

The mortgage affordability paradox updated

Rob Thomas, Principal Researcher, Intermediary Mortgage Lenders Association (IMLA)

June 2024

Executive summary

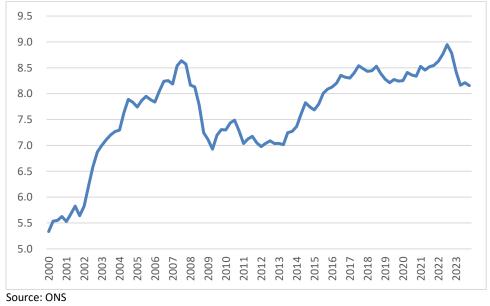
- In November 2021, IMLA published a paper entitled *The mortgage affordability paradox*, highlighting the fact that, despite a record house price to earnings ratio of 8.8, mortgage payments relative to earnings were close to their all-time lows. This paper provides an update to assess the impact of the higher interest rate environment we have entered.
- The long-term trend of higher house prices relative to earnings coupled with improved affordability, driven by lower mortgage rates, has reversed. In 2020, interest and capital payments as a percentage of home-buyer income reached a record low of 16.9%. This figure rose to 20.8% in 2023, a level it remained at in February 2024, 11% above its long-term average.
- The regional picture has changed a little in recent years, with the affordability gap closing slightly between London and the South East and the rest of the country. The house price to earnings ratio peaked in London in Q4 2016 at 12.9 but was down to 10 by Q2 2023. Over the same period this ratio has remained broadly unchanged in Scotland, Yorkshire and the Humber, the North East, West Midlands and South West and risen in the North West, East Midlands, Wales and Northern Ireland.
- Our 2021 report found that buying was cheaper than renting but this has reversed in most regions due to higher mortgage rates. Nationally, the cost of renting and buyers' mortgage interest costs are broadly equal but once capital repayments are included, buying appears more expensive.
- We estimate that the cumulative shortfall in first-time buyer numbers since the financial crisis reached 3.1 million by the end of 2023. Despite strong affordability in the 2013-2022 period, first-time buyer numbers failed to pick up as previous trends would have suggested. Now, with the payment burden above its long-term average, first-time buyer numbers have fallen back.
- Lenders have innovated to meet the challenges of stretched affordability. 100% products include Skipton Building Society's Track Record Mortgage, Halifax's Family Boost and Barclays' Family Springboard. Accord/Yorkshire Building Society has introduced a 5% deposit mortgage, and there is also a range of 5% deposit schemes offered by other organisations.
- The future path of mortgage affordability will depend overwhelming on the path of interest rates. Interest rates are expected to fall from current levels, which should underpin an improvement in affordability going forward.

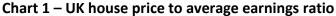
1. Measuring housing affordability

1.1 House price earnings ratio

Three years ago, when Bank of England Bank Rate was still 0.1%, IMLA published a report entitled *The mortgage affordability paradox*, which contrasted the high level of house prices relative to earnings with the low level of mortgage payments borrowers were making thanks to record low mortgage rates. This paper considers how the events of the past three years have impacted mortgage affordability and how this is affecting the prospects for first-time buyers and existing mortgage holders.

Chart 1 shows the ratio of average UK house prices to average full-time seasonally adjusted earnings. In the mid-1990s this ratio was little more than four times but in the following decade house price gains consistently outstripped earnings growth, pushing the ratio above 5 by 2000 and up to 8.6 in the second half of 2007. After falling back during the financial crisis of 2008-9, the ratio resumed its upward trend, peaking at a new high of 8.9 in the third quarter of 2022 before falling back to 8.2 by Q4 2023. Between the start of 2000 and the end of 2023, average earnings rose 119% while over the same period house prices rose twice as fast at 234%.





Traditionally, the house price to earnings ratio has been the most widely used measure of housing affordability. The sharp rise in the ratio during the first half of the 2000s led some experts to conclude that housing had become overvalued and was likely to see a correction. But how useful is this measure of housing affordability? The house price earnings ratio suffers from one clear deficiency: it compares an asset price to an income flow, failing to take account of the level of interest rates and the actual monthly cost of owner-occupation. Some economists have argued that this should not matter because in theory capital and income are interchangeable i.e. an environment of high interest rates and high house price inflation is equivalent to one with low interest rates and low inflation. But in practice, when interest rates are high, affordability constraints will impact what customers can afford to pay each month and any offsetting capital gains are not immediately available to service a mortgage debt. So the house price earnings ratio cannot be considered the most accurate guide to whether housing is overpriced.

