States of Jersey Statistics Unit

Housing Affordability in Jersey 2002 - 2011

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Overview

The principal aims of this report are:

- to provide an analysis of the ability of working households in Jersey to purchase accommodation "affordably";
- to present trends in housing affordability in the Island over time.

In addition, the ability of lower income working households, potential first-time buyers and individual key workers to purchase property affordably in Jersey is examined.

A number of different indicators of housing affordability are in use internationally; such indicators are generally based on a comparison of residential property prices with household or individual income. This report presents a set of indicators of housing affordability in the Island for the period from 2002 to 2011.

There are three main sections to this report: the first section presents the **Jersey Housing Affordability Index**; the subsequent sections present complementary measures of housing affordability involving **ratio analysis** and **access analysis**.

The headline measure of affordability, the Jersey Housing Affordability Index (JHAI), is based on a comparison of residential property prices and net household income. This index incorporates the effects of variables such as mortgage interest rates, levels of deposit and mortgage payments relative to income.

The rationale underpinning the **JHAI** is that of producing an overall single indicator of housing affordability in the Island which enables the sensitivity of the assumptions used in the definition of "affordability" to be explored and allows comparison over time.

The **ratio analysis** is based on a direct comparison of property prices and income. Such a measure of housing affordability is conceptually straightforward and enables comparison with other jurisdictions to be made.

The **access analysis** focuses on the affordability of lower priced properties for potential first-time buyers and for individual key workers. Such analysis is particularly relevant for assessing the ability of such households and individuals to get onto the "housing ladder" in Jersey.

The measures of affordability presented are derived from information on property prices and income compiled by the States of Jersey Statistics Unit; see Appendix B: Data Sources. Due to the availability of information relating to share transfer transactions, the measures of affordability derived from distributions of property prices (e.g. the JHAI and lower quartile comparisons) are presented only for calendar years 2010 and 2011, whilst measures derived from mean averages of property prices (e.g. the ratio analysis) are shown for the full period 2002-2011.

Throughout this report only the major costs of purchasing residential property are considered, specifically the purchase price of the property and the mortgage payments (principal and interest). Other acquisition costs (such as stamp duty, estate agents' and legal fees) and other housing costs (such as rates and repairs and maintenance costs) are not considered.

Definitions

"Average" property price
(the same statistical definitions apply to income)

- the **mean** average of a distribution of property prices is calculated by adding together the prices of all the properties and then dividing by the number of properties;
- the **median** average is the '**middle'** price if all the properties were listed **in order** of their price, from lowest to highest; half of all properties lie below the median and half lie above;
- if there are a small number of very highly priced properties, this will tend to increase the mean average;
- a small number of very highly priced properties would not affect the median average, because the middle dwelling remains the middle dwelling no matter what the prices of the other dwellings are;
- this can be termed a 'skewed distribution' and is typical for property prices because there is essentially no upper limit on the price of dwellings, but there is a lower limit;
- the median average can be considered a more realistic measure of the 'central' property price, as it is not affected by properties at the extreme high end of the price range.

Lower quartile: the lower quartile price is determined by putting all properties in order of their price, from lowest to highest. The lowest 25% of property prices are said to constitute the lower quartile, i.e. they fall below the lower quartile price.

Starter home: a flat or house with 1 or 2 bedrooms.

Gross household income: all gross earned and unearned income, pensions and gifts (e.g. inheritance), plus benefits.

Net household income: gross household income plus benefits in kind and minus income tax, social security contributions, pension contributions; *before the deduction of housing costs.*

Qualifying income: the income required to service a mortgage affordably on the purchase of a dwelling at a specified purchase price (based on assumptions of affordability, as considered in this report).

Working household: a household with at least one adult in employment.

Young working household: a household with at least one adult aged between 20 to 39 years in employment.

Key workers: individuals employed in integral positions within the public sector; in this report, key workers are represented by teachers, police officers and nurses who have worked in these roles for three to four years.

Summary of results

A set of measures of housing affordability in Jersey for the period 2002-2011 is presented.

Household income

- between 2002 and 2011, a working household with mean net income was not able to service a mortgage affordably on the purchase price of a median priced house of any size;

- a working household with mean net income was able to service a mortgage affordably on the purchase price of a median priced 1-bedroom flat throughout the period 2002 to 2011;

- a working household with mean net income was able to service a mortgage affordably on the purchase price of a median priced 2-bedroom flat during the periods 2002-2005 and 2009-2011, but not during 2006-2008;

- the 2011 Jersey Census showed that the mean size of households in which there was at least one working adult was 2.6 people; and the mean size of young working households (with at least one working adult aged 20-39 years) was 2.7;

- in 2011, more than two-fifths of all working households could not service a mortgage affordably on the purchase price of a property at the lower quartile price; this proportion represented a slight reduction (an improvement) compared with 2010;

- the marginal improvement in affordability in 2011 compared with 2010 was largely due to a greater proportion of lower-priced share transfer properties being available for purchase in the latest year.

