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The illusion of transparency: the geography of mortgage lending in Great Britain

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Abstract

Purpose – The purpose of this paper is to provide a comprehensive overview of the geography of mortgage lending in Great Britain. It uses a new mortgage dataset as a way to shed light on the spatial distribution of mortgage finance and to highlight the different lending patterns of seven major UK banks. It also examines the relationship between the distribution of mortgage finance and socio-economic status at the local level.

Design/methodology/approach – The methodology is based on simple quantitative techniques, including spatial analysis, location quotient analysis and socio-economic classification. Lending data for Great Britain's 10,000 postcode sectors are the basis for analysis here.

Findings – The results suggest that some banks lend significantly less than others in poorer areas, but, owing to a lack of data, it is not possible to say why. It is possible to identify banks that appear to change their lending patterns in areas with different socio-economic characteristics. The paper concludes by reflecting on key messages and by making a small number of recommendations to improve transparency in the sector.

Research limitations/implications – In the absence of demand-side metrics, it is not possible to determine which banks lend disproportionately high or low amounts in poorer areas.

Practical implications – This paper has implications in relation to increasing financial transparency in the residential mortgage sector. The most important implication would be to highlight the fact that this new data – whilst a welcome development – is a long way from providing proper transparency in the mortgage lending sector.

Originality/value – This paper fills a gap in the international literature in relation to our understanding of the geography of mortgage lending in a major world economy. It also highlights important differential lending patterns in relation to socio-economic status at the sub-national level.

Keywords Mortgage lending, Housing, Open data, Financial exclusion

Paper type Research paper

1. Introduction

In July 2013, the UK Government announced that the nation's biggest lenders were to reveal, for the first time, how much they lend at the local level across Great Britain. The

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new data release covered loans and overdrafts to small- and medium-sized enterprises, unsecured personal loans and mortgages. Following this announcement, in December 2013, lending data from seven major banks were released at the postcode sector level. The aim of publishing this new data, as stated by Her Majesty's (HM) Treasury, was to allow individuals and businesses to see for the first time how banks and building societies are serving the wider economy. The Treasury also claimed that the new data would provide more detailed disclosure than is available in the US through the Home Mortgage Disclosure Act of 1975, as indicated in their press release:

This publication of UK lending data will provide significantly more detailed disclosure than in the US, which is often cited as the best example of disclosure of lending data. In particular, it will highlight those more deprived areas where larger banks are often not willing to lend (HM Treasury press release, 24 July 2013).

The wording of the press release is evocative of the literature on mortgage rationing and “redlining”, which has played such a prominent role in the analysis of socio-spatial inequalities in the US and which could make a significant impact in the UK (Squires *et al.*, 1991; Berkovec *et al.*, 1994). Given the limitations of the available data, this paper does not – and cannot – make any attempt to identify redlining in Great Britain. The problem is that, to date, it has not been possible to systematically examine simple spatial variations in mortgage lending practices in Great Britain, even as a first step towards understanding more about the geography of mortgage finance. This paper therefore seeks to capitalise upon the availability of this new data source and to critically assess the extent to which it increases transparency in mortgage lending practices. It is hoped that this research could make a contribution to our understanding of the geography of mortgage lending in Great Britain and, potentially, draw attention to the issue of “financial exclusion” (Leyshon and Thrift, 1995) in more deprived neighbourhoods.

This paper necessarily approaches the topic from a supply-side perspective, as we have no equivalent data on demand and, crucially, are not able to make a robust assessment of the reasons for spatial variations in mortgage financing. Furthermore, any understanding of mortgage lending patterns must take into account the fact that lenders may be much more concerned about debt coverage and loan to value ratios as the most important criteria for allocating capital in local mortgage markets. If this was the case, we might expect banks to display similar lending patterns in more deprived, high-risk neighbourhoods. Thus, the areas of most interest from an analytical point of view are those in which there appear to be spatial clusters of low capital allocation in the mortgage market. The fact that this initial, incomplete, dataset helps us identify such areas gives rise to a need for further research on this topic.

The literature on redlining, mortgage rationing and financial exclusion is extensive; so rather than repeat what has been said elsewhere, the first part of this paper focuses on previous work conducted in Great Britain (Boddy, 1976; Bassett and Short, 1980; Jones and Maclennan, 1987). A more detailed account of the new data source is then provided and reveals that the data cover nearly three quarters of the mortgage market and nearly £900 billion of outstanding debt. The subsequent empirical analysis examines in more detail three topics: spatial variations in overall mortgage lending, spatial variations in relation to individual lenders and spatial variations in lending in relation to socio-economic status. The over-arching message is that there are significant spatial variations in mortgage lending practices and, importantly, some striking differences in

mortgage lending by major banks in the most deprived parts of Great Britain. The fact that we are not able to comment more meaningfully on the results is a strong indication that this first release of data – as with so much “open” data – creates an “illusion of transparency” (Marsh, 2011), and the paper finishes by making some recommendations to remedy this situation.

2. Previous research on the geography of mortgage lending

The international literature on the geography of mortgage lending can be situated under the broad rubric of financial exclusion, where individuals are denied access to financial products. This concept is most commonly discussed in relation to “redlining”, coined by Northwestern University sociologist John McKnight in the 1960s to describe the way in which lenders in the US were said to have drawn red lines on maps to identify areas where residents would be denied access to loans (Sagawa and Segal, 2000). Beyond the US, redlining has been seen to exist for decades in a wide variety of national contexts, including Canada (Harris and Forrester, 2003), The Netherlands (Aalbers, 2006) and the UK (Williams, 1978). To provide context for the subsequent empirical analysis, and rather than re-stating what has already been written, this section discusses the few previous British studies on mortgage rationing more generally. Before doing so, it is worth noting the words of Benston (1979, p. 147) who emphasised the need to specify a supply *and* a demand function in studies of mortgage finance:

If the focus is on the supply of mortgages, either in terms of numbers or dollars, a demand and a supply function must be constructed and specified. When demand is not accounted for, there is no way to determine the reason for any given level of supply.

It may be correct to say, as Benston does, that unless we account for demand that there is no way to determine the reason for any given level of supply. However, it is also reasonable to posit that in areas where there is very little supply of mortgages it cannot always be attributed to a lack of demand. From an epistemological point of view, then, what we can know about the reasons for the spatial distribution of mortgage lending are limited when we do not have access to data on both the supply and demand for mortgages, but this does not undermine the importance of understanding spatial variations in mortgage lending activity in the first instance. This paper therefore proceeds on the basis that it is necessary first to identify and describe patterns before we can continue to analysis and critique and, subsequently, put pressure on government to enhance transparency in the sector.

2.1 Key contributions to the British literature on spatially restrictive mortgage lending

The enactment of the Home Mortgage Disclosure Act in the US in 1975 spawned a new wave of academic research into redlining. One of the most significant early contributions in Britain was provided by Williams (1978, p. 25) where he noted that evidence of redlining had been identified in a number of areas, including Birmingham, Leeds, Liverpool, Manchester and Newcastle. However, in line with the data shortages which existed at the time, Williams noted that the “evidence” was often thought to be “inadequate proof of discriminatory practices against specific areas” and that the then Chairman of the Nationwide Building Society explicitly stated that “we do not red-line”. Ultimately, as Williams (1978, p. 32) acknowledged, the conclusions of early studies such as this had to be “tempered by the lack of any comprehensive analysis”.

