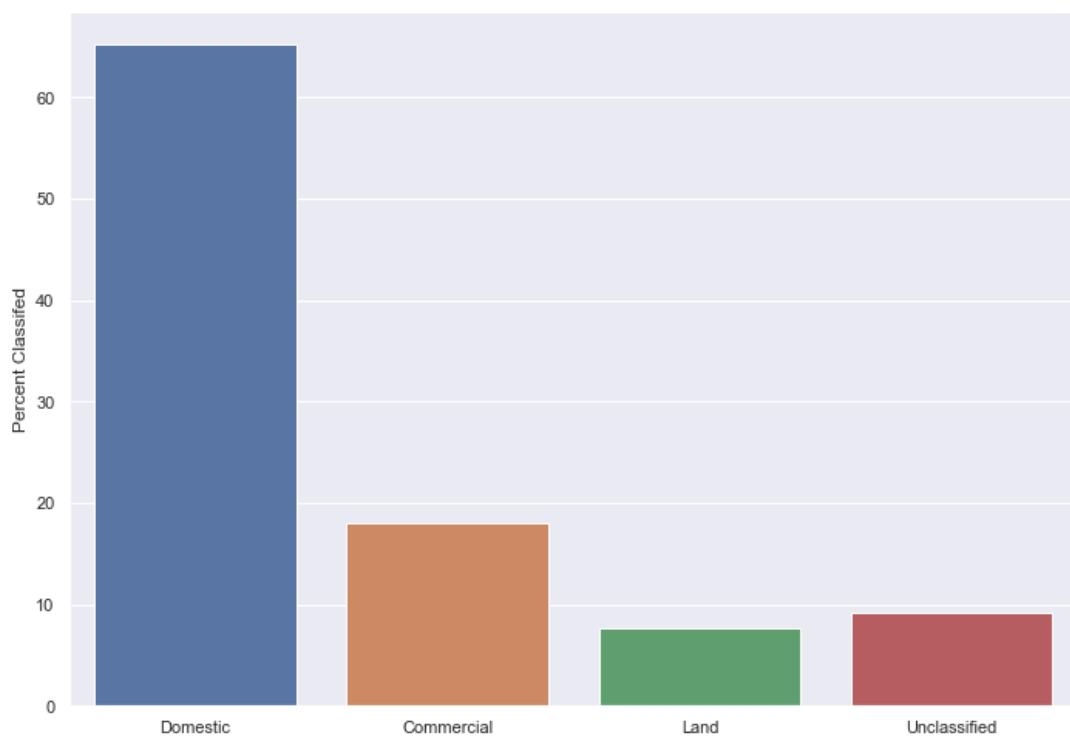


Figure 8.11: OCOD Transactions Classified by Use by Year - Percent

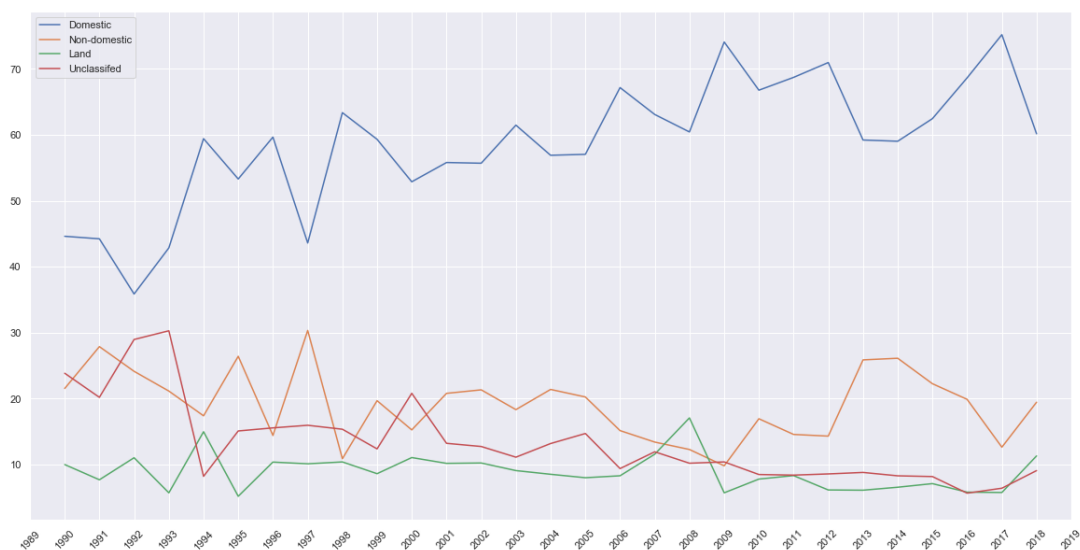
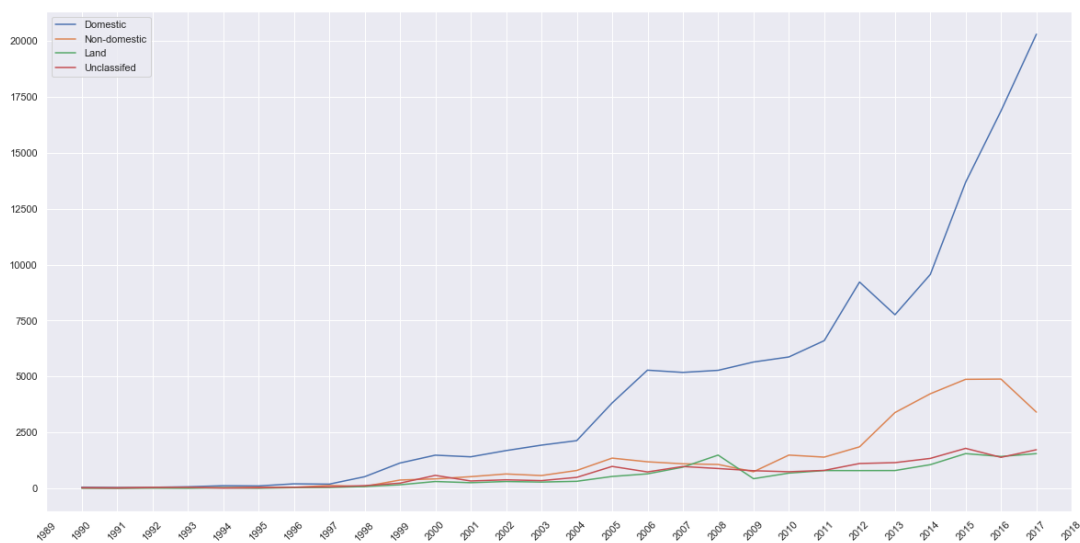


Figure 8.12: OCOD Transactions Classified by Use by Year - Raw



Figures 8.11 and 8.12 provide a further breakdown for the classification of transactions by year. The growth in the use of offshore shell companies can be seen in the percentage increase in the transactions, which can be classified as domestic within the OCOD dataset, with this Figure rising from 40% of registered transactions in 1990 (prior to the extension of compulsory registration) to a peak of 75% in 2017.

In representing these figures as a percentage, however, this Figure negates the overall growth of overseas companies in property transactions over this period. Figure 8.12 provides an alternative perspective, instead of plotting the number of OCOD transactions per year by their use classification, which shows steady growth in the use of such shell companies between the mid-1990s through the 2000s and then an almost exponential growth in their use from 2010 onward.

To break down the results from the matching process, further Figures 8.13 and 8.14 rerun part of the analysis of the OCOD dataset (as provided by the LR) in the previous section with the classifications added by the merger. In breaking down transaction types by region, Figure 8.13 shows that in all regions of England and Wales that the majority of transactions conducted by overseas companies were for domestic property. The highest percentage of domestic property transactions was in the Greater London area. Correspondingly, the percentage share of commercial transactions for Greater London was lower than for all other areas of the country. Also of interest is the greater proportion of land owned by overseas companies in more rural areas of the country, and there is a greater proportion of unclassified transactions in more rural areas — suggesting that many of these matches could not be made due to issues with rural property naming, i.e. without house numbers. Focusing just on domestic property transactions, Figure 8.14 provides a heatmap of the two-way cross-tabulation of regions against the top 20 countries in which the company involved in the transactions was located. The findings further those of the initial analysis of the OCOD data, furthering its conclusions. Demonstrating for the first time that the overwhelming majority of transactions in the OCOD dataset were for domestic properties and conducted by companies in tax haven jurisdictions.