1.2 Interest payments as a percentage of income

To get a picture of the actual financial burden homeowners face we need to examine the relationship between average incomes and mortgage payments as, for most home buyers, mortgage payments form by far the largest component of the cost of buying a home. Chart 2 shows the proportion of average monthly income consumed by mortgage interest payments across all households buying a home in each period. Because it measures the interest burden at the point of purchase rather than the cost across all existing homeowners, it is not distorted by the fact that many existing homeowners have modest mortgages taken out years ago or have already paid off their mortgage.



Chart 2 – Mortgage interest as % of income (all home purchasers)

Comparing Charts 1 and 2, it is clear that the broad trends are heading in opposing directions. So despite the fact that house prices have risen relative to incomes, the burden of interest payments has been on a downward trend over the past quarter century, with this burden only rising again recently. What explains this paradox? The transition from high to low interest rates since the early 1990s is at the root of rising house prices as it has reduced the cost of mortgage borrowing but it also explains much of the gains in other asset markets where supply is fixed to some degree, including assets ranging from equities to art to classic cars.

Source: UK Finance

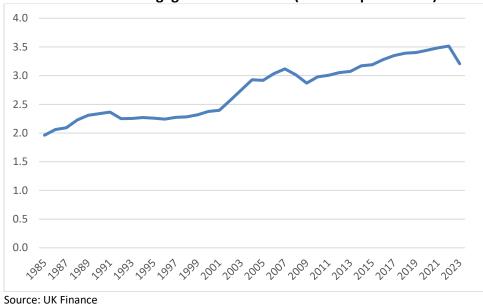
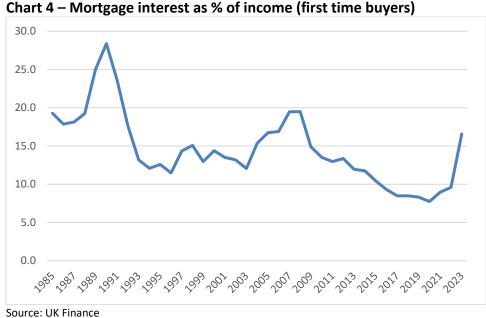


Chart 3 – Ratio of mortgage loan to income (all home purchasers)

Falling mortgage rates increase the amount people can borrow for any given monthly payment, increasing the potential spending power of house purchasers. In a market with limited supply such as housing, this increased spending power would be expected to push up prices, meaning that borrowers will be faced with having to borrow more to out-compete other interested buyers. Chart 3 illustrates how the average amount borrowed has indeed increased relative to incomes as house prices have risen, with the ratio of mortgage debt to income at purchase going from 2.25 times in 1992 to a peak of 3.52 by 2022, a 56% rise, before falling back sharply to 3.21 in 2023 as higher mortgage rates constrained buyer affordability.

Yet as Chart 2 illustrated, despite this substantial increase in borrowing relative to income, mortgage payments for new home purchasers have been on a downward trend, indicating that proportionately, the fall in mortgage rates has exceeded the rise in house prices. Indeed, the decline in mortgage rates has been so dramatic that as recently as 2021 the average first year mortgage payment of £5,330 was less than the £5,460 figure recorded in 1990, when mortgage rates peaked. This is despite house prices having risen by nearly 500% between 1990 and 2021, but by 2023 the average first year mortgage repayment had risen to £11,030.

The above discussion relates to all home purchasers but first-time buyer data shows very similar trends. For example, as Chart 4 shows, between 1985 and 2020, interest payments as a percentage of income declined from 19.3% to 7.8% for first-time buyers compared to 19.0% to 7.1% for all borrowers with loan to income also showing very similar trends for first-time buyers and moving homeowners.



What Charts 2 and 4 show is that 2020 was a high point for mortgage affordability. In 2021 and 2022, interest payments as a percentage of new borrower income rose because of moderately rising mortgage rates and increasing house prices relative to incomes. But these gradual changes were replaced, after the mini-budget of September 2022, with a more dramatic rise in borrowing costs (see Chart 5). This had a much more substantial impact on buyer affordability, putting downward pressure on the house price to earnings ratio but not nearly enough to prevent a steep rise in buyer mortgage interest payments as a percentage of income.