Boddy's earlier study (Boddy, 1976) explored similar issues, but with less focus on the allocation of mortgage finance. Nonetheless, he was able to draw on empirical data from a study of Newcastle which sampled individual-level mortgage transactions. Of most relevance for the present study is the inclusion of a special section on "the spatial pattern of mortgage finance" where the author states that "mortgage controllers view certain areas as being unstable in social and economic terms and thus any property they contain is considered unsuitable as mortgage security" (Boddy, 1976, p. 67). What is also worth noting is the final paragraph of the paper, where Boddy (1976, p. 70) states that the policies of individual lenders are:

[...] an important influence, through the spatial patterning of mortgage finance, on the production of urban space, while their policy, in turn, is a reaction to the pre-existing social and economic urban structure.

This two-way relationship is sometimes overlooked in studies of financial exclusion, yet it is an important dimension of a complex socio-spatial phenomenon.

Following Boddy's study of Newcastle, in 1980, Bassett and Short conducted a similar analysis in Bristol, the purpose of which was to comment on patterns of lending during the 1970s. The methods used in the paper comprised interviews with seven building society managers and empirical analysis of lending data covering the period from 1972 to 1977 in Bristol. Of most interest to the present study was their analysis of the distribution of mortgages by socio-economic group. In 1972, they found that 37.3 per cent of mortgages were allocated to professional and managerial household heads, whereas in 1977, this had decreased to 26.0 per cent, and the highest percentage of mortgage finance was allocated to the skilled manual category (32.7 per cent). The sample sizes here were relatively small (381 in 1972 and 492 in 1977), yet this early empirical analysis provides a methodologically robust precursor to the research conducted here. Bassett and Short (1980, p. 290) were able to demonstrate in their study that there was a distinct spatiality to mortgage lending in Bristol but also that, even within the five-year period of their study, "patterns of lending are subject to short-term change in response to a variety of factors". This temporal dimension must be borne in mind when interpreting the results of any cross-sectional analysis, as is the case in this paper.

A number of other studies during the same period examined the links between mortgage lending and the socio-economic characteristics of purchasers (Harloe *et al.*, 1974; Duncan, 1976; Karn, 1976; Lambert, 1976), but Grime and Smith's (1982) analysis of mortgage allocation in Salford and Manchester in particular stands out as an example of a rigorous empirical study. Arguably, the most significant contribution in the British context to date is by Jones and MacLennan (1987, p. 216), in their more theoretically advanced and empirically sophisticated study of credit rationing in Glasgow. In this study, the authors state that the spatial variations in lending cannot "be explained to any great extent by a simple loan refusal/area redlining process". Instead, they found that spatial variations in financing patterns reflected borrower creditworthiness and the quality (or perceived quality) of building stock in different areas. This is a significant finding in that it helps crystallise an important aspect of the financial exclusion debate; that we can easily identify spatially variegated patterns of mortgage lending, but we cannot easily (if at all) "prove" that such patterns are a result of the pre-formulated plans of certain lenders. The contention here is that in the absence of a complete dataset on

supply *and* demand, the search for such proofs in the allocation of mortgage finance in individual cities is misguided. What is more useful in the first instance is to examine national patterns of lending at the local level to provide evidence in relation to areas where lending by individual institutions is lower than average.

Following Jones and Maclennan (1987), there were relatively few examples of work which shed further light on the distribution of mortgage finance in the UK, though Leyshon and Thrift (1994) did examine the retreat of the financial services industry from poorer and more disadvantaged communities in the context of the early 1990s recession. They identified similarities between the ways in which problems of access to financial products in the US were beginning to develop in Britain and noted, as others had done, the paucity of British literature on the subject. In a subsequent paper, Leyshon and Thrift (1995) provide a more comprehensive comparison between geographies of financial exclusion in Britain and the US more generally, with a focus on retail banking. Another US British comparative piece, by Marshall (2004), focuses on financial institutions in disadvantaged areas and, in particular, policies which encourage financial inclusion but, on the whole, the lack of access to robust lending data has prevented the development of a US-style literature on spatial patterns of mortgage lending in Britain.

From the foregoing review, two key points emerge. The first point is that in understanding the geography of mortgage finance, the search for “evidence” or “proof” of redlining is in many ways a red herring. Benston (1979) claims that for “valid conclusions” to be drawn on redlining, we must know about the supply of, and demand for, mortgage finance, and we must also have access to data for all mortgage lenders. This may be true for the specific issue of whether individual lenders explicitly outline areas where they will not lend (i.e. redlining), but it is not true in relation to drawing valid conclusions about the spatial distribution of mortgage lending more generally, which is the subject matter of this paper. The second point is that the study of spatial variations in mortgage lending has historically been subject to significant data deficits. The most empirically advanced work to date has been conducted in the US, with only piecemeal studies being conducted elsewhere. The intention now is to redress the balance in a small way by providing a spatial overview of patterns of mortgage lending in Great Britain using a new data source.

3. An overview of data sources

On 17 December 2013, the Council of Mortgage Lenders published aggregate mortgage data from seven major lenders: Barclays, Clydesdale, HSBC, Lloyds, Nationwide, Santander and The Royal Bank of Scotland (CML, 2013). These datasets were made available at the postcode sector level, of which there are just over 9,000 across Great Britain. This initial data release covers outstanding mortgage debt up to the end of June 2013. It accounts for almost 73 per cent of the total mortgage market and £898.1 billion of lending. The largest percentage of the total, 34.6 per cent (£307.4 billion), is owed to Lloyds. Santander accounts for 16.5 per cent (£146.7 billion), Nationwide 14.6 per cent (£129.9 billion), Barclays 13.5 per cent (£120.0 billion), RBS 11.0 per cent (£97.7 billion) and HSBC 8.2 per cent (£72.5 billion). Figures published by Clydesdale, a National Bank of Australia subsidiary, also include data from the Yorkshire Bank. It lends mainly in Scotland and the north of England; therefore, its 1.6 per cent share (£14.6 billion) is indicative of its geographical focus.

Owing to the existence of some postcode sectors with low populations and low values of outstanding debt, a small amount of data are redacted to preserve customer confidentiality. In consultation with HM Treasury, the following rules were applied to the release of mortgage data (CML, 2013):

- Borrowing stocks for a postcode sector are not disclosed where fewer than ten borrowers exist or where borrowing is highly concentrated in a small number of the largest borrowers in the sector.
- Individual lenders are not obliged to publish borrowing at postcode sector level if they hold less than 3 per cent of mortgages.

At an aggregate level, the total value of borrowing redacted is under 0.5 per cent of all mortgage debt. It is also important to note that this data release covers Great Britain and not the whole of the UK, so figures for Northern Ireland are not available at present. To put the aggregate Great Britain figures in some kind of international monetary perspective, the £898.1 billion of outstanding mortgage debt in Great Britain at the end of June 2013 is roughly equivalent to the GDP (purchasing power parity) of Canada in 2012 and around double that of The Netherlands for the same year. The total value of outstanding mortgage loans in the UK in June 2013 was £1.266 billion, compared to a 2012 GDP of £1,450 billion.

To provide a more in-depth understanding of the relationship between patterns of mortgage lending and socio-economic status, this paper also draws upon the 2011 National Statistics Socio-economic Classification (NS-SeC) to provide an indication of the composition of postcode sectors. The NS-SeC is based on the occupations of individuals and assigns all persons aged 16 to 74 to 1 of 8 NS-SeC categories, ranging from “(1) Higher managerial, administrative and professional occupations” to “(8) Never worked and long-term unemployed” (NOMIS, 2014). There are sub-levels to the classification, but in this paper, the eight top level categories are used, similar to the approach adopted by Bassett and Short (1980) in their analysis of mortgage lending and socio-economic status in the 1970s.