Figure 8.13: OCOD Transactions by Use by Region - Percent

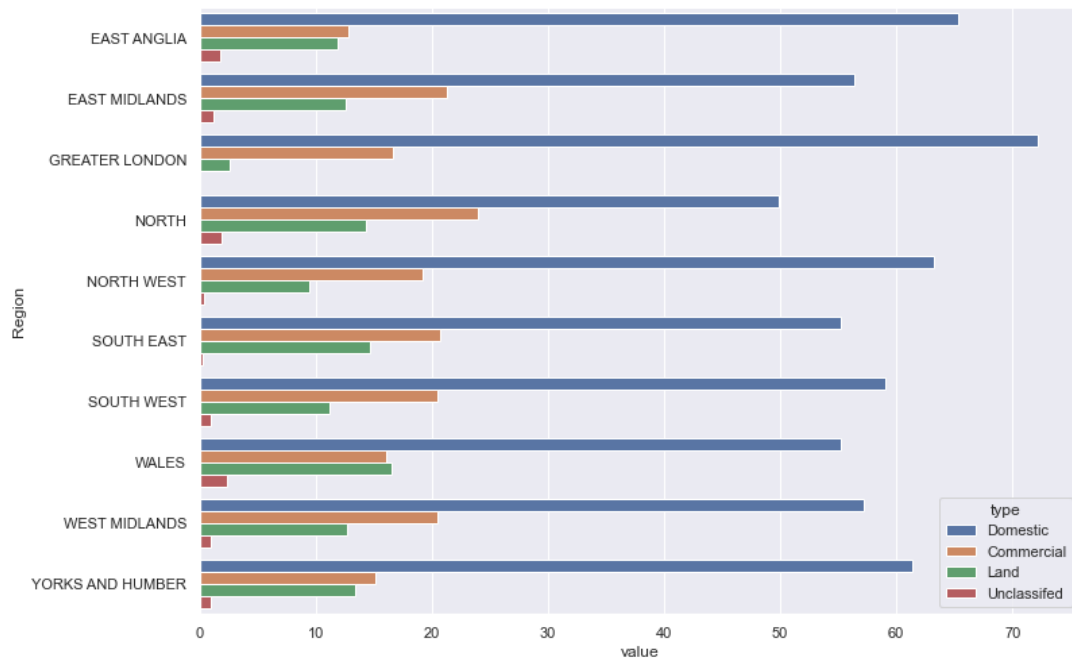
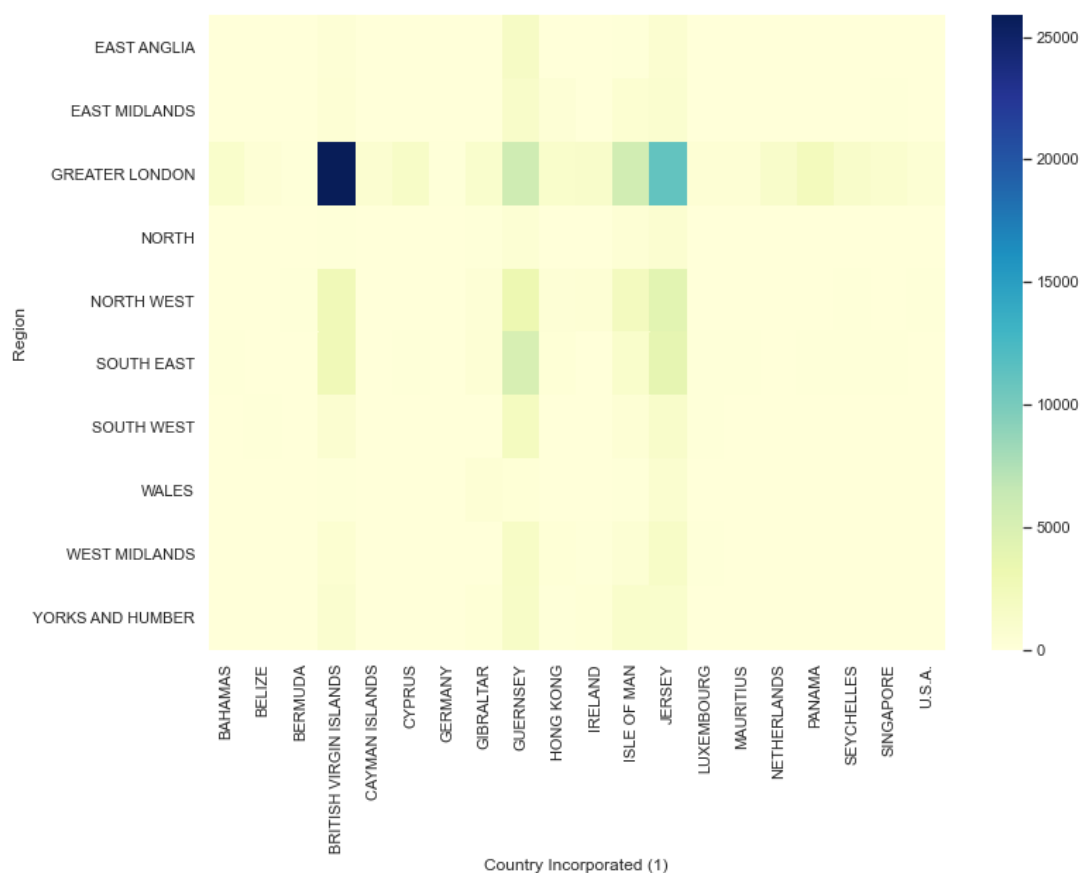


Figure 8.14: OCOD Domestic Transactions by Region and Country of Incorporation



As discussed in the preceding Chapters, the housing patterns of elites in the UK are concentrated in specific micro-geographies of distinction. To represent the geographical concentration of the elite properties of the OCOD dataset, the Lower Super Output Area [LSOA] statistical units were chosen as the most appropriate form of classifying the geography of transactions. LSOA units are developed and maintained by the ONS and widely used across UK-based social science research. They are generated from a mix of census data, postcode allocation and administrative and geographical boundaries. As the ONS themselves explain:

*“2001 Census OAs were built from clusters of adjacent unit postcodes, but as they reflected the characteristics of the actual census data, they could not be*



*generated until after data processing. They were designed to have similar population sizes and be as socially homogenous as possible based on the tenure of household and dwelling type (homogeneity was not used as a factor in Scotland). Urban/rural mixes were avoided where possible; OAs preferably consisted entirely of urban postcodes or entirely of rural postcodes. They had approximately regular shapes and tended to be constrained by obvious boundaries such as major roads.” (ONS 2019)*

The research presented here uses the updated 2011 boundaries at the level of LSOA in which Output Areas are merged to cover between 1000 to 3000 individuals and 400 to 1200 households to ensure that data released at this level is not identifiable. This site, in conjunction with the method of boundary generation, can be seen as capturing ‘neighborhoods’ (Webber and Burrows 2018).

When classified by LSOA, two trends are evident in the location of domestic properties within the OCOD; there are widespread transactions across the UK across the dataset as a whole, but with the majority of properties concentrated in a small area of Central London. Firstly, of the 34,753 LSOA in England and Wales in which transactions were conducted in the PPD,<sup>5</sup> 10,960 had transaction added in from the matched OCOD dataset — representing 31.5% of LSOA in England and Wales. This Figure demonstrates a widespread of transactions across the UK, thus showing that offshore companies’ use for the ownership of domestic property is not limited to Greater London or prime city-centre locations in other parts of the country. It furthermore poses a challenge to the production of housing market statistics in which domestic transactions from the OCOD are not accounted for. This Figure denotes that in 31.5% of LSOA across the UK, there are property transactions that have not been counted. However, when limiting to LSOA in which there had been more than ten transactions over all years in the OCOD dataset, the spread of LSOA

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<sup>5</sup>A measure intended to excluded LSOA in which property has not been traded. For example, areas under sole ownership or regions in which the administrative reach of the census for England and Wales and the statutory remit of the LR do not overlap.

decreases significantly with only 2023 out 34,753 or 5.8% of LSOA areas. The threshold was chosen to show that while there is a broad geographical spread of transactions, the majority were located in a small selection of LSOA's.

The domestic transactions identified in the OCOD dataset were then added back into the PPD transaction data to 'reveal' the range of domestic property transactions that had been previously concealed through the use of offshore shell companies — and were thus missing from all housing market statistics, which relied on the PPD. As an overall percentage of domestic property transactions, those hidden in the OCOD data represent a very small proportion of transactions representing only 0.55 % of the combined OCOD-PPD domestic transaction dataset. However, despite making up a very small proportion of the number of transactions, they are significant both in the monetary value they represent and their geographical concentration. The analysis in this section focuses on the location of these properties, and the following section addressing the value and price of these properties.

To further illustrate the concentration of transactions and the extent to which this is an issue of the measurement of the housing market, the number of domestic transactions in the OCOD were compared to those of the PPD at a LSOA level. The results of which are illustrated in Table 8.8. Of 18 LSOA shows in Table 8.8 14 are located in Central London. This predominance highlights how enveloped transactions are concentrated at a micro-level and a macro level in Greater London.

To highlight both the spread and concentration of domestic OCOD transactions in London, Figures 8.15, 8.16 and 8.17. These first two figures map the absolute number of transactions for domestic properties in OCOD for each LSOA. The figures show a broad spread of OCOD transactions across London and numbers rising towards the centre of the city. However, the distribution of transactions is not uniform with their specific concentrations of OCOD transaction in a select number of LSOAs. Some

areas stand in contrast to the specificity of the micro-geographies of elites housing; for example, areas of east London near Canary Wharf see over 40% of the property market actively being funnelled through overseas companies neighbouring LSOA see little to no transactions in the OCOD.