Ratio analysis

- in 2011:
  - the mean property price was seven times the mean gross household income;
  - the price of a lower quartile property in Jersey was seven times the income of a household at the lower quartile level of income; in 2010 this ratio was eight;

- the trends in affordability of designated first-time buyer properties are different for flats and houses:
  - flats: mean price has generally been between three and four times the mean gross household income since 2002; this ratio rose above five in 2008;
  - houses: the ratio of mean price to mean gross household income increased from about five in 2002-2003 to around seven by 2009-2011.

Access analysis

- the percentage of young working households who could not afford to purchase a starter home at the lower quartile price reduced from more than a third in 2010 to less than a quarter in 2011.

Individual earnings

- 2.1 full-time equivalent (FTE) workers would have been required to service a mortgage affordably on the purchase price of a median priced property (all types) in 2011;

- the 2011 Jersey Census showed that there was a mean of 1.6 FTE workers in households which contained at least one working adult.

Key workers (police officer, teacher, nurse with 3 to 4 years of service)

- the earnings of individual teachers and nurses were not sufficient to service a mortgage affordably on the purchase price of a lower quartile priced property (all types) in 2010 or 2011;

- the earnings of an individual police officer were sufficient to service a mortgage affordably on the purchase price of a lower quartile priced property (all types) in 2011 but not in 2010;

- police officers and teachers were better placed than the average worker in terms of being able to afford such a property, whilst nurses were slightly below the average.

Section 1 – The Jersey Housing Affordability Index

The Jersey Housing Affordability Index (JHAI) is an indicator of whether a working household with "average" income is able to purchase a median priced property affordably[1].

The index attempts to quantify the impact that factors such as mortgage interest rates and deposits have on housing affordability. In general terms, affordability is considered to decline (worsen) when property prices grow faster than borrowing capacity.

The JHAI computes the ratio of mean net household income to "qualifying income", defined as the income required to service a mortgage affordably on the purchase price of a median priced dwelling. The index is based to 100 such that when equal to 100 the index implies that a household at the mean level of income may be considered to be able to service a mortgage on a median priced dwelling "affordably".

A complementary index based on gross household income is also presented and enables a comparison of housing affordability before and after the application of income tax and social security contributions.

A further analysis is presented which is based on a measure of individual earnings: the mean earnings per full-time equivalent (FTE) employee. This perspective enables the calculation of an "affordability multiple", defined as the number of full-time equivalent earners required to achieve the "qualifying income".

Central assumptions

The central assumptions through which the JHAI attempts to quantify housing affordability are:

- mortgage payments (principal and interest) should consume no more than: 40 percent of net income; or 30 percent of gross income;
- the purchaser has a cash deposit of 10 percent of the purchase price;
- the purchaser is financing a 90 percent mortgage at a variable interest rate for a term of 25 years, with both principal and interest payments paid each month throughout the term.

The interest rates used in the computation of indices are derived from data published by the Bank of England, specifically: the sterling standard variable mortgage rates quoted to households by UK monetary financial institutions (excluding the central bank).

Results

Table 1 shows the information from which the indices of housing affordability are derived:

- mean gross and net household income for households with at least one adult member earning income from employment;
- median property price (all property types and sizes);
- mean mortgage interest rate;
- qualifying gross and net household income.

[1] The Jersey Housing Affordability Index is based on a measure of affordability developed by the Housing Industry Association Economics Group and the Commonwealth Bank of Australia, HIA-CBA.

Table 1 - Household income, property prices and interest rates, 2010-2011

Year	Mean household income (working households)		Median dwelling price	Mean mortgage interest rate %	Qualifying income	
	Gross	Net			Gross	Net
2010	£63,600	£50,800	£405,000	3.96	£76,000	£57,000
2011	£64,900	£51,700	£380,000	4.04	£71,800	£53,900

As Table 1 shows, the qualifying income required to service a mortgage affordably on a newly purchased property at the median dwelling price was greater than the actual mean household income (gross or net) in both 2010 and 2011.

Table 2 presents two affordability indices derived from mean gross and net household income, respectively. The apparent increase in affordability derived from net income compared with gross income (an improvement of around 5-6 percentage points) is due to the central assumption that in order to be considered affordable mortgage payments may consume up to 40% of net income but only up to 30% of gross income.