The NS-SeC is adopted because it remains an empirically robust and widely used indicator of socio-economic status (Chandola and Jenkinson, 2000), and it is available for the whole of Great Britain, unlike some possible alternative measures such as the English Indices of Multiple Deprivation (CLG, 2011). The NS-SeC classification is available at the postcode sector level, unlike most possible alternatives. Proprietary geodemographic classification systems (e.g. MOSAIC) may offer further insights, but to aid openness and replicability, the NS-SeC is used here. Another alternative source would be the 2011 Census Output Area Classification (OAC), but at the time of writing this classification is not yet available. Finally, the NS-SeC is based on the 2011 Census results and is therefore relatively up to date. The results below indicate that there are potentially significant spatial differences in lending by socio-economic class, particularly in relation to the practices of the seven different lenders.

4. Spatial variations in mortgage lending

In any nation, patterns of mortgage lending will vary across space, and there may be significant regional differences in the sources of available mortgage finance. In Great Britain, evidence of such variations has not historically been in the public domain, and it is only through the analysis small-area data that transparency in this area will

increase. The main empirical section of the paper therefore aims to contribute to knowledge in three simple ways. First, a geographical overview of patterns of mortgage lending across Great Britain is provided. Second, analysis of lending patterns associated with different mortgage lenders is offered as a simple means by which we can explore, for the first time, the geography of mortgage lending across Great Britain. Third, spatial variations in mortgage lending are explored in relation to the socio-economic status of residents at the postcode sector level. This analysis covers England and Wales only, owing to the unavailability of NS-SeC data at the postcode sector level in Scotland. The results demonstrate that there are clear differences between the socio-spatial lending patterns of different banks.

4.1 Spatial variations in mortgage lending across Great Britain

To provide a general overview across Great Britain, [Figure 1](#) shows the total value of mortgage lending in each postcode sector in map (a), in addition to an indicative “per household” figure in map (b). The total debt map is partly a reflection of the underlying urban spatial structure of Great Britain and partly a function of housing costs across the country, but it provides a useful visual demonstration of where housing debt (and wealth) is concentrated. Conversely, it also illustrates the large areas of the country where there are few outstanding mortgages or where few people live. The highest values are found in London and the south east of England in addition to the main cities and towns of Great Britain. The average household debt map (b) is based on total outstanding mortgage debt per sector, divided by the total number of households with a mortgage. The differing spatial patterns visible between [Figures 1\(a\) and 1\(b\)](#) are of course a function of the absolute versus relative nature of the underlying data. This helps highlight an important deficiency of the newly available mortgage lending data, in that it is not possible to rigorously assess the level of mortgage lending at the local level when we have no data on the total number of households responsible for the outstanding mortgage debt. Nonetheless, it does provide an insight into the concentration of the highest levels of mortgage debt in London and the south east in addition to some scenic coastal and rural areas such as the Cotswolds, the Norfolk Coast and the Lake District. A notable feature of this map is the extent to which the crescent of urban settlements comprising Liverpool, Manchester, Leeds and Sheffield display markedly different average mortgage debt levels compared to London and the south east, with the exception of a small area around Wilmslow, to the south of Manchester.

Within Great Britain, mortgage lending is distributed highly unevenly, even when accounting for the differing house prices and varying populations within postcode sectors, which average just under 7,000 residents. For example, the SW11 6 postcode sector near Clapham Common in south west London has the highest outstanding mortgage debt of any single area, at £649.4 million. In the 2011 Census, this area was home to 1,637 households with a mortgage, so this equates to nearly £400,000 of outstanding mortgage debt per household. By contrast, the L28 5 postcode sector in the Stockbridge area of Merseyside had a total outstanding debt of £918,380 at the end of June 2013. This was distributed between 50 households with a mortgage, for an average of just over £18,000. Given the incomplete mortgage lending dataset, and differing time periods covered by the data, these figures are offered as indicative rather than accurate household mortgage debt indicators, but the data do provide an initial insight into the wide geographical variations in housing wealth.

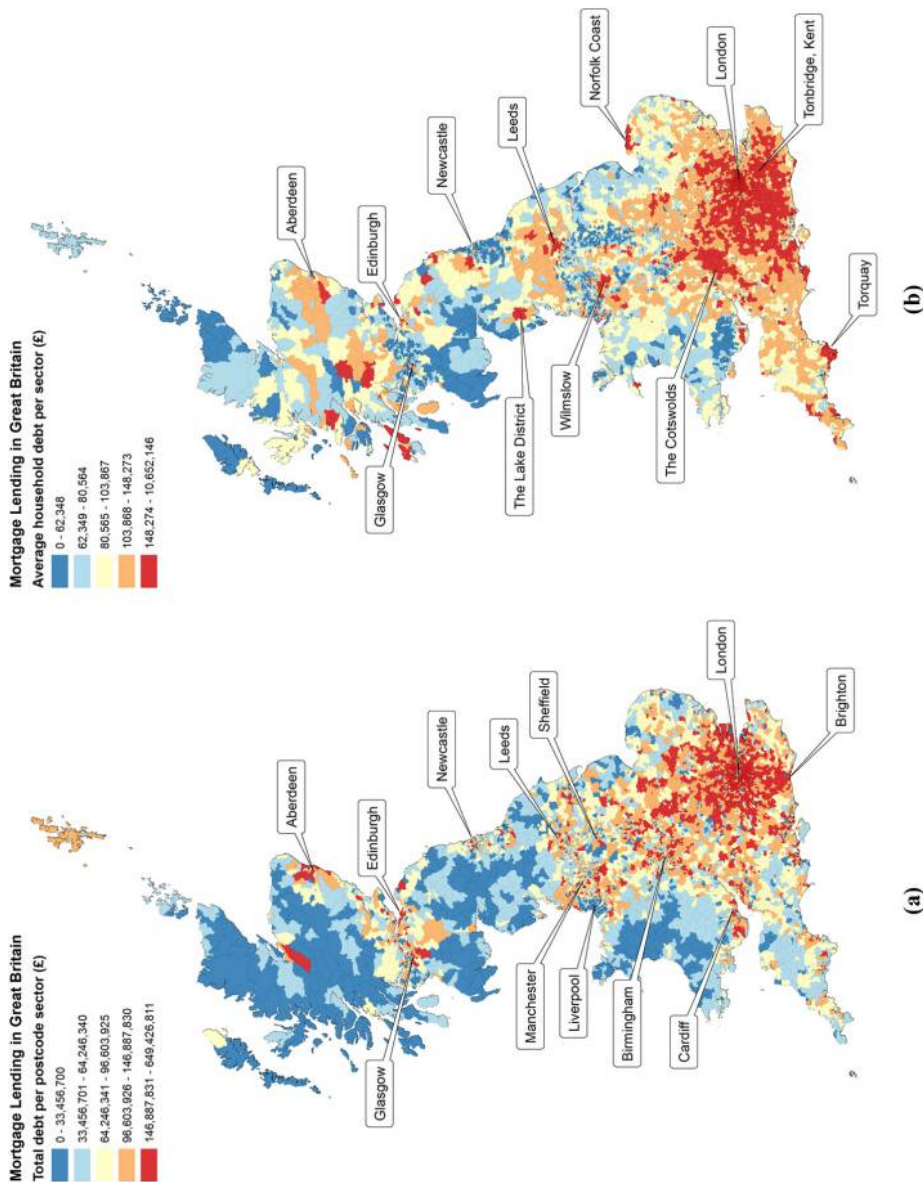


Figure 1. Total mortgage lending by postcode sector and indicative average household debt per sector

At the larger postcode area level (e.g. SW rather than SW11 6), mortgage debt is also disproportionately concentrated in London. The south west postcode area (SW) accounts for a total of £29.0 billion of outstanding mortgage debt. This represents 3.3 per cent of the total and almost 1 percentage point more than the entire Birmingham postcode area, at 2.4 per cent. Within these areas, the amount owed to different lenders varies considerably. To provide an illustration of this, Table I shows the 15 postcode areas in Great Britain with the highest levels of outstanding mortgage debt. All but four of these are in the south east of England, and across the board, there is considerable variation in the mix of lenders, relative to the average values for Great Britain. West London, for example, has higher than average levels of outstanding mortgage debt owed to Barclays, Clydesdale and HSBC, whereas Glasgow's share of outstanding debt owed to Barclays is significantly lower than average, at 5.1 per cent. By contrast, 45 per cent of outstanding mortgage debt in the Glasgow postcode area is owed to one lender (Lloyds).