Table 8.8: LSOA with more domestic property transactions in the OCOD than PPD data - Post 2008

LSOA	LSOA	PPD Transaction Count	PPD - OCOD Domestic Transaction Count	Difference
0	Lambeth 036A	548	1946	1398
1	Manchester 059D	780	1610	830
2	Westminster 018D	666	1421	755
3	Southwark 009F	475	1217	742
4	Westminster 019C	389	1123	734
6	Westminster 011E	452	1105	653
8	Kensington and Chelsea 012A	446	1015	569
9	Westminster 019E	367	835	468
11	Leeds 064E	284	742	458
12	Kensington and Chelsea 012E	294	744	450
18	Westminster 019F	242	642	400
19	Kensington and Chelsea 018D	393	793	400
20	St. Helens 004F	170	560	390
35	Westminster 019B	234	503	269
54	Harrow 012E	161	372	211
57	Tower Hamlets 019D	167	370	203
90	Redbridge 032D	138	294	156
178	Kensington and Chelsea 014B	103	206	103

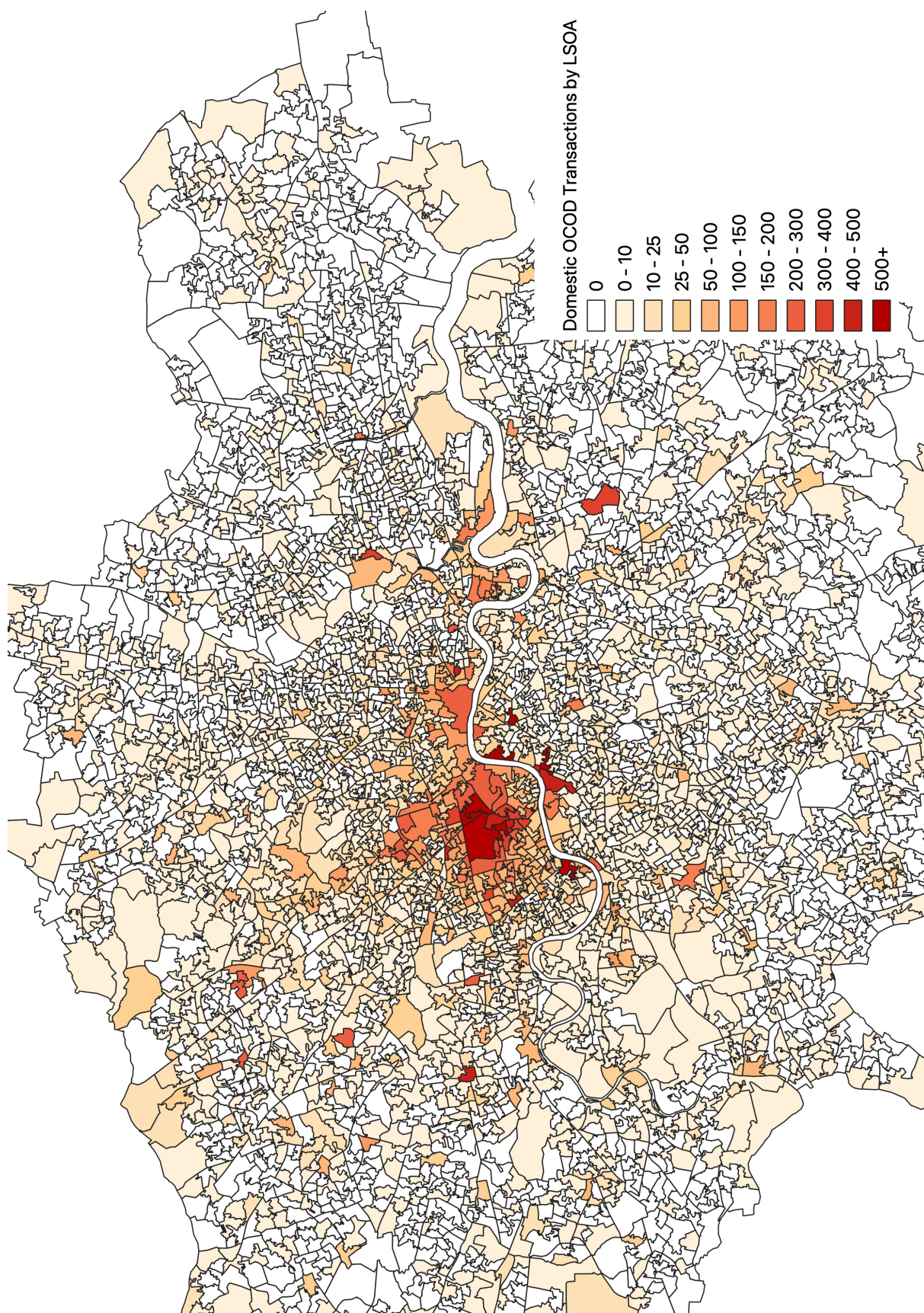


Figure 8.15: Increase in transactions by LSOA - London



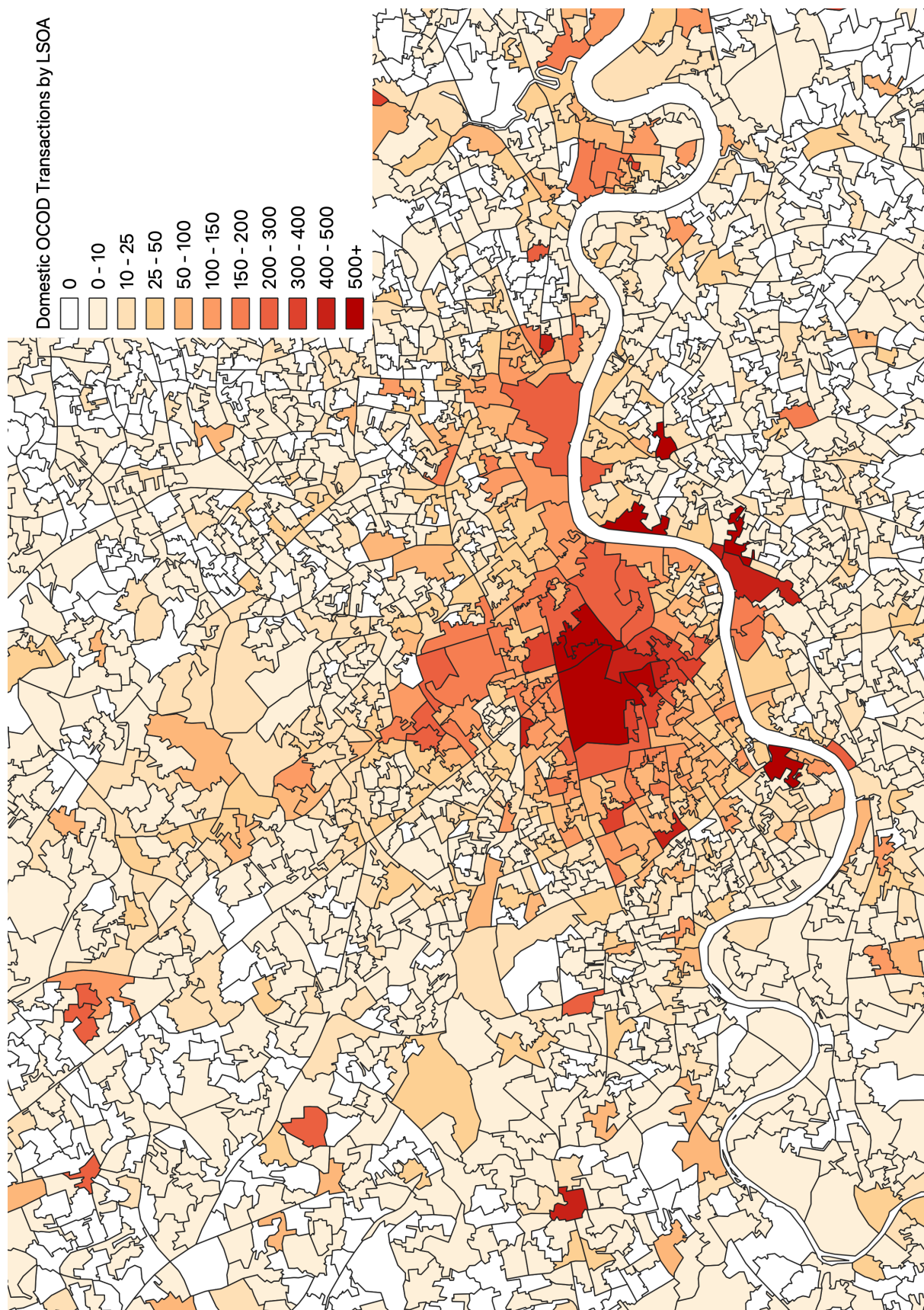


Figure 8.16: Increase in transactions by LSOA - Central London

## **The Value of Elite Housing**

The number of transactions concealed by the use of enveloped dwellings is a telling finding for the extent to which a specific section of the UK housing market has been hidden from statistical view. This research is interested in how this affects our understanding of the number of transactions that have been 'hidden' from the property market and the specificities of this segment of the housing market. The following section, therefore, examines the price attributes attached to the joined OCOD and PPD datasets. Firstly, I will discuss the price data in the OCOD dataset and the methodological steps taken to correct this data for the following analysis. The second section then uses this data to analyse how this price data affects the statistical picture of the housing market discussed in Chapter 7. In this section, there is a particular focus on how the joined OCOD - PPD data affects top percentile banding and our understanding of the very top of the housing market in the UK. I will then revisit the housing market Gini discussed in Chapter 7 to place the findings of this Chapter within the wider context of inequality in the UK.

### **Correcting Price Information**

It was discussed in the preceding sections that one of the limitations of the OCOD data is the extent to which price information has not been recorded either in a machine-readable manner or at all. As the previous section on correcting data issues has shown, the availability of price information in data published by the LR has improved in recent years. This research has further improved upon this by utilising the additional price information made available by the leaked Private Eye dataset. However, even with these improvements, 41% of domestic OCOD properties identified as domestic dwellings are left without price information. In the PPD dataset, by comparison, price information is available for all transactions. When seeking to 'add back in' the residential transactions contained within the OCOD

dataset, this presents a significant challenge. As the resulting merger of the OCOD and PPD dataset leaves only 0.22% of transactions without price information, the 59% of domestic OCOD transactions with price information account for a disproportionately large 3.09% of the value of transactions in the joined PPD-OCOD data.

Furthermore, the disproportionate value of properties added in from the OCOD data would suggest these transactions are concentrated in the top decile bands. When adjusted according to UK wide HPI, the transactions from the OCOD dataset accounted for 10% of the top 1% of all domestic property market transactions. This proportion then rises further towards the top of the distribution, with OCOD transactions accounting for 28% of the top 0.1%, and 38.5% of the top 0.01% of transactions.