Table 2- Affordability indices based on Household income of working households

Year	Affordability index	
	Gross income	Net income the JHAI
2010	84	89
2011	90	96

The headline measure of housing affordability, the JHAI, is that based on net household income. The JHAI approached 100 in 2011, implying that the mean net household income was almost sufficient to service a mortgage affordably on the purchase price of a median priced dwelling in that year.

As Table 2 shows, housing affordability in Jersey improved slightly in 2011 compared with 2010. This slight increase in affordability was driven by an increased proportion of lower priced share transfer properties (specifically 1-bedroom flats) being available for purchase in the latest year[2].

Effect of property type and size

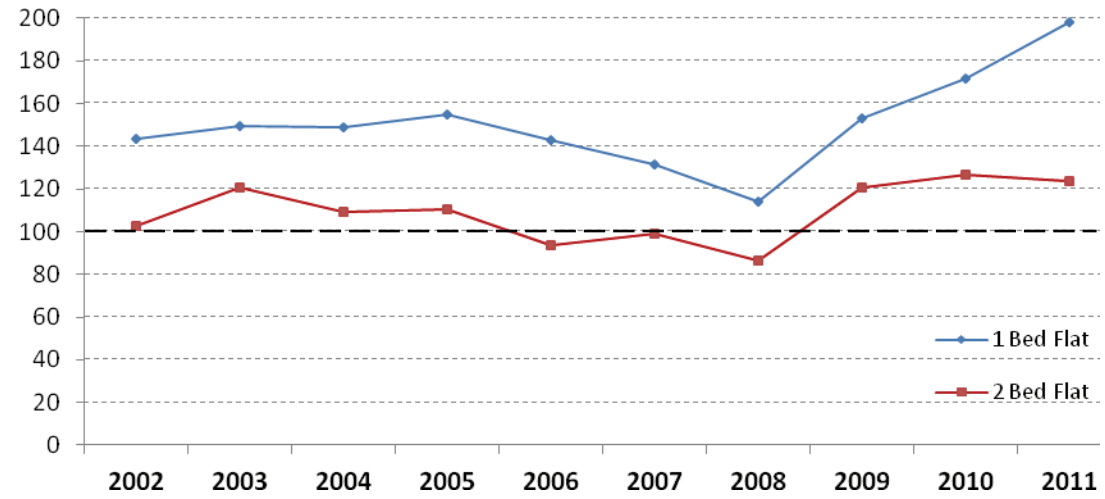
Separate indices are also calculated for each type and size of dwelling (1- and 2-bedroom flats and 2-, 3- and 4-bedroom houses), to provide an understanding of the category of property which a household might expect to be able to purchase affordably. These indices, shown in Figures 1 and 2, are based on mean net household income and the respective median prices for each category of property.

[2] *Jersey House Price Index – Fourth Quarter 2011*; States of Jersey Statistics Unit, February 2012.

Figure 1, showing the affordability indices for flats, indicates that a working household with mean net income was able to service a mortgage affordably on a median priced 1- bedroom flat throughout the period from 2002 to 2011 (the index is above 100 for all of this period).

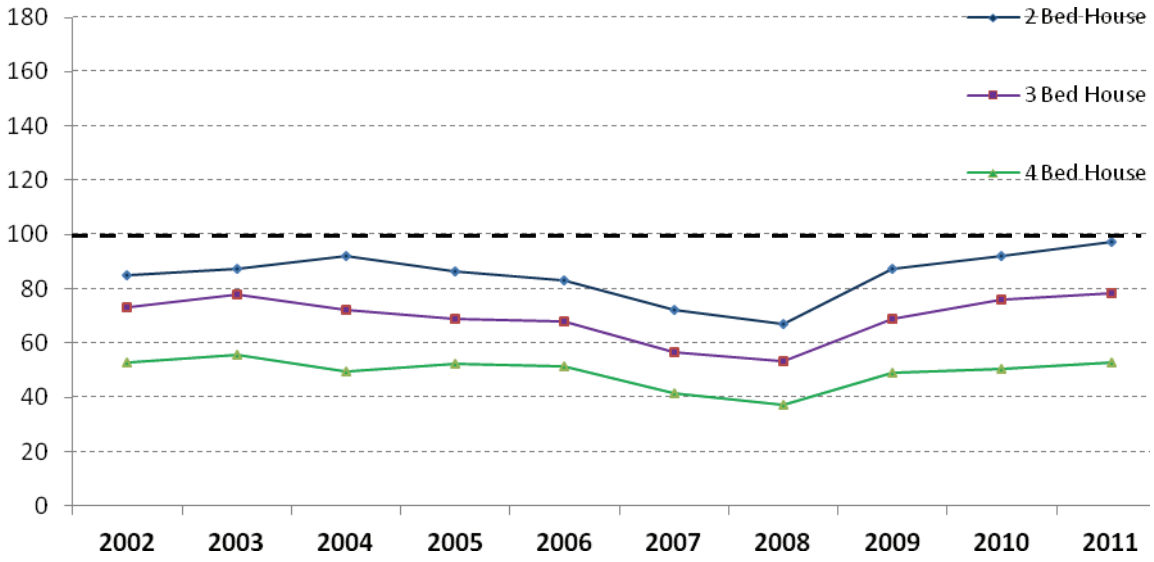
However, the index for 2-bedroom flats falls below 100 from 2006-2008, indicating that a working household with mean net income was not able to service a mortgage affordably on a median priced 2-bedroom flat in these years.