The point here is that the amount of debt owed to different institutions will naturally vary across space but where there are significant deviations from the mean we must seek to ascertain why this might be. This new mortgage lending data source allows us to ask questions about the spatial variation in mortgage lending and, crucially, to determine who lends where; although without information on demand or internal bank policy, it is impossible to answer *why* this might be. The question of who lends where, *to whom*, is answered in this paper by reference to the Office for National Statistics' Socio-economic Classification, as explained later in this section.

4.2 Spatial variations in mortgage lending between lenders

On the face of it, the newly available data represent a significant advance for analysts trying to understand more about the spatial distribution of mortgage lending in Great Britain, yet it does not permit us to say much at all about transparency or lending practices. Whether supply meets demand (Benston, 1979) and whether this is a direct result of unfair lending practices by individual banks are questions which simply cannot be answered with this data. In the absence of accurate demand and "size of market" metrics, then, we have to use proxy data from the Census to provide some spatial standardisation, as shown above in Figure 1(b). What is possible, and useful, is to look at the differing patterns of mortgage financing between different banks in different areas.

These patterns are in part a result of factors such as historical branch and head office locations, regional specialisation and patterns of growth and acquisition associated with individual lenders. They may also be related to the different ways in which individual banking groups assess risk and allocate capital within local mortgage markets. Nonetheless, examining the differences between who lends where, and to whom, allows us to identify important differences between banks and help identify where lenders have particular spatial concentrations of debt and, conversely, where they do not. Once we know the answers to these questions, we can probe further and begin to question why such differences might exist. For this purpose, location quotients (LQs) have been calculated for individual postcode sectors for all seven lenders for which data are available. The spatial patterns associated with these lending LQs are evident in Figure 2 and are discussed in more detail below.

LQs have a long history of use in regional spatial analysis, particularly in relation to assessing areas of industrial specialisation and clustering (Crawley *et al.*, 2013).

Postcode area	Total debt (£ billion)	% of GB total	Barclays (%)	Clydesdale (%)	HSBC (%)	Lloyds (%)	Nationwide (%)	RBS (%)	Santander (%)
South West London (SW)	29.0	3.3	19.4	2.8	13.8	30.2	9.2	9.7	14.3
Birmingham (B)	21.0	2.4	10.3	0.4	8.0	42.7	15.0	9.5	14.0
South East London (SE)	19.0	2.2	15.0	1.5	10.3	33.5	11.8	9.3	18.7
North London (N)	17.9	2.0	17.7	1.6	10.4	33.1	11.6	8.9	16.7
Guildford (GU)	17.4	2.0	17.5	0.8	10.7	28.1	15.4	9.6	17.9
Reading (RG)	16.9	1.9	15.6	0.5	10.7	28.8	17.3	9.7	17.4
East London (E)	16.5	1.9	13.3	1.2	7.8	40.5	10.6	9.0	17.6
Kingston upon Thames (KT)	16.0	1.8	18.5	1.5	11.6	28.0	13.4	9.0	17.9
West London (W)	15.2	1.7	19.7	2.6	12.7	32.9	8.3	8.6	13.4
Bristol (BS)	14.5	1.7	11.1	0.3	9.0	37.2	15.6	12.1	14.8
Glasgow (G)	14.4	1.6	5.1	4.7	2.7	45.0	14.9	13.6	13.9
Edinburgh (EH)	14.0	1.6	6.2	3.0	4.7	42.8	13.7	16.1	13.3
Brighton (BN)	13.9	1.6	16.0	0.5	7.1	30.8	16.0	10.3	19.5
Chelmsford (CM)	13.5	1.5	17.2	0.4	8.6	29.9	15.2	9.7	19.1
Tonbridge (TN)	13.1	1.5	17.7	0.5	9.4	27.4	15.9	10.4	18.7
Great Britain	898.1	100.0	13.5	1.6	8.2	34.6	14.6	11.0	16.5

Table I.
Mortgage lending in
Great Britain: the 15
highest value
postcode areas

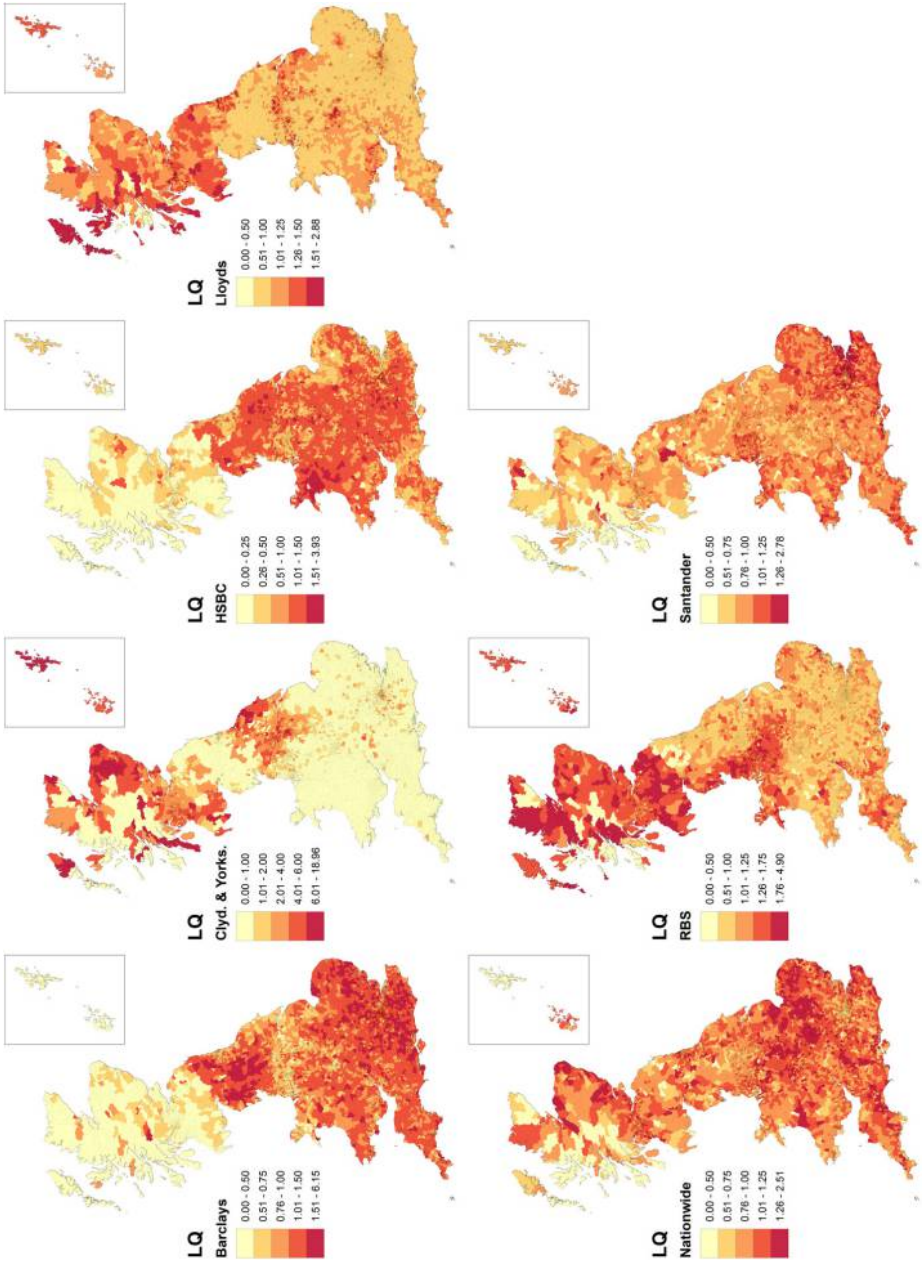


Figure 2.
Mortgage lending
location quotients
maps for seven major
lenders

However, the technique can also be applied to other kinds of data, and in this paper, it is applied to mortgage lending data at the postcode sector level, specified as follows:

$$LQ = \frac{d_i/d}{D_i/D}$$

where:

- d_i = total outstanding mortgage debt owed to a bank in a single postcode sector;
- d = total outstanding mortgage debt owed to all banks in a single postcode sector;
- D_i = total outstanding mortgage debt owed to a bank from all areas in Great Britain; and
- D = total outstanding mortgage debt owed to all banks from all areas in Great Britain.

As LQs increase above 1.0, this indicates that a bank “specialises” in lending in a particular postcode sector in the sense that its share of outstanding mortgage debt is higher than might be expected given the proportion of lending from a given bank within Great Britain. Lenders which are particularly closely associated with certain areas of the country have LQs well above 2.0 in some areas and well below 1.0 in others. This is not at all unusual given the spatially differentiated mortgage market within Great Britain.

The most obvious initial conclusion one can draw from the maps in [Figure 2](#) is, not surprisingly, that there are clear geographical differences and regional specialisations associated with mortgage debt in Great Britain. Most exceptionally, Clydesdale and Yorkshire bank’s concentration of lending in Scotland and Yorkshire reflects their strong national and regional affiliations. In several areas of Scotland and Yorkshire, for example, the LQ exceeds 10.0. At the other end of the scale, the lender with the most even spatial distribution across Great Britain is Nationwide, followed by Santander. A summary of the lending patterns associated with each lender is provided below, to give an overview of the most pertinent spatial patterns. In addition, the highest ten LQ locations for each lender are shown in [Table II](#).

- *Barclays*: The most obvious feature of the geography of mortgage lending associated with Barclays is that it lends comparatively little in Scotland, compared to most of England and Wales. The highest LQs in relation to Barclays (above 3.0) are to be found in the far north and south east of England. In total, seven of the top ten LQ values are to be found in London.
- *Clydesdale and Yorkshire*: Most lending from these banks is concentrated in Scotland and Yorkshire, so the map shows a significant concentration of lending in these locations. The areas with the highest LQs (above 6.0) are found mainly in north east Scotland and north east England.
- *HSBC*: The spatial patterning of LQs for HSBC indicates that it is mainly an English and Welsh lender. The highest LQs (above 3.0) are found in south east of England and north west of Wales. Overall, lending is significantly lower in Scotland. Seven of the ten highest LQs for HSBC are found in London.
- *Lloyds*: This bank accounts for the largest overall percentage of lending in Great Britain (35 per cent of lending covered in this release) owing to its acquisition in

Postcode sector	Postcode area	Locality*	LQ
<i>Barclays</i>			
SW1A 1	South West London	Central London	6.15
W1D 4	West London	Central London	4.94
N1C 4	North London	Camden	4.86
TA17 8	Taunton	Hinton St. George	3.25
WC1B 3	Western Central London	Central London	3.09
SW1H 9	South West London	Victoria	3.07
SW1A 2	South West London	Victoria	3.04
FK20 8	Falkirk	Crianlarich	3.03
W1D 3	West London	Central London	2.99
CO6 5	Colchester	Polstead	2.96
<i>Clydesdale and Yorkshire</i>			
TS6 6	Cleveland	Middlesbrough	18.96
PA65 6	Paisley	Craignure	18.73
PA75 6	Paisley	Tobermory	17.55
KW9 6	Kirkwall	Brora	15.95
PA72 6	Paisley	Salen	14.33
YO18 8	York	Pickering	14.18
AB34 4	Aberdeen	Tarland	12.75
YO14 9	York	Filey	12.11
AB31 6	Aberdeen	Boghead	12.03
YO18 7	York	Pickering	11.56
<i>HSBC</i>			
EC1Y 2	East Central London	Hoxton	3.93
E14 5	East London	Canary Wharf	3.64
LL51 9	Llandudno	Garndolbenmaen	3.64
LL48 6	Llandudno	Penrhyndeudraeth	3.30
W1H 1	West London	Central London	3.26
SW3 4	South West London	Chelsea	3.11
EC1R 0	East Central London	Finsbury	3.02
SW11 6	South West London	Clapham	3.02
WC1X 8	Western Central London	Central London	3.00
HP16 9	Hemel Hempstead	Prestwood	2.93
<i>Lloyds</i>			
CF24 5	Cardiff	Splott	2.88
L1 0	Liverpool	Central Liverpool	2.56
BS1 2	Bristol	Central Bristol	2.47
PA41 7	Paisley	Ardminish	2.45
B2 4	Birmingham	Central Birmingham	2.41
PA46 7	Paisley	Bunnahabhain	2.33
IV44 8	Inverness	Ferindonald	2.32
BD1 1	Bradford	Central Bradford	2.25
HD1 2	Huddersfield	Huddersfield	2.24
OL1 1	Oldham	Oldham	2.20

Table II.
The ten highest
lending LQs for each
lender

(continued)

Postcode sector	Postcode area	Locality*	LQ
<i>Nationwide</i>			
NN2 8	Northampton	Northampton	2.51
BH2 6	Bournemouth	Bournemouth	2.42
SN1 7	Swindon	Wroughton	2.36
NN3 7	Northampton	Moulton	2.35
L5 2	Liverpool	Kirkdale	2.30
GU11 2	Guildford	Farnborough	2.24
NN5 6	Northampton	Northampton	2.22
NN3 6	Northampton	Northampton	2.18
DE1 2	Derby	Central Derby	2.09
DE24 5	Derby	Alvaston	2.07
<i>RBS</i>			
HS9 5	Outer Hebrides	Castlebay	4.90
PH41 4	Perth	Mallaig	4.39
PA32 8	Paisley	Inveraray	3.78
L5 3	Liverpool	Everton	3.78
M50 1	Manchester	Salford Quays	3.74
S32 2	Sheffield	Grindleford	3.55
IV53 8	Inverness	Achmore	3.46
IV26 2	Inverness	Ullapool	3.33
IV40 8	Inverness	Kyle of Lochalsh	3.09
PA77 6	Paisley	Hynish	3.08
<i>Santander</i>			
SO14 7	Southampton	Central Southampton	2.78
DN1 1	Doncaster	Doncaster	2.62
L28 3	Liverpool	Stockbridge Village	2.42
NG1 2	Nottingham	Central Nottingham	2.40
L32 2	Liverpool	Kirkby	1.97
L4 7	Liverpool	Anfield	1.91
SS8 0	Southend-on-Sea	Canvey Island	1.90
L32 8	Liverpool	Kirkby	1.88
SE25 5	South East London	South Norwood	1.80
L11 8	Liverpool	Tuebrook	1.79

Note: *Locality provides more detail on the precise location of each postcode sector, as identified by Geolytix, 2013

Table II.