Given the disproportionate value represented by the domestic OCOD transactions, it was important to estimate the value of the remaining 0.22% of transactions for which there was no price information. The first advantage of working with this data is that the joined OCOD - PPD dataset provided several variables which were used for estimating price information. These were; the date of the transaction, the price itself, the size of the property (taken from the match EPC data), and the location of the property. Furthermore, this information was available for the vast majority of transactions and could therefore be used to better estimate the value of transactions that were missing price information.

However, applying this information to estimate the true transaction price for each property presented a number of unusual challenges. Firstly, that the PPD dataset, as has been discussed previously, goes through a process of quality assurance and auditing to ensure that each transaction fits the definition of 'full market value'. The OCOD, by comparison, is not filtered through the LR's 'statistical superstructure'. As a result, some transactions are clearly not at 'full market value'; for example, there



were 150 properties that were transacted for less than £150. There proved to be no other way of assessing if the remaining prices attached to each transaction represent a price that would have been paid on the open market, with it being conceivable that the transfer of some properties may have been discounted or inflated as part of 'tax management' strategies. Secondly, the properties transacted in the OCOD are in many cases distinct from those of the rest of the property market. The distribution of properties represented is skewed towards the long tail of the housing market. The prices that are in the OCOD were abnormally distributed, both when joined with the PPD dataset and when considered in isolation. Thirdly, there may be either a price discount or premium associated with properties held within enveloped structures. And, as a result, this could undermine attempts to accurately predict the prices of these properties.

In light of these limitations, the applicability of statistical techniques to accurately estimate the price of the information missing properties was brought into question. In particular, early attempts at using hedonic methods, such as those used to calculate the HPI, were found to be highly unsuitable with the extremely non-parametric nature of the data in question resulting in poor quality results. Indeed, in the preliminary testing of such models, it was found that many predictions, which drew on all of the information available in the joint PPD-OCOD dataset, would have exceeded the most expensive domestic property transactions, as reported in the national press.<sup>6</sup> Such predictions may not have been inaccurate, as it is possible that transactions without prices in the OCOD may have sold for record sums. As, while such estimations may have provided the most accurate approximation available for these transactions, the claims these results would have led to would not be verifiable. Consequently, it was decided that these claims given their exceptional nature, were not the focus of the research presented here. The

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<sup>6</sup>Most recently reported to be Mayfair House, bought by Phones4U founder John Caudwell for £87 million (Sampson 2020)

inclusion of such extreme figures would potentially undermine results and cloud other potential findings for bringing these datasets together.

To address these challenges, the following price estimation models were specifically designed to *underestimate* the price of properties for which this information was missing. The estimates were made by deliberately airing on the side of caution. Therefore, the following results are likely to be far below the actual price paid for these properties. In light of the lack of any ability to accurately confirm transaction prices or gain any further insight into the distribution of this subsection of transactions, it was decided that an explicit underestimation was the best way to proceed with the analysis.

To accommodate this, the estimation of prices was split into two formulas detailed below. Secondly, a further set of assumptions capping each variable and the resulting price were applied. The first formula was used for properties for which floor space information was provided by the matched EPC data and the second for which this information was not available. To fit with micro-geographies identified by analysing the geographical location transactions in the section above, the method of price estimation used below leveraged the analytic utility of LSOA.

The below equation was thus applied to each LSOA in turn. MP stands for the HPI adjusted price divided by TOTAL\_FLOOR\_AREA variable, thus providing a price for each square meter of habitable housing. It is from these values that the geometric mean is then calculated. To estimate transactions with missing prices, the geometric mean of the cost of each squared meter of habitable housing in that LSOA was then multiplied by the size of the property with the missing price using the same TOTAL\_FLOOR\_AREA variable. This price was then adjusted to the HPI to reflect changes in the overall housing market when the transaction with the estimated price took place.

$$\left( \left( \prod_{i=MP}^n x_i \right)^{\frac{1}{n}} \times M^2 \right) \times \left( \frac{HPI}{100} \right) \quad (8.1)$$

For those transactions where the TOTAL\_FLOOR\_AREA was unavailable, the below equation was applied instead for each LSOA. In this variation to accommodate the lack of a property size variable, the geometric mean is calculated for the TOTAL\_FLOOR\_AREA of all transactions from the combined PPD-OCOD dataset in each LSOA area for which this information is available. This value is then multiplied against the geometric mean of the MP variable, which is calculated in the same manner as the above equation. Thus, the estimated price is taken from the localised price per meter and then multiplied against the mean local property size. The price of which is then adjusted against HPI based on the date when the transaction took place.

$$\left( \left( \prod_{i=MP}^n x_i \right)^{\frac{1}{n}} \times \left( \prod_{i=M^2}^n x_i \right)^{\frac{1}{n}} \right) \times \left( \frac{HPI}{100} \right) \quad (8.2)$$

Like the HPI itself, the above estimates seek to find the best estimate of the ‘middle’ of the market. Given how prices have been estimated in my workings, this approach is likely to underestimate the actual price paid.

To further aid the estimation of predicted values towards values in line with market averages, minima and maxima were placed upon the TOTAL\_FLOOR\_AREA in the EPC dataset. In this case, a minimum of 6.5m<sup>2</sup> was used, with values below this being set as missing (and therefore estimate prices being derived from the second formula), a value which was chosen as the minimum legal size for domestic occupation by an adult in the UK (Ministry of Housing, Communities & Local Government 2018).<sup>7</sup> Similarly, a maxima of 1000m<sup>2</sup> was set at the upper end of the

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<sup>7</sup>This figure is far lower than the recommended minimum of 37 m<sup>2</sup> for new dwellings, but as this is a recommendation, not a legally enforced minimum (indeed one for which there are many planning loopholes), the very small 6.5m<sup>2</sup> was taken instead as the value below which no reported EPC figure

distribution, a figure which was published as the upper bound in the most recently published national statistics (Department for Communities and Local Government 2017b). Reported EPC floor space areas above this may well have been accurate, especially given the high proportion of exceptional properties in the OCOD dataset — for example, the stately home of Wentworth Woodhouse, which is an exceptionally large 11,519m<sup>2</sup> was sold to a historical trust in 2017 for £7 million (BBC 2017). With these minima and maxima in place, 282,283 floor space value were removed from the joined PPD-OCOD dataset, while 795 properties were capped at a total floor area of 1000m<sup>2</sup>.

With these assumptions in place, the above model was applied to the OCOD data. First, for the 46,287 transactions for which there was not price information but property size and then to the 29,508 for which were classed as domestic properties but for which there was no price or size information. The resulting price estimation had a mean of £278,108 and £235,718 respectively — values which are similar to the mean house price in the UK. The maximum values estimated by the models were a price of £2,303,438 and £2,261,632. The distribution of estimated values mirrors house prices in the UK as a whole, clustering steeply around the mean price with a long tail. When comparing the predicted prices using this model against OCOD transactions with recorded prices, the model underestimated the price of most properties in question. 79% of recorded OCOD transaction prices are underestimated by this model with a mean underestimation of £1,342,934. By comparison, for those values that were overestimated, the mean overestimation was only £141,406 with a maximum overestimation of £1,703,438 compared to the maximum underestimation of £96,026,778. Therefore, the model of price estimation used provides a predicted price that intentionally underestimates the likely true value of the transaction price. Seeking to work within the confines of the highly

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should breach. As it is possible that single occupancy rooms, either as exceptional stand-alone cases or as part of an in HMO where rooms were registered separately in their EPC certification, making figures between 6.5m<sup>2</sup> and 32m<sup>2</sup> both plausible and a sad reflection of the state of housing provision in the UK.

irregular OCOD dataset, which cannot apply the test of 'true market value' to the transactions it contains, and therefore does not seek to adjust the data to one which would fit parametric assumptions. Rather, the model developed explicitly does not seek to find the best estimate of the missing prices but to find a realistic underestimation based explicitly on assumptions I have made.

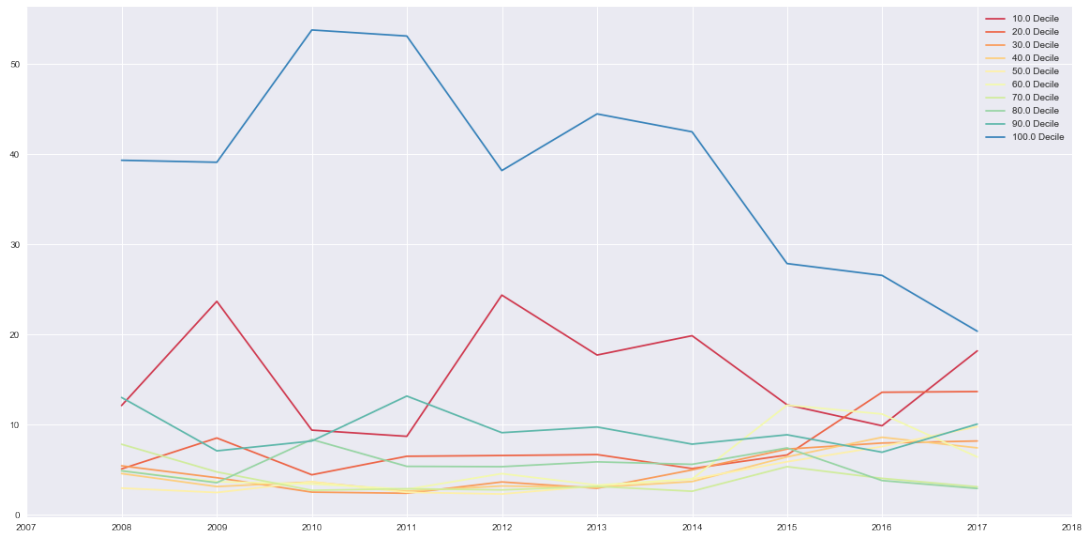
The resulting price estimated for these transactions is thus far below those for which this information is available. The OCOD transactions have price information totalling £124 billion worth of property market activity, at a mean of £1,638,680 per transactions. The estimated transactions account for a far smaller but still significant £13.6 billion worth of activity, at a far lower average of £259,476 per transaction. The volume of estimated transactions is thus far smaller than those for which this data is available, and as a consequence of this techniques is likely a significant underestimation of the true value of the transactions in question. However, the size of even this conservatively estimated value is still so large as to warrant an estimated price rather than removing these transactions from the dataset. To this end, the following section uses the full population of transactions identified as domestic properties, substituting an estimated price where none were previously available. Therefore, the results presented are likely to underestimate the scale of the value of properties owned by offshore shell companies.