Figure 1 - Affordability indices based on net household income - flats



The affordability indices shown for houses in Figure 2 indicate that a working household with mean net income was not able to service a mortgage affordably on the purchase price of a median priced house of any size at any time during the period from 2002 to 2011.

Figure 2 - Affordability indices based on net household income – houses

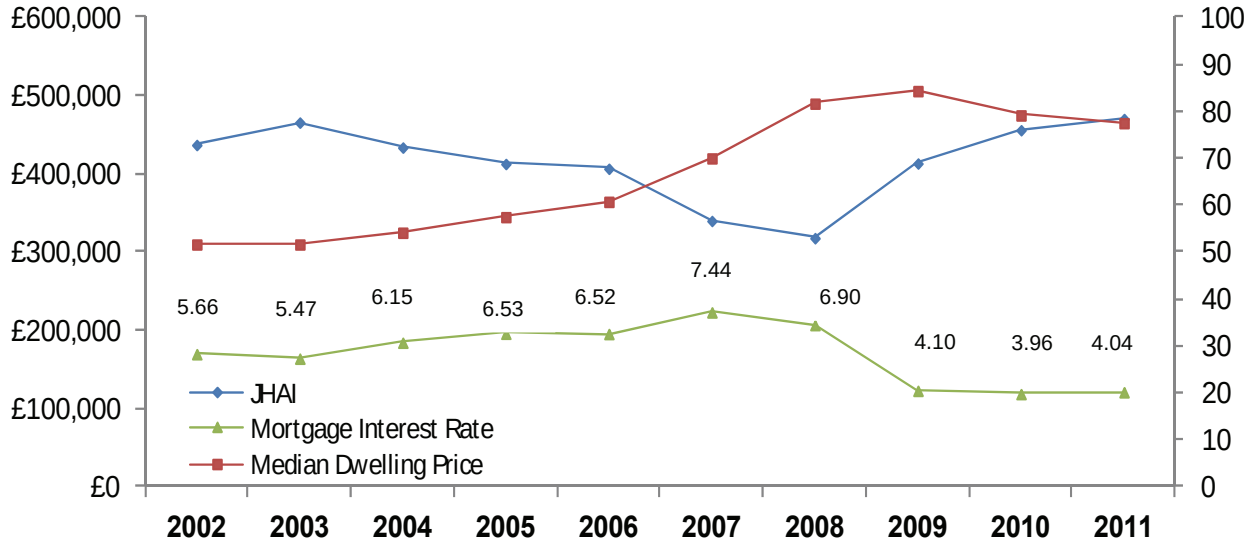


For context, the 2011 Jersey Census showed that the mean size of working households (with at least one adult in employment) was 2.6 people (adults and children); and the mean size of young working households (at least one working adult aged 20-39 years) was 2.7.

Effect of interest rates and property prices

Figure 3 shows the effect on affordability of 3-bedroom houses of changes in mortgage interest rates and property prices (3-bedroom houses). The increase (improvement) in the affordability index between 2008 and 2011 was driven by lower interest rates, notably between 2008 and 2009, coupled with the relative stability of property prices observed in Jersey during this period.

Figure 3 – The JHAI, median dwelling price (3-bedroom houses) and mean mortgage interest rates



Individual earnings

From the perspective of individual earnings (the mean gross earnings of a FTE employee) housing affordability in Jersey improved slightly in 2011 compared with 2010. Table 3 shows that the qualifying gross earnings required to service a mortgage affordably in 2011 (under the central assumptions) was about £4,000 less than in 2010.

Table 3 - Affordability index based on Individual earnings (per FTE employee)

Year	Median dwelling price	Mean mortgage interest rate %	Annual mortgage payments	Mean gross annual earnings	Qualifying gross earnings	Affordability multiple
2010	£405,000	3.96	£22,787	£32,800	£76,000	**2.3**
2011	£380,000	4.04	£21,553	£33,800	£71,800	**2.1**

The affordability multiples shown in Table 3 imply that the level of income required to service mortgage payments affordably in 2011 was 2.1 times the mean individual earnings of a FTE employee. This multiple is an improvement on that of 2010 when the required level of income was 2.3 times mean gross earnings.