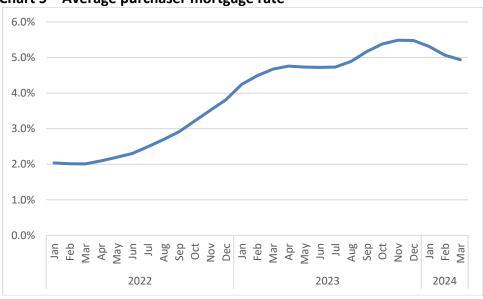


Chart 5 – Average purchaser mortgage rate

Source: UK Finance

By 2023, moving homeowners had seen the share of their income taken in mortgage interest payments rise to close to the long-term (1985-2023) average. But for first-time buyers, without the cushion of accumulated equity from rising house prices,

interest payments reached 16.6%, well above the 14.6% long-term average. But despite weaker affordability, house prices have stabilised and may even rise slightly over the course of 2024, suggesting that prospective home buyers may have to wait until there is a meaningful easing of interest rates before seeing a significant improvement in affordability.

1.3 Factoring in capital repayments

The overwhelming majority of new homeowner purchase loans are made on a capital and interest basis. So, to understand how affordability is changing it is necessary to examine not just the relative size of interest payments but also that of combined interest and capital. As capital repaid moves inversely to the mortgage rate, it has the effect of dampening the impact of interest rate changes (see Chart 6). For example, the burden of interest payments as a percentage of income was 69% higher in 2023 than 2022. But the combined capital and interest burden was only 16% higher.

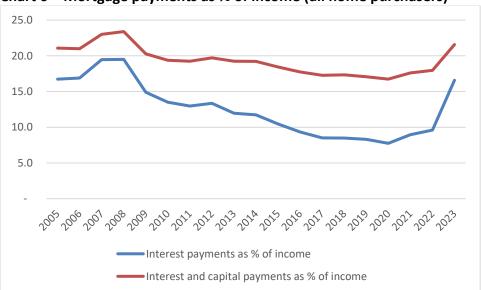


Chart 6 – Mortgage payments as % of income (all home purchasers)

Source: UK Finance

Which measure of affordability is likely to have the greater impact? Borrowers only see their total monthly mortgage payment and lender affordability assessments are also based on capital and interest, so it seems likely that this measure will have the greatest effect. This may be part of the explanation as to why house price rises never fully offset lower mortgage interest during the 2008-22 period. It should also mean that borrower demand is not hit as hard as the rise in mortgage rates might suggest. Indeed, the impact of higher interest rates from later 2022 had a significantly greater impact on the buy-to-let market as this market depends predominantly on interest-only loans.

1.4 Adjusting for non-purchasers

Measures of affordability that relate to actual purchasers suffer from one serious disadvantage: those that buy are a self-selected group that is not necessarily representative of the wider population. The profile of the average buyer has changed as house prices have risen and deposit requirements have increased. Today, a broader range of the populace lack the resources to buy their first home either because their income would be too stretched or because they need a larger deposit. Moreover, because buyers have been putting down proportionately higher deposits since the financial crisis, this alone will reduce the recorded cost burden of their mortgage payments, making homeownership appear cheaper.

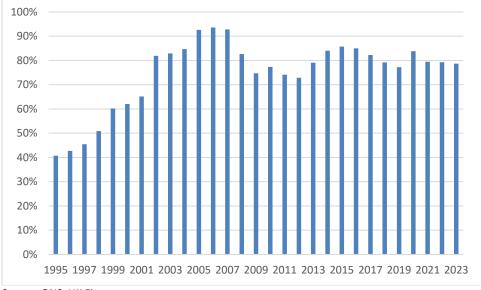


Chart 7 – Premium of first-time buyer income to average UK earnings

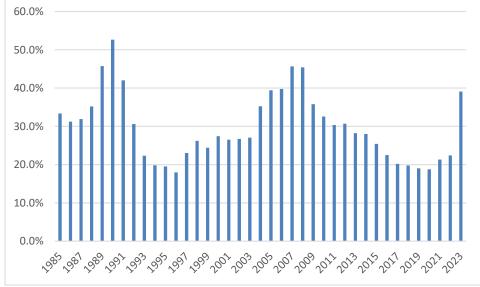
Source: ONS, UK Finance

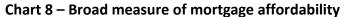
To see how affordable housing is for the average person, rather than those who actually bought, we need to compare the income reported by first-time buyers on their mortgage applications with ONS data on average UK full-time earnings as Chart 7 does. The consistently higher level of income reported by first-time buyers that Chart 7 shows is unsurprising given that this includes the incomes of all of the applicants on a mortgage so, for example, where a couple is buying their incomes will be combined.