### **The Price of Enveloping**

The following section builds on data cleaning, expansion and correction undertaken in the previous sections to examine the distribution of domestic property transactions in the OCOD dataset and how these results can be understood in relation to housing market data in the PPD dataset. To this end, the structure of this section closely follows that of the analysis of the PPD data at the end of Chapter 7. The section begins by analysing how merging the OCOD data into the PPD dataset to incorporate the previously 'missing' enveloped transactions affects the distribution of price decile by

changing the volume of transactions within each decile and the price thresholds for the deciles themselves. Finally, the section ends with a re-computation of the Gini of housing market transactions. The results demonstrate that the ‘adding back in’ the OCOD data significantly increases inequality within the housing market.

Figure 8.18: Percentage distribution of Enveloped Domestic Transactions by Decile



The first stage of the analysis was to assess the distribution of the transactions available in the price information for all domestic properties in the OCOD dataset. Figure 8.18 plots the yearly distribution of transactions in the OCOD dataset by classifying each transaction according to the decile band it falls in within the merged PPD-OCOD dataset. With this, figures showing the extent to which most enveloped transactions were for properties in the top decile of all property market transactions. The transactions in the very top decile are peaking at over 50% in 2010 and 2011 before falling away from following the introduction of ATED in 2013. Also of interest is that the second-largest decile for OCOD transactions is the bottom 10% of all property market transactions. Part of this can be attributed to underestimating the price imputation model used in this research, with there being several years (2009, 2012, 2015-2017) in which estimated prices make up most OCOD transactions

in the lowest band. However, this is not true of all years, with over two-thirds of transactions in this band being drawn from the OCOD data itself in four years (2008, 2009, 2011, 2014). This could be interpreted in two ways; either transactions were taking place at well below the ‘full market price’ against which they would be measured were in the PPD; or that in these years the use of offshore structures was used for holding of some of the cheapest property in England and Wales — potentially as a part of a rental portfolio of low-quality housing.

Figure 8.19: Percentage of Enveloped Dwelling Transactions in Each Decile

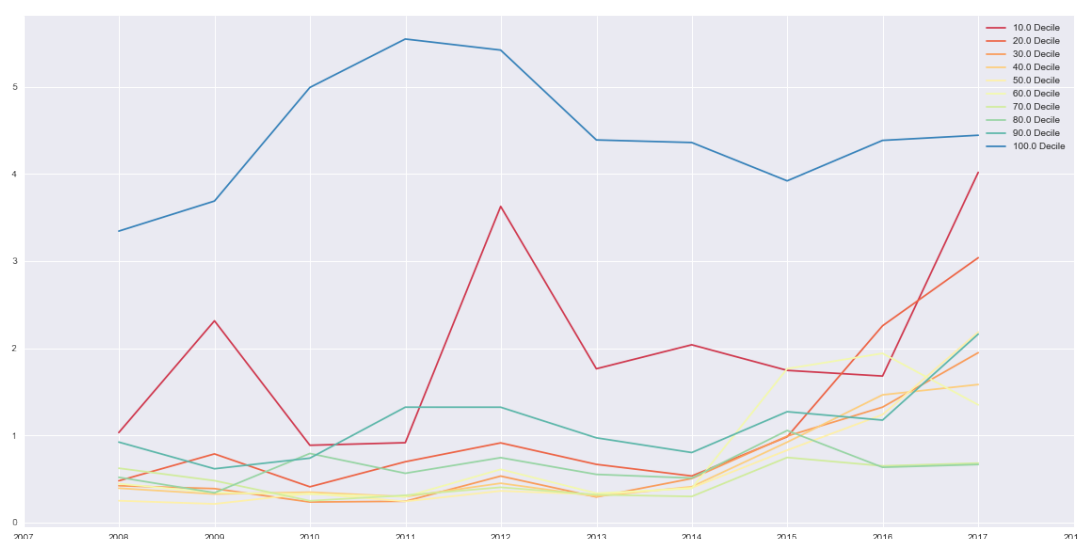


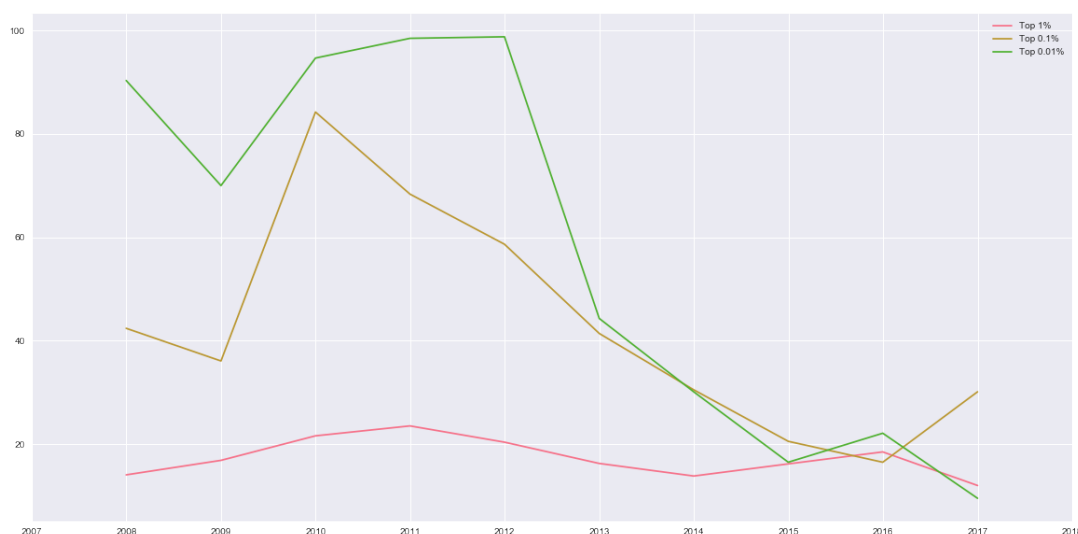
Figure 8.19 approaches the distribution of OCOD transactions from the opposite direction, calculating how many OCOD transactions are in each decile band in the joined PPD-OCOD dataset. This figure presents a different perspective on OCOD transactions and their relation to the wider housing market. Firstly, it shows that the volume of OCOD transactions accounts for a small portion of the property market as a whole, representing between 0.85% and 2.25% of the joined PPD-OCOD dataset annually. When this is broken down by decile band, as is illustrated in Figure 8.19, in all decile bands, OCOD transactions only make up a small portion of transactions. Of which the highest proportion is for transactions in the top decile followed by the

lowest decile. In placing the OCOD transactions in the context of transactions for the property market as a whole, this figure provides a good contextualisation for the changes in activity brought about by the introduction of ATED. There is a fall in the number of transactions in the top decile band, but a relatively stable proportion of transactions is being conducted through enveloped structures.

These trends are made even clearer when focusing on the very top of the distribution. Figure 8.20 runs this analysis again, calculating the proportion of OCOD transactions as part of the very top 1%, 0.1% and 0.01% of the whole housing market. It shows that before 2013, almost all of the very top 0.01% of housing transactions were conducted through offshore shell companies. They show that the PPD and the HPI have missed the entirety of the highest reaches of the UK property market. The impact of ATED reforms sees this proportion fall dramatically in the following years. Potentially, because those with the most resources and largest estates to plan have moved onto other more efficient structures, such as structuring ownership through trusts, through the sale of the holding company rather than the property itself or other 'off-books' transactions which would not register a change of ownership with the LR. In contrast to this dramatic change at the very top of the market, the proportion of the top 1% of OCOD transactions has remained at a more stable 15% - 20% of transactions between 2008 and 2017, demonstrating that despite the introduction of additional ATED charges, the use of enveloped ownership structures remains popular.