The 2011 Jersey Census revealed that on census day, 27 March 2011, there was a mean number (headcount) of 1.7 workers (full-time or part-time) per household in households in which there was at least one adult member earning income from employment. This mean number of workers corresponded to 1.6 FTE employees per working household.

Section 2: Ratio Analysis

The ratio of property price to income is the most widely used measure of housing affordability. Such ratio analysis is particularly useful for making comparisons between jurisdictions and for examining trends in affordability over time. Several versions of this conceptually simple indicator are used internationally; the UK Government's preferred form is the ratio of lower quartile property price to lower quartile income.

Although various ratio analysis methodologies compare the average dwelling price with the income of individuals, such an approach tends to amplify affordability difficulties. Therefore, in order to provide a more representative measure of housing affordability, and to enable comparison with Great Britain, in this section property prices in Jersey are compared with gross **household** income.

Mean price and mean gross household income

Figures 4 and 5 show the ratio of mean property price to mean gross household income (all working households) for flats and houses in Jersey during the period from 2002 to 2011.

Figure 4 - Ratio of mean property price to mean gross household income: flats

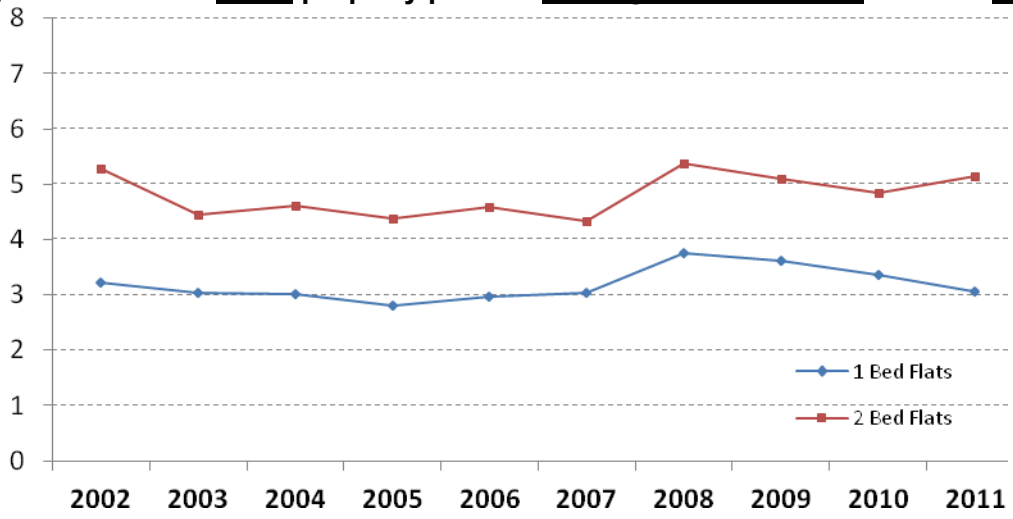


Figure 5 - Ratio of mean property price to mean gross household income: houses

For all property types, overall, the mean purchase price was more than seven times the mean gross household income in 2008, the maximum ratio seen in the ten-year period.

From Figures 4 and 5 it is apparent that during the period from 2002 to 2011 the ratio of the mean property prices to mean gross household income in Jersey was:

- around 3 for 1-bedroom flats, and approaching 4 in 2008-2009;
- around 5 for 2-bedroom flats;
- around 6 for 2-bedroom houses;
- around 7 for 3-bedroom houses until 2007; around 8 subsequently;
- between 9-10 for 4-bedroom houses until 2007; around 11 subsequently.

Over the period covered by Figures 4 and 5, most property types were at their relatively most affordable in 2005; the ratio for all property types in this year being slightly below 6.

Lower quartile ratio

A ratio of lower quartile property price to lower quartile income is used by the Department for Communities and Local Government (DCLG) in the UK to assess whether households with lower levels of income can afford to purchase lower priced properties[3].

Table 4 - Lower quartile ratio, 2010-2011

Year	Lower quartile property price	Lower quartile gross household income	Ratio
2010	£278,000	£34,100	8
2011	£252,000	£34,700	7

In 2011, the price of a lower quartile property in Jersey was approximately 7 times the income of a household at the lower quartile level of income.

In order to be considered affordable according to a criteria of 'five times gross annual income', a property priced at £174,000 would be affordable to a household at the lower quartile of income. For comparison, the median price of a 1-bedroom flat in Jersey in 2011 was £210,000.