2009 of the former Halifax and Bank of Scotland company, HBOS. The higher LQs evident in Scotland are a direct result of the historical connection with the Bank of Scotland, whereas the areas of higher LQs in the north of England are linked to the legacy of lending associated with Halifax. The ten highest LQs are, however, located across all nations of Great Britain.

- *Nationwide*: A building society rather than a bank, Nationwide lives up to its name in relation to the lending patterns, as shown in Figure 2. There are concentrations of higher LQs in central and eastern England, but overall spatial patterns of lending are much more balanced. The highest LQ in Great Britain is

only 2.5. Four of the highest ten LQs are to be found in Northampton, with a further two in Derby.

- *RBS*: The Royal Bank of Scotland's lending is mainly concentrated in Scotland. However, RBS exhibits high LQs in much of north west of England, north Wales and the south west of England. Seven of the ten highest LQs are located in the Highlands and Islands of Scotland.
- *Santander*: Lending patterns for Santander (formed through the acquisition of former building societies) are similar to those exhibited by Nationwide, with no clear break between Scotland and the rest of Great Britain. The highest LQs are found in the Scottish borders, and to the south east and north east of London, but five of the ten highest LQs are in the Liverpool postcode area.

As one might expect, there are obvious spatial patterns associated with individual lenders. This analysis has never before been possible in Great Britain, so this simple LQ approach is part of the contribution of this paper. However, this does not address the issue of the link between area types and mortgage financing of the kind highlighted in previous studies on financial exclusion (Jones and MacLennan, 1987; Tootell, 1996). A study of this kind is not possible with the current data, because it does not include information on the level of demand or in relation to the profiles of mortgage applicants. Nonetheless, it is possible to examine more closely the connections between the socio-economic characteristics of individual postcode sectors and the level of lending by different banks. This is the subject of the next section.

4.3 Spatial variations in mortgage lending and socio-economic status

The previous section demonstrated what we might expect; that banks lend more in some areas than they do in others. The focus here, instead, is on the question of whether some banks lend more than others in poorer neighbourhoods. This is answered by comparing the level of lending in postcode sectors to the percentage of persons who fall into each of the eight major groups of the Office for National Statistics' Socio-economic Classification. In Table III, a correlation table illustrates the relationship between the percentage of persons in each postcode sector in the eight NS-SeC classes, and the percentage of mortgage debt owed to each bank in the same areas is presented.

What this analysis shows is the lending share by institution in different kinds of area within England and Wales. Of particular interest here are the very high positive correlations between the percentage of persons in NS-SeC Groups 1 and 2 (higher and lower managerial) and the lending share for Barclays and HSBC. This contrasts sharply

Table III.
Correlation table:
outstanding
mortgage debt by
NS-SeC groups and
individual lenders

NS-SeC group	Barclays	Clydesdale	HSBC	Lloyds	Nationwide	RBS	Santander
1 – Higher managerial	0.62	-0.01	0.71	-0.61	0.03	-0.02	-0.20
2 – Lower managerial	0.60	-0.06	0.64	-0.71	0.21	0.01	-0.06
3 – Intermediate occupations	-0.03	-0.14	-0.07	-0.30	0.41	0.04	0.40
4 – Small employers	0.47	-0.15	0.24	-0.39	0.07	0.04	-0.02
5 – Lower supervisory	-0.49	0.04	-0.52	0.32	0.23	0.10	0.14
6 – Semi-routine occupations	-0.59	0.03	-0.62	0.50	0.08	0.05	0.15
7 – Routine occupations	-0.62	0.13	-0.60	0.61	-0.05	0.02	0.04
8 – Long-term unemployed	-0.44	0.10	-0.41	0.67	-0.43	-0.17	0.04

with the figures for Lloyds, which show the exact opposite to be true. At the other end of the socio-economic scale, there are strong negative correlations between the percentage of persons in NS-SeC Groups 7 and 8 (routine occupations and unemployed) and the lending share for Barclays and HSBC. Once again, the nature of the relationship is reversed for Lloyds. Also of note here is the extent to which NS-SeC Group 3 (intermediate occupations) appears to display notably anomalous correlation coefficients for most lenders.

A simple interpretation of this data would be that Barclays and HSBC favour lending in comparatively wealthier areas rather than in less prosperous areas, whereas Lloyds represents the opposite situation. It would be more accurate, however, to state that in more socio-economically buoyant areas, both Barclays and HSBC own a higher proportion of total outstanding mortgage debt than the other lenders (i.e. they have a greater market share), whereas in less prosperous areas, Lloyds in particular is owed a higher proportion. This may be related to the geography of branch locations and the historical distribution of these banks' customer bases, but without additional information on the volume and quality of loan applications, or the way individual banks assess risk, it is only possible to speculate on the reasons for this situation.

Ultimately, we do not know whether Barclays and HSBC lend less in more deprived areas because fewer people from these areas apply for mortgages or because of some form of risk-based decision-making process, or some combination of the two. The data certainly do not allow us to make any claims about financial exclusion or redlining, but at the very least, this initial data offering allows us to ask pertinent questions about the geography of mortgage finance in Great Britain, particularly in relation to lending in less prosperous areas. It is perhaps useful, instead of speculating as to the existence of exclusionary practices, to provide some more localised examples of different lending patterns in a single postcode area, as illustrated in the next section for the Liverpool postcode area.

4.4 Differential lending patterns in the Liverpool (L) postcode area

The case of the Liverpool (L) postcode area provides a useful example of the distribution of mortgage finance between lenders across all areas and in more disadvantaged neighbourhoods. The percentage of persons in each postcode sector who are in NS-SeC Groups 7 and 8 ("routine occupations" and "never worked, or long-term unemployed") is used here as a measure of local disadvantage to assess lending in poorer areas of Liverpool. The 136 postcode sectors (out of 395) in which the proportion of persons in NS-SeC Groups 7 and 8 is above 25 per cent are mapped in [Figure 3](#), in addition to the lending LQs of six different lenders with mortgaged stock in the area.

The spatial patterns on display reinforce the message which emerged from [Table III](#), as both Barclays and HSBC appear to lend disproportionately less in areas where there are a higher percentage of poorer residents. Once again, the opposite seems to be true of Lloyds, and in fact amongst the 136 postcode sectors analysed, it accounts for almost half of known outstanding mortgage debt, which totals just over £1.7 billion across all banks. Both Barclays and HSBC have a lending share well below their national average (13.5 vs 5.4 per cent and 8.2 vs 4.2 per cent, respectively), as does Nationwide (14.6 vs 8.1 per cent). However, RBS (11.0 vs 11.6 per cent), Santander (16.5 vs 18.5 per cent) and Lloyds (34.6 vs 48.6 per cent) all have a lending share around or above their national average.