But what is significant about the data shown in Chart 7 is the way that first-time buyer incomes raced ahead of average UK wages between 1995 and 2005, a period of rapidly rising house prices. This suggests that as house prices rose the breadth of the population who could afford to buy narrowed, which is supported by data on the number of first-time buyers which fell from over 500,000 a year in the late 1990s to an average of only 370,000 a year between 2003 and 2007.

Since the measures of affordability used in Sections 1.2 and 1.3 use data from actual home purchasers, it can provide a distorted view of how affordable homeownership

is to the broader public during periods such as 1995-2005, when first-time buyers became on average a comparatively wealthier, less representative cohort of people. However, we can calculate how affordability has changed for the average earner by taking the average mortgage rate for first-time buyers, multiplying it by the average first-time buyer property price and comparing this to this typical worker's earnings. This strips away distortions created by changing relative deposit sizes and changing in the relative income of actual first-time buyers.





Source: ONS, UK Finance

The results, which we term the broad measure of mortgage affordability, are shown in Chart 8. What we see from this chart is that, over the past 40 years, the UK has experienced three spikes in mortgage costs, peaking in 1990, when base rate reached 15% to control inflation; 2007, after a long period of inflating house prices; and finally 2023 when, after another long period of rising house prices, base rates were rapidly raised to fight inflation, albeit to a more modest 5.25%.

Two periods stand out as having provided excellent affordability, with the average worker needing to spend less than 30% of their income to meet the mortgage interest on the full value of the average first-time buyer property: 1993-2003 and 2013-2022. Chart 9 shows the number of first-time buyers plotted against broad affordability. It shows that improved mortgage affordability does help to boost the number of first-time buyers entering the market. But despite similar levels of affordability in 2013-2022 and 1993-2003 on this measure, first-time buyer numbers were significantly lower, averaging 330,000 a year in the latter period against 500,000 in the former.

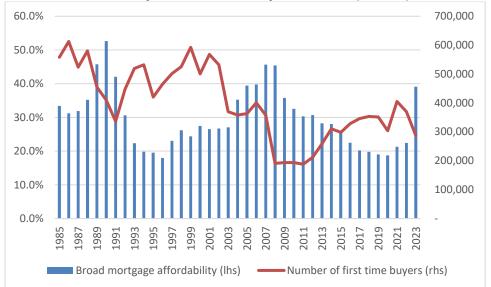
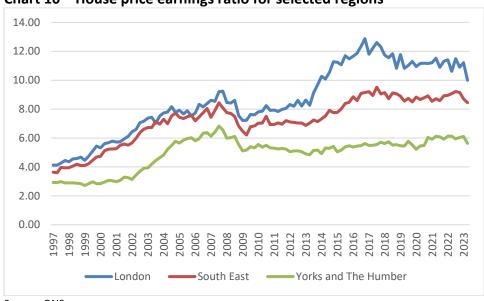


Chart 9 – Affordability and first-time buyer numbers (annual)

Why did the 2013-2022 period not see a larger resurgence in first-time buyer numbers given the low cost of servicing a mortgage? One possible explanation is the wide-ranging regulation that was put in place in response to the financial crisis. Higher capital requirements have reduced lender appetite for high LTV lending, particularly above 95%, while stricter affordability requirements have made it harder for some people to get an application approved. In particular, the Financial Policy Committee (FPC) rule restricting lending at or above 4.5 times income to no more than 15% of lenders' advances (the so-called LTI flow limit, which applies to lenders which lend more than £100m per year) has proven a serious barrier against the backdrop of a house price to earnings ratio above 8.

Source: ONS, UK Finance

2. Regional housing affordability



2.1 Regional disparities narrow



Source: ONS

The regional pattern in housing affordability of the last three decades has been one of widening disparities between London and the surrounding areas and the rest of Great Britain, as can be seen from Chart 10. However, since the end of 2016, when London prices peaked at 12.9 times earnings, the affordability gap has narrowed with this ratio down to 10.0 times by Q2 2023. Over the same period the house price to earnings ratio has remained broadly unchanged in Scotland, Yorkshire and the Humber, the North East, West Midlands and South West while it has risen in the North West, East Midlands, Wales and Northern Ireland.