First-time buyers

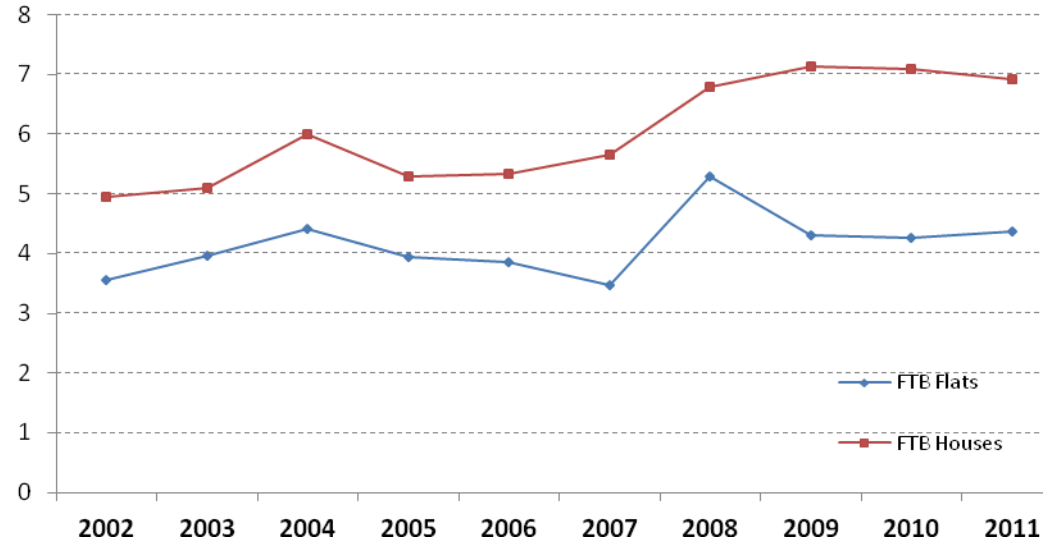
Figure 6 shows the ratio of the mean price of properties allocated specifically for first-time buyers (FTB) in Jersey to the mean gross household income for households with one or more working adults aged between 20 to 39 years; such households may be considered to represent a population of potential first-time buyers.

The trends in affordability of designated FTB properties are different for flats and houses:

- for FTB flats; the ratio of mean price to mean household income has generally been between 3 and 4 since 2002, but rose above 5 in 2008;
- in contrast, for FTB houses this ratio has increased during the period, from about 5 in 2002-2003 to around 7 by 2009-2011.

[3] The ratio of 'lower quartile' property price to income is calculated by ranking all property prices and gross household incomes in ascending order; in each distribution the lower quartile are those values lying below the 25th percentile value. The lower quartile ratio is calculated as the ratio of the 25th percentile property price to the 25th percentile gross household income.

Figure 6 - Ratio of mean FTB property price to mean household income



Comparison with Great Britain

Table 5 shows a summary of ratios of property price to gross household income for Great Britain in 2005, the latest year for which comparable information is available[4]. In order to provide a consistent measure across regions, the property prices shown are mean averages derived from the prices of **2- and 3-bedroom dwellings (flats and houses)** only. Furthermore, to represent the situation faced by potential first-time entrants to home ownership, income is calculated at the household level and is based on the mean gross income of **households with at least one working adult aged between 20 and 39 years**.

Table 5 - Ratio of property price to household income, Jersey and Great Britain 2005

	Mean annual gross household income	Mean property price 2- or 3-bedrooms	Ratio of property price to income
Jersey	**£51,460**	**£309,073**	**6.0**
England	£38,996	£172,593	4.4
Scotland	£32,558	£119,344	3.7
Wales	£29,241	£123,362	4.2
Great Britain	£37,989	£165,526	4.4
London	£54,458	£272,714	5.0
South West	£35,041	£170,979	4.9
South East	£41,342	£196,604	4.8
East	£40,474	£175,305	4.3
Yorkshire and Humber	£30,946	£123,414	4.0
West Midlands	£35,088	£137,624	3.9
North West	£32,986	£126,284	3.8
North East	£30,800	£116,167	3.8
East Midlands	£35,013	£130,230	3.7

[4] "*The geography of affordable and unaffordable housing*", S. Wilcox, JRF 2006.

In 2005, regional ratios of property price to income ranged from 3.7 in Scotland to 5.0 in London. Housing was generally less affordable in the South compared to the North, with the South East and South West of England recording the highest ratios after London.

Analysis at the local authority level shows that several areas of Great Britain had greater affordability issues than suggested by the regional figures. Table 6 shows the ratio for Jersey compared with those local authority areas with the top twenty highest ratios.

Table 6 - GB local authority areas with highest property price to income ratios – 2005
2- and 3-bedroom properties; young working households.