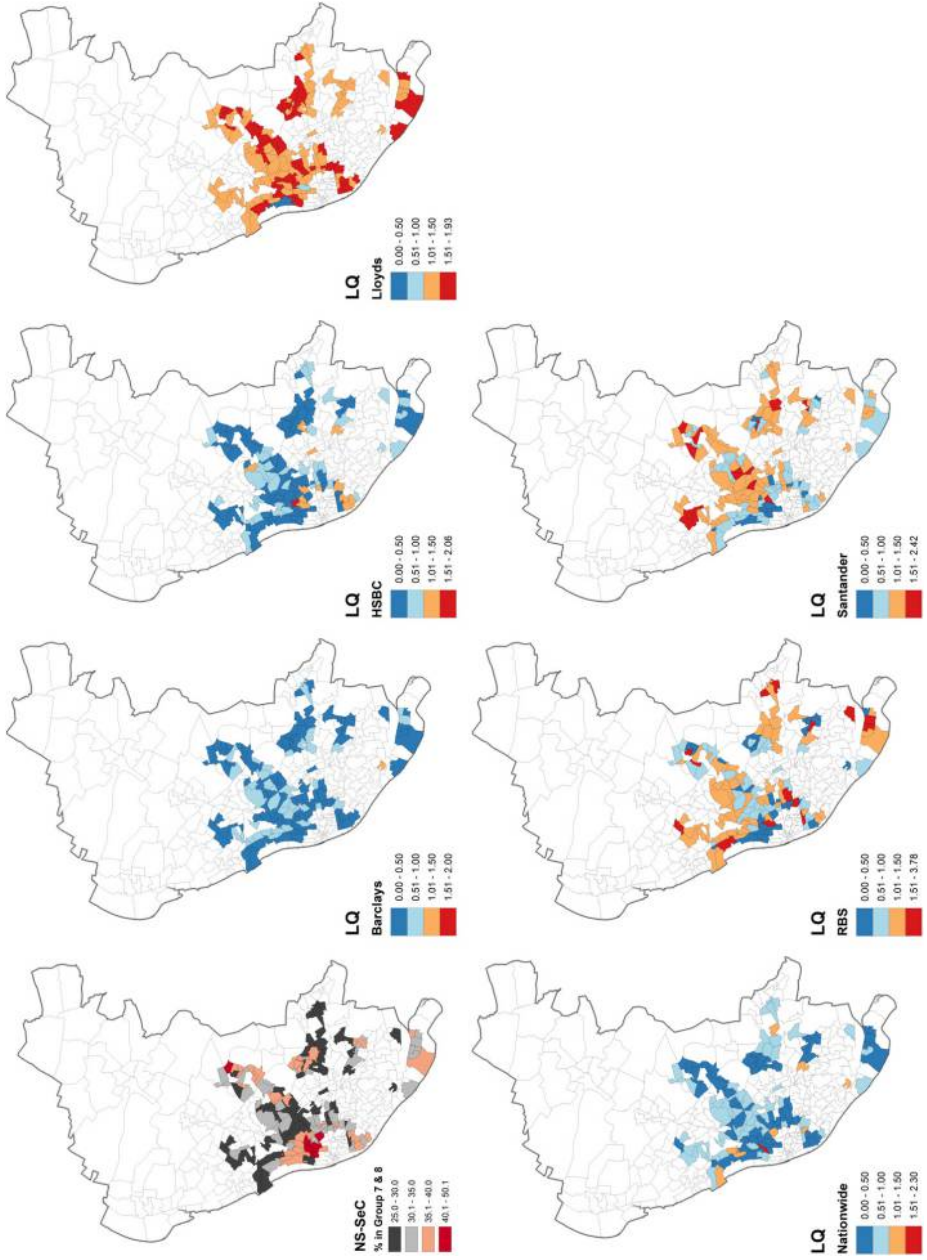


Figure 3. Location quotient maps for six major lenders in the Liverpool (L) postcode area: where NS-SeC Groups 7 and 8 per cent > 25

To provide a more fine-grained analysis at the local level, and by means of assessing differences in lending, two banks were selected for further analysis relative to average house prices in each postcode sector (calculated here by using HM Land Registry price paid data). HSBC and Nationwide exhibit very different lending profiles in relation to socio-economic status, but by comparing how they lend across the L postcode area in general, and how they lend in the poorest areas, we might be able to identify some important differences. If a bank were to use lending criteria based solely on loan to value and debt coverage ratios, without taking into account wider socio-economic or area characteristics, it is reasonable to assume that there would be a relationship between lending and property values. Such a relationship could of course be negative or positive, but we would expect the relationship to remain fairly consistent across all area types, and this is indeed the case when we explore the relationship between lending LQs and property values for Nationwide in all Liverpool postcode areas (Figure 4(a)) and those areas where 25 per cent or more are in NS-SeC Groups 7 or 8 [Figure 4(b)]. In both cases, the relationship is positive and the R^2 value increases slightly in areas with a higher proportion of NS-SeC Groups 7 or 8 residents.

The situation for HSBC is more complex. The relationship between lending and property values is much stronger across all Liverpool postcode sectors, with a higher R^2 value (0.33), as shown in Figure 5(a). In contrast to the situation for Nationwide, however, the nature of the lending–value relationship changes quite dramatically for those Liverpool postcode sectors with a high proportion of poorer residents. In Figure 5(b), we can see that the relationship changes from a positive to a marginally negative one and that the vast majority of areas (83 per cent) have a lending LQ below 1.0. It is not possible to say more about the possible reasons for these relationships, but at the very least, it highlights important differences in mortgage lending within and between areas. This situation could lead to accusations of unfair financial rationing, but in the absence of additional information, this would be unsubstantiated. Clearly, there are significant differences at the local level in the lending share between banks in socio-economically disadvantaged areas, and these differences require further investigation.

5. Conclusions and recommendations

If the purpose of releasing this new mortgage lending dataset was to increase transparency in the banking sector and to help “highlight those areas where larger banks are often not willing to lend” (HM Treasury, 2013), then it has been, at best, a partial success. We do now know that some banks lend less in some poorer areas, but we are not able to tell whether they are “not willing” to do so. Providing an answer to this pressing question would require the release of additional data, of the kind advocated by Friends Provident in their 2012 call for a UK equivalent of the US Home Mortgage Disclosure Act of 1975 (Dayson *et al.*, 2012).

The contribution here is instead focused on the first stage of such an analysis by providing some initial evidence of the different geographical lending patterns associated with individual lenders, in line with the claim that “the most that can be demonstrated is that a particular lender (or subset of lenders) serves an area differently” (Benston, 1979, p. 147). This may previously have been known anecdotally or within the banking sector more widely, but until now, it has not been possible to provide a detailed mapping of lending at the local level across Great Britain. The additional analysis in the