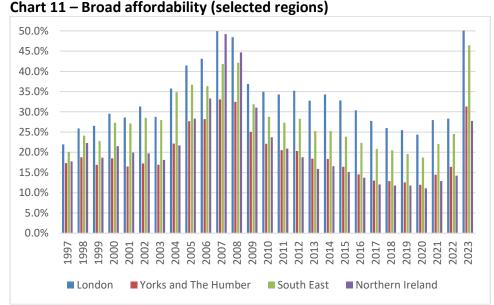
•	•				
	Q1 1997	Q4 2007	Q2 2023	2007/1997	2023/2007
North East	2.67	6.16	4.82	131%	-22%
North West	2.85	6.60	5.62	132%	-15%
Yorks and The Humber	2.92	6.56	5.63	124%	-14%
East Midlands	2.98	6.54	7.02	119%	7%
West Midlands	3.23	6.86	6.49	112%	-5%
East of England	3.29	7.69	8.19	134%	6%
London	4.13	9.24	10.00	124%	8%
South East	3.64	8.09	8.44	122%	4%
South West	3.38	8.77	8.04	160%	-8%
Wales	2.88	6.73	5.67	133%	-16%
Scotland	2.72	5.50	4.75	102%	-14%
Northern Ireland	3.79	9.02	5.47	138%	-39%
Courses ONC					

Table 1 – House price to earnings ratios

Source: ONS

Table 1 shows the changes in house price earnings ratios between 1997 and 2023 for every UK region and country. As the table illustrates, after the sharp rise in this ratio

across the country in the decade up to the market peak in 2007, the subsequent picture has been much more mixed. The sharp rise in prices in London from 2012 to 2016 did create a ripple effect in other regions but this was more muted than in previous upswings, leaving much of the rest of the country with lower house prices relative to earnings today than in 2007 (see final column of Table 1). Since 2016, the house price to earnings ratio has fallen back significantly in London and South East but not enough to fully reverse the gains between 2007 and 2016.



2.2 The impact of higher mortgage rates on regional affordability

Source: ONS, UK Finance

As explained in Section 1.4 above, to get an accurate view of mortgage affordability across the wider population we need to go beyond the data relating to those who have bought, as this cohort may not be representative. As we calculated at the national level, we can multiply mortgage rates and regional average first-time buyer house prices and see what proportion of average regional full-time earnings are consumed covering mortgage payments on the whole value of the average property in each region.

The results for selected regions are shown in Chart 11. Unsurprisingly, London and the South East are the least affordable regions as, although average wages are higher than elsewhere, the difference is not sufficient to compensate for much higher house prices. Chart 11 also illustrates that changes in affordability over time tend to be quite uniform across regions as they are dominated by changes in mortgage rates, although the impact of large house price falls in Northern Ireland from 2008 can be seen in its greater improvement in affordability.

Chart 11 illustrates the serious challenge facing buyers in London and South East as a result of rising interest rates with this broad measure of affordability now worse than in 2007. Actual first-time buyers have overcome this only with very large deposits. The

average first-time buyer deposit in London in 2023 reached £165,000. This no doubt in part reflects the impact of the LTI flow limit. In a region where house prices are 10 times earnings, even someone with a 50% deposit would require a loan of 5 times income to purchase the average property on an average salary. As already noted on page 10 above, this would exceed the 4.5 times income "flow limit" which is applied to 85% of larger lenders' loans.



3. Affordability of owning versus renting

3.1 Higher mortgage rates dent advantages of buying

Whatever the absolute cost of buying, for many households it is the cost relative to the alternative of private renting that matters when it comes to making the decision to buy. In Table 2 we compare the average cost of privately rented property in each region, using the Homelet Rental Index, with the cost of owning calculated by multiplying the average cost of a first-time buyer property by the average 95% LTV mortgage rate, which was 5.89% in April 2024, and applying this to the whole property value.

Because there is no straightforward mechanism to adjust for differences in the quality of the stock of rented versus first-time buyer properties, this is necessarily a rough comparison, but it does serve to illustrate the broad cost differences and to highlight the changing comparative cost over time. While on the one hand owner-occupied properties are generally likely to be of higher quality, on the other this comparison does not take account of additional costs that homeowners will face such as buildings insurance and repairs and maintenance. Of course, buyers with large deposits will be able to access better mortgage rates, but in this exercise we are trying to assess affordability for buyers without assuming a sizeable deposit.