Local authority area	Mean annual gross household income	Mean property price 2- or 3-bedrooms	Ratio of property price to Income
Kensington & Chelsea	£91,297	£705,170	7.7
North Cornwall	£26,677	£183,574	6.9
Ryedale	£25,134	£171,976	6.8
North Norfolk	£23,386	£159,004	6.8
City of London	£66,170	£447,013	6.8
Westminster	£73,771	£494,955	6.7
Hammersmith & Fulham	£58,052	£384,231	6.6
Adur	£29,007	£191,455	6.5
Camden	£65,454	£426,479	6.5
Kerrier	£27,311	£176,831	6.5
Carrick	£31,873	£203,704	6.4
Richmondshire	£26,480	£163,577	6.2
West Somerset	£31,806	£196,258	6.2
Torridge	£26,829	£165,339	6.2
Bournemouth UA	£31,505	£191,877	6.1
Chichester	£38,992	£236,261	6.1
West Devon	£32,762	£198,139	6.0
South Hams	£35,180	£210,088	6.0
Jersey	**£51,460**	**£309,073**	**6.0**
Brighton and Hove UA	£38,138	£227,100	6.0

Section 3: Access Analysis

Introduction

The Joseph Rowntree Foundation has used an access analysis methodology[5] to calculate the proportion of young working households that cannot afford to purchase a starter home (defined as a 4 or 5 room property) at the lower quartile price, in an attempt to evaluate the situation most commonly faced by first-time buyers in England.

In this section, the proportion of all working households who cannot afford to purchase a property at the lower quartile price in Jersey (all dwelling types and sizes) is estimated. Further analysis focuses on young working households (with one or more working representatives aged between 20-39) and estimates the proportion of such households that cannot afford to purchase a 1- or 2-bedroom property (flat or house); these parameters have been chosen to reflect the situation commonly faced by first-time buyers in the Island.

The analyses presented in this section assume that the households considered (in essence, new entrants onto the housing ladder) could not afford to service a mortgage greater than five times their annual gross income and had a deposit of 10%, therefore requiring a mortgage for 90% of the dwelling price; (at the lower quartile price of all properties in 2011, such a deposit corresponded to £25,000).

Results

All working households

Table 7 shows the percentage of all working households in Jersey who could not afford to service a mortgage on a property at the lower quartile price of all property types.

Table 7 – Affordability of lower quartile properties (all types); all working households

Year	Lower quartile price	Household income required to service mortgage affordably	% of all working households unable to purchase
2010	£278,000	£50,000	47
2011	£252,000	£45,400	41

In 2010, almost half (47%) of all working households in Jersey could not afford to service a mortgage at the lower quartile price of all property types. More recently, this proportion has decreased slightly; nevertheless in 2011 about two-fifths (41%) of all working households in Jersey could not afford to service a mortgage on a property at the lower quartile price.

First-time buyers

As Table 8 shows, the percentage of young working households who, by the assumed criteria, could not afford to purchase a starter home at the lower quartile property price decreased from more than a third (36%) in 2010 to less than a quarter (23%) in 2011.

Conversely, the proportion of young working FTB households in Jersey who, in principle, were able to purchase a starter home affordably, increased from around two-thirds in 2010 to more than three-quarters in 2011.

[5] "*Affordability differences by area for working households buying their home*"; S. Wilcox, JRF 2003.

Table 8 – Affordability of lower quartile starter homes (1- or 2-bedroom flat or house); young working (FTB) households.

Year	Lower quartile price (starter homes)	Household income required to service mortgage affordably	% of FTB households unable to purchase
2010	£230,000	£41,400	36
2011	£195,000	£35,100	23

Greater proportions of young working FTB households would have been able to afford a property priced below the lower quartile price. Similarly, greater proportions would have been able to purchase such properties affordably if they had a larger deposit available.

For context, the number and type of starter homes which sold in 2011 at or below the lower quartile price of £195,000 were: 130 1-bedroom flats and fewer than 10 2-bedroom flats. No 2-bedroom houses were recorded as having been sold at or below this price.

Key workers

This sub-section focuses on the ability of three different types of individual "key worker" (teacher, police officer and nurse) to be able to afford to purchase a property at the lower quartile price (all property types).

For each key worker, the earnings used is that potentially achieved after working for three to four years. As in the access analysis presented for FTB households, a property price to income multiple of five is assumed as the threshold of affordability; it is also assumed that the purchaser has a 10% deposit and is purchasing property as an individual.

It should be noted that for this analysis earnings is measured at the individual level and, therefore, is not representative of a household containing more than one person with income contributing towards a mortgage. For comparative purposes, the affordability measure is also calculated for an individual employee earning the mean FTE income of all employees in Jersey.