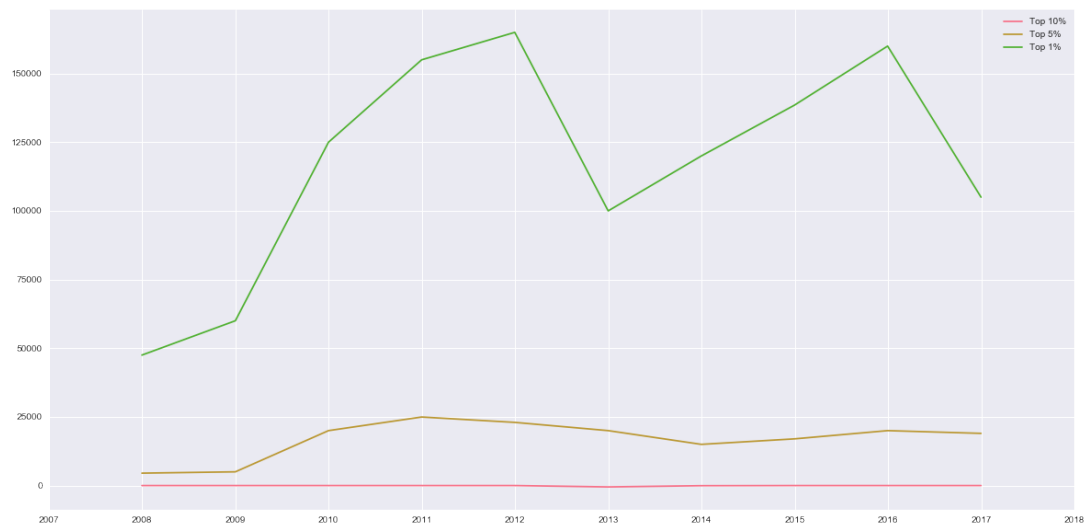


Figure 8.20: Percentage of Enveloped Transaction in Top Deciles



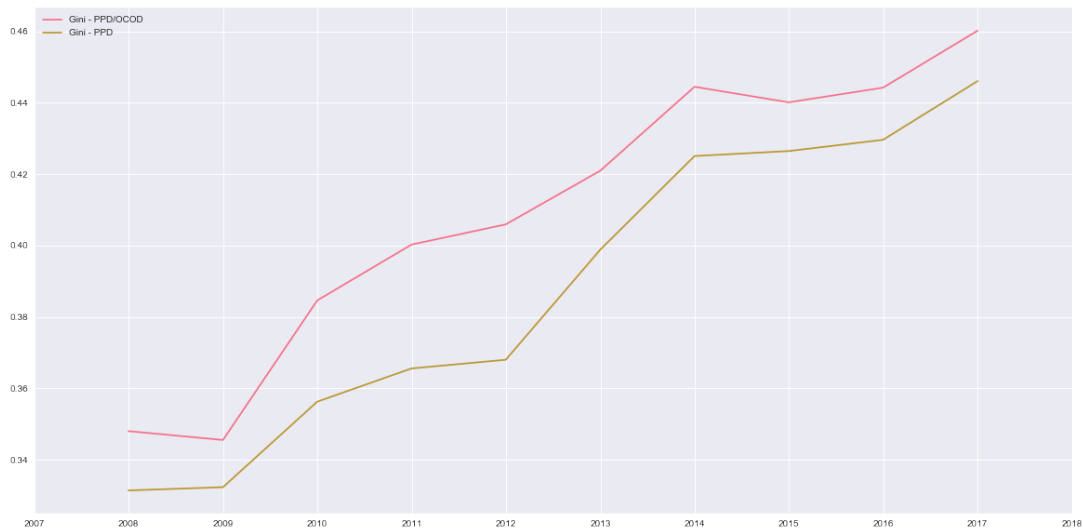
The above figures have been calculated as part of the merged PPD/OCOD dataset, with the added OCOD transaction having been separated as a means to assess their location in the overall distribution of property transactions. Figure 8.21 takes a different approach and looks at the difference that the inclusion of the OCOD data makes on the decile thresholds themselves, with the Figure plotting the difference in the lower bound threshold for each decile. As this figure demonstrates, for the top decile, the inclusion of OCOD data results in minimal change in the decile threshold. Furthermore, the volume of transactions added from the OCOD does not significantly impact the decile threshold. At the level of 5%, the inclusion of the OCOD has a small impact on the threshold, raising this bar by £25,000 a year. For the top 1%, however, this changes dramatically, with the threshold increasing from the mid-2000s onwards rising to a high of £200,000.

Figure 8.21: Difference in Top Decile Thresholds between OCOD-PPD Joined and OCOD data



To assess the impact the inclusion of enveloped dwellings have on the overall landscape of the housing market in England and Wales Figure 8.22 recreates the housing market Gini of Chapter 7. The methodology for which remains the same as in Chapter 7 but with both the PPD and the joined PPD/OCOD data plotted next to each other. This demonstrates that the 'hidden' transactions of the domestic property in the OCOD, while a numerically small part of overall transactions, forms a significant part of the most valuable transactions. This, as a result, shows an increase in the inequality between housing market transactions, one which is being driven by the very high prices being paid at the very top of the housing market. This reveals the distortions caused by how the land registry data is structured for how the housing market is understood.

Figure 8.22: Housing Market Gini by Year - Including Enveloped Dwellings - England and Wales



## Conclusion

The research presented in this Chapter has approached the data as a point of ‘breakdown’ in the information infrastructure of land registration. In doing so, it has shown that the housing market is significantly more unequal than previous figures showed. As a result, it has demonstrated why the ‘missing’ houses matter and what this means for how both the information infrastructure of land registration and the housing market are understood.

Placing these findings in relation to the research presented in previous Chapters raises the question of the extent to which these ‘missing’ data points constitute a breakdown in the information infrastructure of land registration. Although the initial methodological approach of the research was to treat this missing data as a site of breakdown, its omission, as previous Chapters show, is in keeping with the long-arch historical trajectory of the purpose of the system of land registration. The findings of Chapters 4 & 5 argue that the founding purpose of the LR and the wider system of land registration was not to establish a comprehensive cadastre of land

ownership. Rather, the goal of a system of land registration was to enable the property market. It is argued that this is a purpose which has endured, with the findings of Chapters 6 & 7 demonstrating that the growth of the information infrastructure land registration and the collection of housing market statistics over the 20th century has augmented but not fundamentally altered the functioning of the system of land registration. To this end, the lack of information collected on the house of today's elites is not a fault in the system but a point of continuity with the 19th-century politics of preservation of elite wealth and power through land, which became embedded in the infrastructural assemblage of land registration.

In conducting this research, this Chapter has applied an 'investigative' methodology to the data collected by the LR. It has demonstrated the potential of such methods for sociological research, showing the possibilities for their use in working with new forms of digital data and application to the study of elites. In working at a point of breakdown and through the lens of information infrastructure, this research has shown how the process of classification can exclude elites to their advantage. Furthermore, through working with transactions that have been 'hidden' through offshore shell companies, the research in this Chapter has shed light on the ongoing tension of legal practitioners working in the interest of their wealthy clients who can advantage them by sheltering property ownership against the purpose of land registration.

The findings of this Chapter have documented the scale of housing market transaction conducted through offshore shell companies. It has located these transactions both geographically and in terms of their price. Furthermore, it has placed these figures in the context of national housing market statistics. It has found that these transactions are primarily clustered in Central London, with there being a clear micro-geography of the areas in which they are located. In addition to this concentration, the research has also found that lower levels of enveloped

transactions are conducted across many locations in London and the country. Furthermore, the price of enveloped transactions is primarily drawn from the very top of the housing market, with some years seeing all of the very top 0.01% of transactions conducted in this manner. As with the geographical spread, the price of the transactions identified in this research are not all located at the very top of the market but are present in all housing market deciles.

In building on the research presented in other Chapters, the research presented in this Chapter has worked with how the LR structures its data to explore how the 'puzzle' of houses like Withanhurst came to be. Through utilising the understanding of how the LR collects its data, how this data is structured, and how this information is used to quantify the housing market, this research has been able to work with this data to uncover the 'missing' houses of elites. Doing so has revealed the scale of these 'hidden' transactions and how adding them back alters our understanding of the housing market. The picture of the housing market this reveals is significantly more unequal than official figures suggest, further impacting how the distribution of wealth and inequality in the UK is understood. 16