	Average rent	First time buyer	Mortgage	Rent premium	Rent premium
		house price	interest cost	to mortgage	in September
				interest cost	2021
North East	8,388	162,749	9,586	-12%	43%
North West	12,564	204,007	12,016	5%	65%
Yorks and The Humber	10,632	192,906	11,362	-6%	54%
East Midlands	10,608	230,365	13,569	-22%	36%
West Midlands	11,700	228,849	13,479	-13%	43%
East of England	14,820	270,236	15,917	-7%	51%
London	26,004	475,961	28,034	-7%	33%
South East	16,308	336,049	19,793	-18%	33%
South West	14,112	265,675	15,648	-10%	44%
Wales	10,212	192,173	11,319	-10%	59%
Scotland	11,364	175,231	10,321	10%	76%
Northern Ireland	10,284	171,765	10,117	2%	70%
UK	15,528	262,961	15,488	0%	57%

Table 2 – Mortgage interest costs versus average rent (April 2024)

Source: Bank of England, UK Finance, HomeLet

What the final two columns of Table 2 show is that since our earlier report on affordability using data from September 2021, there has been a quite dramatic turnaround in the relative cost of buying versus renting. In September 2021, it was 57% more expensive to rent than buy on this measure at a national level but that gap has disappeared as mortgage rates have risen. Whilst in September 2021 it was cheaper to buy in all regions, it is now more expensive in every region/country except the North West, Scotland and Northern Ireland. This turnaround in relative costs has

occurred despite a sizeable rise in rents. Between September 2021 and April 2024, rents rose by 22% nationally and 24% in London.

The above comparison does not take account of the cash flow impact of capital repayments and these have a significant impact on the monthly outlays of first-time buyers. For example, taking the average priced first-time buyer property, the monthly interest on a 95% LTV mortgage at 5.89% is £1,226 while the full monthly payment on a capital repayment loan is £1,480 on a 30-year repayment term and £1,406 on a 35-year term. The monthly cash outlay for new first-time buyers is thus likely to be significantly higher in most cases than the cost of renting but, by buying, a household can lock itself into a set cost by fixing their loan while renters could see increased rents in future years, so buying is still likely to work out cheaper in the medium to long run.

3.2 First-time buyer numbers still falling short

In the 2021 report we included an updated comparison of first-time buyer numbers measured against their expected number, which we calculated by taking the propensity to buy in each age group in the 1981-84 period and applying it to the population in each subsequent year. The newly updated results are shown in Chart 12, which demonstrates that despite a pick-up in the number of first-time buyers since 2008-11, the numbers have still fallen short of the expected total every year including 2021. In that year there were 405,000 mortgaged first-time buyers but the expected total based on these earlier propensities to buy was still higher at just under 500,000.





Since 2021, first-time buyer numbers have fallen back again, with 2023's total of 287,000 being the lowest figure since 2013 as higher mortgage rates stretched affordability while softening house prices may have led some buyers to delay purchase decisions in the hope that prices will fall further. By the end of 2023, we estimate that the cumulative shortfall in first-time buyers since the financial crisis reached 3.1

Source: ONS, UK Finance

million. Despite this, first-time buyer numbers have risen relative to moving homeowner transactions in recent years. From the low of only 29% of total mortgaged purchasers, in 2023 53% of mortgaged purchasers were first-time buyers, the highest proportion since 1994.

With limited prospects of house prices falling, future first-time buyers will need to rely mainly on lower interest rates to boost affordability. But lenders are helping prospective first-time buyers through a range of innovative products. For example, Skipton Building Society's Track Record Mortgage allows first-time buyers to borrow 100% of the purchase price where they can show a strong track record of rental payments. Other 100% LTV products include Halifax's Family Boost and Barclays' Family Springboard mortgage, where family members can deposit the equivalent of 10% of the purchase price in a savings account for three and five years respectively as an alternative to a deposit. Accord/Yorkshire Building Society has introduced a 5% deposit mortgage, and there is also a range of 5% deposit schemes including Deposit Unlock¹ and Own New, which are specific to new-build property, and offerings under the government backed Mortgage Guarantee Scheme available across the new and existing property market. (The current scheme is due to run until June 2025: as we approach the General Election on 4th July 2024 the Labour Party, which is widely expected to form the next government, has said that it will introduce a permanent version of a mortgage guarantee scheme.)