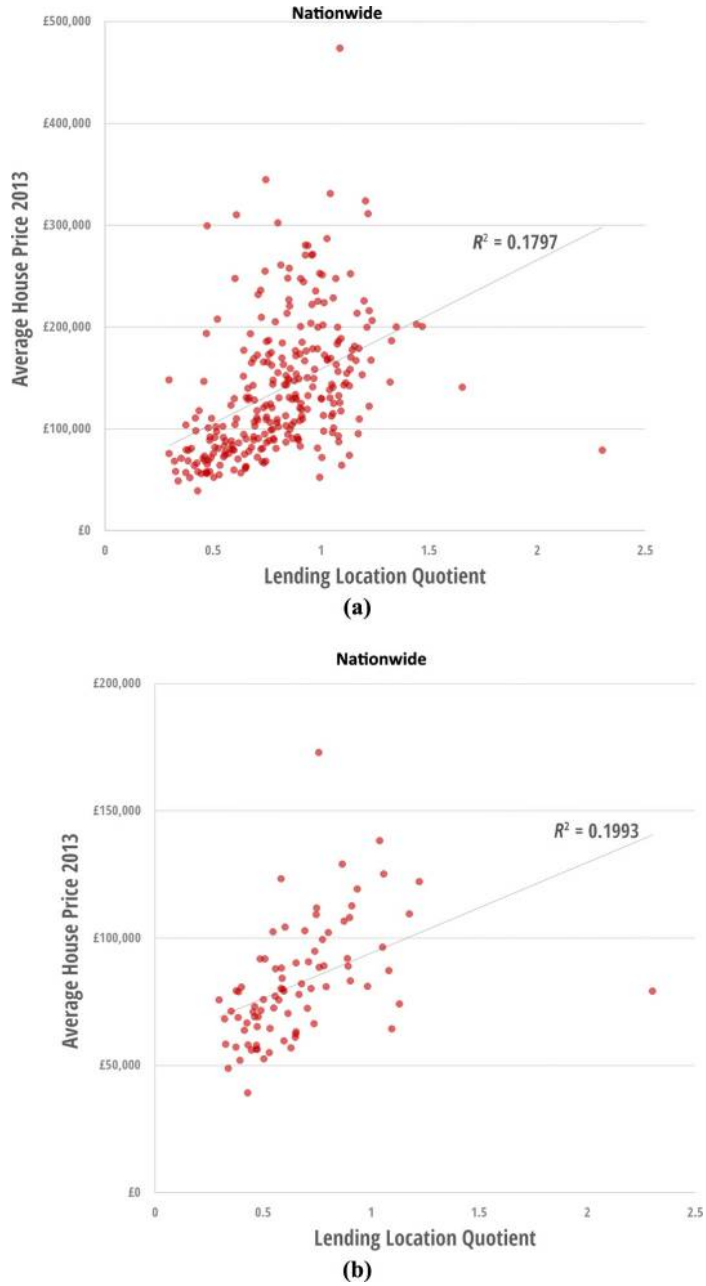


Figure 4.
(a) Lending versus property value in Liverpool (L) for Nationwide; (b) Lending versus property value in Liverpool (L) for Nationwide (poorest areas)

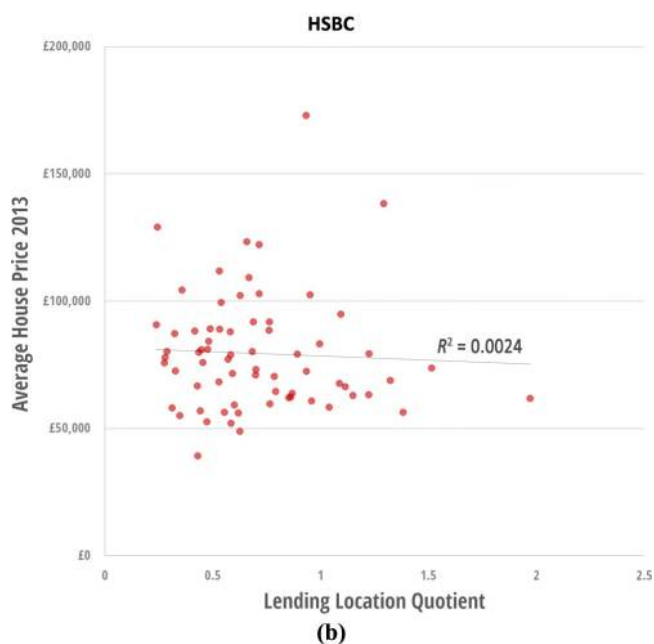
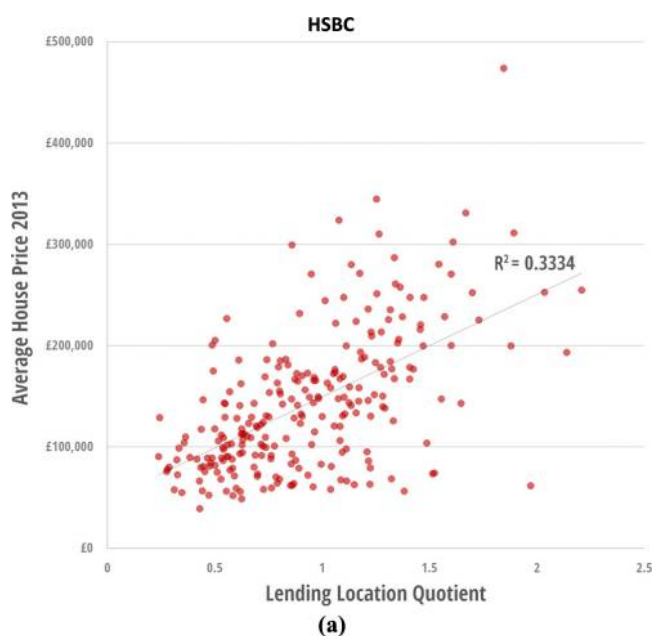


Figure 5. (a) Lending versus property value in Liverpool (L) for HSBC; (b) Lending versus property value in Liverpool (L) for HSBC (poorest areas)

Liverpool postcode area does demonstrate, however, that where some banks appear to have similar lending patterns for all types of area, others exhibit different lending patterns in more deprived neighbourhoods.

It is hoped that this initial analytical contribution will lead to more critical questioning of where banks lend money and a move towards true transparency in relation to their reasons for doing so. The current situation leaves open the possibility that lenders may be accused of exclusionary practices such as redlining or predatory practices such as “sub-prime lending” in more deprived areas (Munro *et al.*, 2005). Thus, to help summarise the analysis and move the research agenda forward, a number of key messages are offered here, with key policy recommendations to end:

- From the empirical analysis presented above, it is clear that the geography of mortgage lending in Great Britain is highly uneven. This is to be expected in a variegated mortgage market, but this paper, for the first time, provides a detailed overview of lending across Great Britain in relation to total debt and in relation to individual lenders.
- Perhaps more pertinently, there are significant differences in the lending patterns associated with individual lenders at the local level across Great Britain. Once again, this is not surprising, but the evidence presented above suggests that there are clear differences in the lending patterns of different banks *vis-à-vis* the socio-economic composition of individual areas. In particular, it would appear that some lenders lend disproportionately less in poorer area.
- When we examine different types of areas based on socio-economic status *and* house prices, there still appear to be important differences in lending patterns between banks. This may mean that certain institutions assess risk differently in certain locations or it may mean that they deliberately lend less in poorer areas. In the absence of a full dataset, however, such questions cannot be answered but it remains an important policy question.
- Despite the spatial patterns identified above in relation to lending in poorer areas, we cannot say that any of this constitutes evidence of financial exclusion. This *may* be occurring, but the data do not allow us to make such claims. Crucially, however, the data do not allow us to rule out this possibility and in an industry which has frequently been maligned in recent years, providing greater transparency in this domain would be particularly welcome.
- Given the unclear situation in relation to the evidence, or lack of it, of exclusionary practices in the mortgage market, a logical next step would be to compel – or strongly encourage – individual banks to go one step further and release data relating to the number of mortgages and applications in each postcode sector, in a manner similar to that currently practiced in the US. Data from a much wider range of lenders should also be incorporated into future releases.
- This initial data offering is both very welcome and highly useful, yet it remains some way short of meeting its transparency objectives. At present, the situation is more one of opaqueness than transparency. If the government wish to provide analysts, activists and communities with the tools to properly assess the fairness, equity and spatial justice of mortgage lending in Great Britain, they must go one step further.

If we return to the claim from HM Treasury that the release of the data would “highlight those more deprived areas where larger banks are often not willing to lend”, then it is clear that this is false. It has been possible to identify areas where there is less lending but it is demonstrably *not* possible, without demand metrics, to say if they are “not willing” to do so. To remedy this situation, I finish with two simple policy recommendations. First, government must encourage, or compel, banks to publish more demand data, ideally in a similar way to the US under the provisions of the Home Mortgage Disclosure Act of 1975. Given the current situation, this may require new UK banking disclosure legislation of the kind recommended by Friends Provident (2012). Second, even in the absence of demand metrics, identifying those areas where lending is very low (for mortgages and other lending data now available) and which banks are responsible could be a useful way for the hundreds of local authorities across Great Britain to hold financial institutions to account for the ways in which they often appear to restrict finance in the poorest neighbourhoods. If the current situation persists, it will leave financial institutions open to charges of financial exclusion and even redlining when in fact there may be perfectly rational explanations for lending patterns. For the time being, however, we must reserve judgement in relation to the underlying reasons behind the geography of mortgage lending in Great Britain.

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