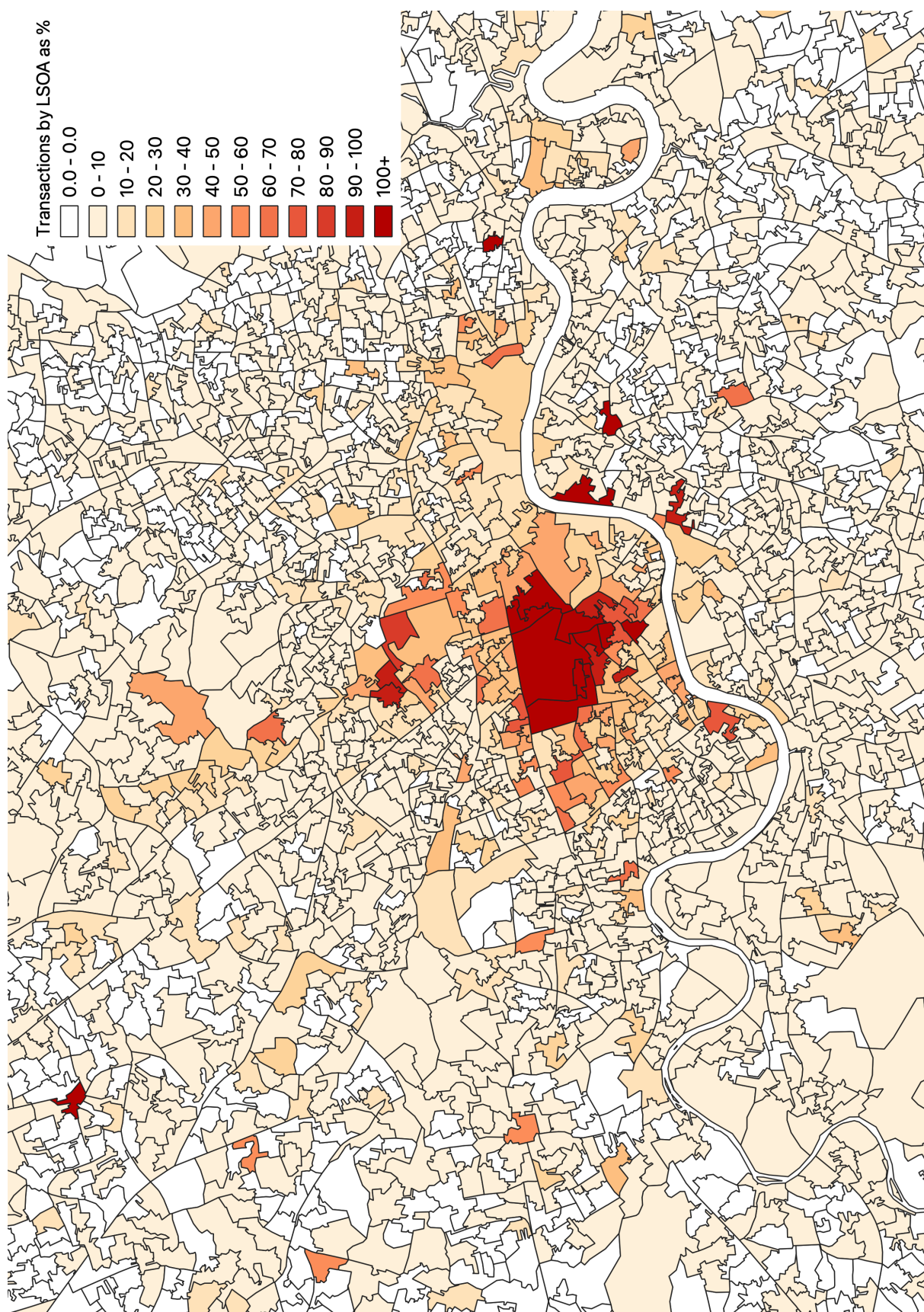


Figure 8.17: Percentage Increase in transactions by LSOA - Central London

# Chapter 9: Conclusion

## Introduction

The majority of wealth in the UK is tied up in property ownership, with the continual increase of house prices being a major driving factor in the rise of inequality in the UK. A growing concern in inequality research has been the stratification in inequality, with those already owning assets seeing their value continues to appreciate, a phenomenon that sees the rich get richer while the rest of society continues to stagnate. One of the major difficulties facing research in this area has been the study of elites whose privilege creates a level of inaccessibility, which has stymied attempts by researchers to make sense of or visualise the concentration of wealth amongst this minority. Therefore, understanding the housing market dynamics and how housing wealth is measured is a crucial component of any contemporary picture of inequality in the UK.

This Thesis contributes to studying the relationship between housing wealth and inequality by examining the system of land registration on which this rests and that sociology has previously failed to prioritise. This approach is advantageous in two ways; firstly, as the infrastructure of land registration necessitates the operation of the UK housing market and forms the basis of UK housing market statistics. And secondly, the infrastructure of land registration itself developed from compromises between the need for a modern market in real estate and the preservation of

aristocratic elite power based on the ownership of land. In order to study practices of land registration, this research has adopted methodological insights from information infrastructure studies which see infrastructure as an often-invisible set of ongoing relations that can make data practices and knowledge production both opaque and seemingly authoritative.

Furthermore, this research has not only sought to gain an understanding of the information infrastructure of land registration and what is 'missing' from its data practices but has also investigated the effects of including these data points in reconsidering housing market statistics. This research has shown that much of the high end of the housing market has been missing from UK housing market statistics and that 'adding it back in' significantly alters the picture of inequitable housing wealth in the UK.

Therefore, this unique approach brings together and, in turn, contributes to three areas of sociological research. Using land registration as a scaffold between housing studies, elite studies and studies of inequality has made it possible to explore the complex relationship between these disciplines. This research contributes to housing studies by examining the system of land registration, arguing that housing data derived from this system should not be taken at face value. Therefore, viewing this system as an information infrastructure is crucial to understanding the modern housing market's legal, technical and political underpinnings. To the study of elites, this research contributes new data on the accumulation of housing wealth in the UK and the methodological possibilities of investigative computational methods as a means of researching this often-inaccessible population. Bringing these findings together, this Thesis contributes to the study of inequality through the picture of 'missing' elite wealth it demonstrates, suggesting future areas of research for the study of inequality and rigorous examination of how one of the major sources of contemporary wealth inequality — housing assets — comes to be quantified and



known in the UK.

Through showing the interconnections between the effects of housing and elite privilege and the widening stratification of inequality, rather than relying on accusations and attempts to evidence causality, this research draws out the legacies of elite power embedded in the information infrastructure of land registration without seeking to evidence historical continuities. The remainder of this conclusion will present a summary of the findings and a discussion of their contributions for each of the three case studies developed in this Thesis before finishing with a reflection on future directions for research.

## **The Historic Development of the Land Registry**

### **Summary of Findings**

The fourth Chapter of this Thesis asked what the socio-material and legal conditions of the development of the system of land registration were and what can be learnt about the current system of land registration through an examination of these conditions. The research presented in Chapter four explores historical periods from the first registries in West Riding and Middlesex in 1764, through the development of national land registration at the founding of the Land Registry in 1862, ending with the extension of compulsory registration in London and the 1925 Land Registration Act. This Chapter argues that the socio-material conditions for the organisation of the infrastructure of registration, which developed over this period, are intimately linked to the legal form of land ownership.

In particular, this Chapter finds that crucial to developing a system of land registration were modes of standardisation and classification that invoked an assemblage of the social, material and legal. The absence of these modes of organisation was the reason behind the failures of the early registries and their later

coalescence being key to the success of today's infrastructure.

However, the standardisation and classification of how the property was owned, evidenced and transferred, however, was not simply a question of the correct organisation of the social, material and legal. Instead, however, a transformation of the fundamental forms through which owning, evidencing and transferred property was facilitated. This research argues that it was the *Blackboxing* of the assemblage of these elements behind the veil of a title system that enabled the development of information infrastructure of land registration. Furthermore, the fundamental means of classification and standardisation underpins the system that remains today. Moreover, as this Chapter argues, this has become an invisible 'taken-for-granted' part of today's property market, to the extent to which land registration has been overlooked by sociological research.

The fifth Chapter of this Thesis sought to contextualise the fourth Chapter's findings by examining the power of elites and the wider reform of real estate law had on the development of land registration as an information infrastructure. Building on the *Blackboxing* of land registration discussed in the last Chapter, the research presented in this Chapter, uses the continued distinction between leasehold and freehold land (in both land law and the daily operations of the Land Registry) as the entry point from which to examine the power relations from which the infrastructure of land registration grew.

In examining the details of how the context in which the infrastructure came to be, the research in this Chapter finds that the implementation of land registration arose out of a drawn-out process of political compromise. One which specifically was not an extension of the power of the state, either as a means of collecting taxation or information on the ownership of the land, as was the case in other European countries, and is often assumed to have been part of the long-arch historical development of the state in England. Rather, as this research demonstrates, the

purpose of the development of land registration was to facilitate the conveyancing of land in a manner that specifically did not constitute either a challenge to the elite's power or require a fundamental shift in the basis of land law. An infrastructure that, as the research in this Thesis demonstrates, has come to underpin the contemporary property market.

## **Discussion and Contributions**

Therefore, the fourth Chapter's findings contribute to studies of housing and the housing market in the UK through a close examination of the origins of the social, material and legal underpinnings of today's housing market. The contribution is the way in which the base organisation and fundamental legal form on which this infrastructure rests first came to be — with the *Blackbox* of the title system enabling the development of this infrastructure. It is thus this reason why land registration has been a neglected topic of study for housing researchers as it is exactly the success of this system that has enabled the infrastructure of land registration to become a background process, one which is assumed to function seamlessly and whose operations are taken for granted. Providing a previously missing perspective, which explores, and crucially relates, the historical development of land registration to the system of land registration today.

The fifth Chapter further contribute to the study of elites through the extension of the lens of information infrastructure studies developed in the fourth Chapter to the context of elite power and land law reform in which the development of land registration took place. As where studies of infrastructure from STS perspectives have traditionally focused on who is excluded from practices of knowledge production to their detriment, the research of this Chapter flips this focus. Instead, looking at those who benefit from not being known or seen by the infrastructure. An approach, which, as this Chapter demonstrates, draws attention to the elite politics in which the system of land registration developed and out from which this silence

stems.

This approach, therefore, contributes an original means to the study of elites over long arch historical spans; one which does not seek to draw a direct connection between the expression of elite power at the formation of the infrastructure of land registration and how this system continues to benefit elites through either causation or conspiratorial intent. This Chapter traces how elite power was originally preserved through the interface between land ownership and land law and sees its legacies as the continuance of structural power into the present.

It seeks to bring attention to how the formation of the system of land registration during this time has left a silence within the ongoing work of an information infrastructure. To do so allows this approach to research to discuss the continuities embedded within the form of the infrastructure without the need to create (artificial or conspiratorial) continuities to an elite grouping. As with infrastructure studies of those excluded or marginalised within the flows of information and its modes of classification, standardisation, and consequently representation, such an approach does not seek to speak on their behalf but draw attention to how the infrastructure acts upon them. For the inverse position of elites, this research makes an asset of their inaccessibility, seeking not to ascribe motive or intent on their behalf but to focus on the empirical function of continuities that reproduce a dynamic of privileged opacity.