The lending industry also believes that government can help future first-time buyers by examining the regulatory barriers to ownership. We believe that it would be beneficial for consumers if government were to establish a framework for regulators where the interests of future first-time buyers are explicitly recognized, with affordability regulations reassessed accordingly. Particular attention should be paid to the FPC's LTI flow limit, under which lenders are restricted to offering no more than 15% of their mortgages at or above 4.5 times income, as this seems at odds with the rest of the affordability regime.

¹ The author is an adviser to Deposit Unlock.

4. Conclusion and outlook

When IMLA published *The mortgage affordability paradox* in November 2021, Bank of England Bank Rate was still 0.1% and mortgage affordability, both for actual purchasers and for the average earner, was still excellent despite the high level of house prices relative to incomes. The past three years have seen us enter a very different economic environment and the impact on mortgage affordability has been dramatic.

In 2020, the average house purchaser spent 7.1% of their income on mortgage interest, the lowest figure on record. By 2023, this had more than doubled to 15.0%, above the long-term average of 14%. The deterioration for first-time buyers is even more severe, with interest payments going from 7.8% of income in 2020 to 16.6% in 2023. However, the overwhelming majority of homebuyers take capital repayment loans, and the increase in monthly payments for them is considerably less severe. For example, in 2020 the average purchaser spent 16.9% of their income on their mortgage. This rose to 20.8% in 2023, a much more manageable increase.

Unsurprisingly, this new higher interest-rate environment has resulted in a sharp fall in the number of first-time buyers. From a healthy total of 405,000 in 2021, the highest tally since 2002, first-time buyer numbers fell to 287,000 in 2023. Yet even 2021's total was below the figure that would be expected based on an earlier generation's propensity to buy. On this basis, there should be almost 500,000 first-time buyers a year, a level that has not been reached since 2002. This highlights just how difficult it has been for the current generation to get onto the property ladder compared to those of the 1980s and 1990s.

The outlook remains challenging as well. There is little indication that house prices will fall back, although faster wage growth could allow the house price to earnings ratio to ease back over the coming years. This suggests that improving affordability will rely mainly on lower interest rates. Financial markets expect rates to come down from their current level as inflationary pressures ease, and this should drive an improvement in mortgage affordability, but markets are not predicting a return to the ultra-low interest rates seen in the 2009-2021 period, so affordability will remain a challenge for many buyers.

This background will drive the search for other solutions. One is to increase the rate of house building, but past experience suggests that this can only help incrementally. Another is further innovation by lenders. We have already seen lenders introducing mortgage products that help first-time buyers who do not have access to the bank of mum and dad and lenders recognize the value of sustainable homeownership both to the customer and to society in general. But one area that has received less attention is the need to re-examine the regulatory environment put in place after the financial crisis to see if it is still fit for purpose and not weighing too heavily against the interests of today's and tomorrow's aspiring first-time buyers.

Media contacts

For further information please contact:

- Rob Thomas, Principal Researcher, on 01825 733622
- Paula John Communications: paula.john@imla.org.uk (+44 (0)7973 435 299)

About IMLA

The Intermediary Mortgage Lenders Association (IMLA) is the trade association that represents mortgage lenders who lend to UK consumers and businesses wholly or predominantly via the broker channel. Its membership of 55 banks, building societies and specialist lenders include 18 of the 20 largest UK mortgage lenders (measured by gross lending) and account for approximately 93% of gross mortgage lending.

IMLA provides a unique, democratic forum where intermediary lenders can work together with industry, regulators and government on initiatives to support a stable and inclusive mortgage market.

Originally founded in 1988, IMLA has close working relationships with key stakeholders including the Association of Mortgage Intermediaries (AMI), Building Societies Association, UK Finance and the Financial Conduct Authority (FCA).

Visit www.imla.org.uk to view the full list of IMLA members and associate members and learn more about IMLA's work.

About the author

Rob Thomas is a Director of Research at Instinctif Partners. He previously served as an economist at the Bank of England (1989-1994), a high profile analyst at the investment bank UBS (1994-2001) and as senior policy adviser to the Council of Mortgage Lenders (2005-12). He was also the project originator and manager at the European Mortgage Finance Agency project (2001-05) and created the blueprint for the government's NewBuy mortgage scheme and Deposit Unlock.