## **The Production of Housing Market Statistics in the UK**

### **Summary of Findings**

The research presented in Chapter 6 examines the relationship between the information infrastructure of land registration and statistical knowledge of the housing market. It finds that, in line with the founding purpose of land registration

discussed in the previous Chapters, there was no relation between the work of the Land Registry and statistical knowledge of the housing market for much of the twentieth century. The survey methodology, thorough which these statistics from the 1950s until 1990s provided at best a partial overview of trends in the UK housing market as a whole, with the housing practices of elites being a particular blind spot of the figures produced during this time. Although during this time, the purposes of the state expanded into the machinery of land registration, with the loosening, and then abolition, of the secrecy of the register and the increasing use of this information by other agencies of the state — changes which eventually paved the way for the use of land registration data as a basis of housing market statistics.

The research in this Chapter further finds the shift to the use of land registration data as the basis of national housing market statistics came out of a combination of factors; the need for accurate metrics for macro-economic management by the Bank of England, the digitisation of the information infrastructure of land registration itself, the reforms of statistical knowledge production in the UK from the mid-1990s onwards, and the drive towards the standardisation of housing market statistics across EU member states. A 'statistical superstructure' came to be built on top of the information infrastructure of land registration.

The research presented in Chapter 7 asks what can be learnt about elites from the statistical knowledge that derives from land registration information infrastructure. The findings of this Chapter build on those of the previous Chapter to examine both the methodology of the House Price Index and the data which underlies it. Finding that while how the HPI is constructed is far more sophisticated than the survey methodology of the DoE index that preceded it, both its theoretical foundations and practical implementation are built on assumptions that result in the housing practices of elites being missed from the picture it creates. A picture, which as the research in this Chapter demonstrates, has resulted in 'statistical superstructure'

being built on top of the infrastructure of land registration — one requires ongoing acts of maintenance to ensure that it meets the methodological criteria of statistical knowledge production. The second part of this Chapter presents further findings from an analysis of the data that underlies the HPI itself, finding that the methodology on which it relies has minimised trends at the top of the housing market. This research finds that the top of the housing market is growing at a faster rate than the rest of the housing market. And that this growth is driving a significant new trend in inequality within housing market transactions.

## **Discussion and Contributions**

Amongst the contributions of the findings of these Chapters to the sociological study of housing in the UK is the first comprehensive history of the development of housing market statistics which connects the picture of the dramatic rise in house prices in the UK with the way in which they are measured and the importance of these measures for macro-economic policy management. In doing so, it presents a picture of a 'superstructure' of statistical need constructed on top of the infrastructure of land registration. An approach that brings the process of land registration into conversation with the use of housing market statistics in social research, drawing attention to the invisible work done by the information infrastructure of registration. Using this approach to explain the limited data which is available about housing in the UK and the omission and silences within the data that does exist.

These findings add to the methodological possibilities present for research into this often-elusive group from an infrastructural perspective to the study of elites. It focuses on how choices in the statistical methodologies used in the production of housing market statistics and the practices of collection and maintenance conducted by the Land Registry fail to engage with the housing of elites. A failure stems from the purpose with which the Land Registry itself operates: to facilitate the ownership

and conveyancing of property and not collect information for administrative purposes. Furthermore, this finding is important for the study of housing and the housing market. This theme is explored in the analysis of the underlying data used to construct the HPI, with this research demonstrating that prices at the very top of the housing market (as visible through this data) is accruing at a far faster than the rest of the housing market. This finding raises questions for the study of elites and their relation to inequality, as to why this dynamic came to be and given the apparent continuation of this trend and what this means for the study of inequality when the properties of the rich are becoming ever more expansive.

## **Adding the Offshore Back In**

### **Summary of Findings**

The research presented in Chapter 8 adds back into the housing market data that is missing from the official national statistics discussed in the last two Chapters. The source of the missing data examined in this Chapter is from the split within how land registration data is processed and stored by the LR, with properties owned and transacted by overseas companies being recorded in a separate database than those used in the production of official statistics. However, the research conducted in this Chapter shows that the majority of these transactions are for domestic properties and are owned by companies located in offshore secrecy jurisdictions. Treating these properties as part of the housing market reveals the extent to which the high end of the housing market had been missing as a result of the data practices of the LR. And highlighting the extent to which bringing these houses back in significantly increases the scale of inequality of transactions within the housing market. There are four sets of findings, with each building on each other to present a deeper analysis of what can be learned and its effects on inequality in the UK.

The first set of findings in this Chapter examines the transactions from overseas

companies in the OCOD dataset published by the LR. This section shows the significant and rising growth of the number of transactions conducted by overseas companies since the introduction of compulsory registration by the 2002 Land Registration Act. Of these transactions, this research finds that 68% of all non-UK transactions are conducted from companies located in four jurisdictions known as hubs for financial secrecy: the British Virgin Isles, Jersey, Guernsey and the Isle of Man. 17 of the top 20 countries, which account for 92% of overseas transactions, are located in jurisdictions known as either corporate tax havens or financial secrecy jurisdictions. The location of these properties is concentrated in Central London, with the City of Westminster and the Royal Borough of Kensington and Chelsea being particular at the epicentre of property transactions conducted by companies located in such jurisdictions.

The second set of findings for this Chapter is based on the computational analysis and matching of the OCOD data with EPC data which allowed the property transactions in question to be identified as residential or commercial dwellings. The first finding is the scale of transactions that had been collapsed within the OCOD data, with multiple distinct properties being listed under the same transaction, with this analysis splitting out these properties significantly expanding the size of the OCOD from 97,000 transactions to 239,492. When these properties were then matched to the EPC records, the research found that most transactions in the OCOD dataset were for domestic properties, with 65% of transactions being identified as such. A proportion which this research found to be stable over time, with over 50% of transactions being conducted by overseas companies being domestic properties since the introduction of compulsory registration.

The third set of findings looked at the geographic location of those properties identified as residential dwellings. This analysis found a wide spread of such properties, with their being at least one such transaction in 31% of LSOA in England



and Wales, but a high level of concentration in areas where offshore companies are regularly used for the purchase of houses, with only 5.8% of LSOA having more than ten such transactions.

The fourth set of findings focused on the prices of the domestic properties identified by the previous findings. By supplementing the LR data with the leaked Private Eye version of the OCOD data and a unique price estimation approach, the data used in this section provided the most comprehensive picture of the OCOD transaction data possible. This new data demonstrated that most residential transactions in the OCOD were in the top decile of housing market transactions. More specifically, such transactions made up a significant portion of transactions at the very top of the property market with up to 20% of the top 1% of the housing market has been 'hidden' through offshore shell companies, and in some years, all of the top 0.01% of the market having been transacted through such structures. When taken together, these findings significantly alter the inequality of transactions within the housing market, further adding to the findings of the previous Chapter to show that not only is the very top of the housing market growing faster than the rest of the housing market but that this increase and the corresponding growth of inequality within housing market is far higher than could be determined from previous data sources.

## **Discussion and Contributions**

Therefore, this Chapter's findings contribute to the study of the elite and housing by presenting a series of new figures and datasets that reveal a previously concealed picture of the housing market. For the study of housing, this research presents new work with Land Registry data, revealing the deficiency of both their commercial and overseas data sources, correcting these shortcomings and providing additional detail on the splits on property use. For the study of elites, this reveals the previously unknown scale of domestic housing ownership concealed through

offshore shell companies — revealing the extent to which this practice covered the very top of the housing market. It further contributes to the study of elites- the possibility of investigative computational methods to access this remote and often hard to reach group. It demonstrates how such methods can work in practice and that through the combination of a variety of data sources and the understanding of the silences within the infrastructure of information collection and processing developed in the previous Chapters, the ‘missing’ picture of elites can be traced out. In turn, these findings add a missing piece to the study of inequality in the UK, demonstrating the extent to which the housing market, and therefore the society in which it is located, is far more unequal than had previously been thought.

## **Future Research**

The research findings presented in this Thesis thus contribute to sociological research into housing, elites and inequality and further suggest new avenues for future research in these areas of scholarship. This research has foregrounded the importance of the exact means through which property wealth is measured to the study of inequality. In demonstrating the extent to which housing wealth is far more unequally distributed than was previously visible in official housing market figures, this Thesis suggests that further research is needed into the quantification and study of the wealth tied up in housing assets. In particular, the research presented in this Thesis has limited the scope of enquiry into this inequality to only transactions within the housing market, and one clear area of future research is to integrate these findings into other measures of inequality in the UK — of which housing wealth is only one (albeit large) part of the puzzle. A further line of research can be used to build on this analysis to look outside of the confines of the UK to the offshore jurisdiction in which the ownership of these ‘hidden’ properties is located and to the international flows of capital which many of these transactions represent.

Another potential avenue of research is to develop the lens of information infrastructures to approach the production of national statistics. Future research in this vein could seek to bring depth and nuance to how other forms of official quantification come to be. As, while the research presented in this Thesis has focused on the exclusion and silences within the infrastructure of land registration which benefits elites, this research has not had the space to engage with those who have been marginalised by this infrastructure and its interface with dispossession imposed through imperialism, empire and extractive accumulation. In particular, future research could use an information infrastructures approach, fruitfully bring the treatment of elites and the marginalised within such large-scale systems of classification, organisation and quantification into a conversation as two sides of the same infrastructural coin.

A final avenue for future research is to build on the investigative computational approach to the study of elites; such an approach could work within the dualism between the accessibility of digital data and the inaccessibility of elites to find innovative ways to study contemporary inequality. To methodologically explore the possibilities of big data for sociological research, in a manner that does not rest on quantitative methods which rely on demonstrating causality or predictive accuracy, but of working with and through data to tease out both what is hidden within and of telling silences and omissions through which the power and wealth of elites can be studied.

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