All properties at lower quartile price

Table 9 shows key worker incomes as a percentage of the income required to service a mortgage affordably at the lower quartile price of all properties in Jersey, and also that for all employees in the Island.

Table 9 – Individual income as percentage of that required to service a mortgage affordably at the lower quartile price of all properties

Year	Lower quartile price	Income required	Earnings as % of required income			
			Teacher	Police officer	Nurse	All employees (FTE)
2010	£278,000	£50,000	71%	89%	59%	66%
2011	£252,000	£45,400	80%	100%	67%	74%

Of the three types of key worker, nurses had the greatest disparity with respect to required income, their earnings corresponding to around two-thirds of the requisite income in 2010 and three-quarters in 2011. Although affordability issues were not as severe for police officers and teachers by this measure, a property at the lower quartile price could not be considered to be affordable by individuals for either of these key workers in 2010.

Some improvement in affordability was observed in 2011; the earnings of a police officer being at the level required to service a mortgage affordably on a property at the lower quartile price, whilst a teacher earned around four-fifths of the requisite income.

In 2010 and 2011, the mean earnings of all employees in Jersey was about two-thirds to three-quarters, respectively, of that required to service a mortgage affordably on a lower quartile priced property. Hence, by this measure, police officers and teachers were above the average worker in terms of being able to afford a mortgage on such a property whilst nurses were slightly below the average.

Sensitivity to central assumptions

The methodology underpinning the construction of the various affordability indices enables examination of the effects of changes in property prices and mortgage interest rates and also of the central assumptions (e.g. percentage of gross or net income consumed by mortgage payments). In this appendix, the effect of such variations on the affordability of 2-bedroom flats and 3-bedroom houses are discussed.

Two-bedroom flats

In 2011, a working household with mean income could service a mortgage on a median priced 2-bedroom flat (£295,000) with mortgage payments consuming about a quarter (26%) of gross household income (almost £65,000 per annum) and about a third (32%) of net household income (almost £52,000 per annum).

If the median price of a 2-bedroom flat and household income were to remain at 2011 levels, then mortgage interest rates could rise to a mean of 6.4% before the mortgage payments on such a property would not be considered affordable (i.e. the index falls below 100) for a household with mean net income (based on the central assumptions that mortgage costs should not consume more 40% of net household income).

Alternatively, assuming that the mean mortgage interest rate and household income remained constant at 2011 levels, then the median price of a 2-bedroom flat could rise to about £365,000 before the mortgage payments on such a property would not be considered to be affordable for a household with mean net income.

Three-bedroom houses

In 2011, the mortgage payments on a median priced 3-bedroom house accounted for about two-fifths (41%) of mean gross income and about half (51%) of mean net income of working households.

To satisfy the central assumptions that mortgage payments should not consume more than 30% of gross income or 40% of net income, a household would require almost £90,000 in gross income or almost £70,000 in net income in order to service affordably a mortgage on a median priced 3-bedroom house, assuming interest rates and property prices remained at 2011 levels.

Alternatively, and assuming interest rates remained at 2011 levels, the median price of a 3-bedroom house would have to fall by almost a quarter (by 24%, or by £100,000) in order that mortgage payments accounted for 40% of 2011 mean net household income.

Appendix B

Data Sources

Property prices

Mean average property prices and measures of distributions, such as median and lower quartile prices, are derived from data collected for the compilation of Jersey's quarterly House Price Index. The data on transaction prices comes principally from the Jersey Property Bulletin (for freehold and flying freehold properties, recorded by the Royal Court) and the States of Jersey Income Tax Department (for share transfer transactions), supplemented by information on dwelling type and size provided by the States of Jersey Population Office.

Property prices (means and measures of distribution) have been calculated using the transaction prices of all 1 and 2 bedroom flats and 2, 3 and 4 bedroom houses sold in Jersey in each year. Certain property types (e.g. bedsits, 1 and 5 or more bedroom houses and commercial properties) are excluded from the analysis.

To determine mean property prices, distributions are winsorised in order to prevent exceptionally high or low values from overly influencing the estimate of the mean. Mean prices of each dwelling type in each calendar year are derived from quarterly data weighted by turnover; furthermore, the overall mean price for each calendar year is "mix-adjusted", i.e. it is independent of the particular "mix" of properties sold in a given year.

Median and lower quartile prices are measures of spread derived directly from distributions and do not account for differences in the mix of properties sold.

Housing loan interest rates

Housing loan interest rates are derived from figures published by the Bank of England and represent a yearly mean average of interest rates offered by UK monetary financial institutions. The rates used are those for sterling variable rate mortgages quoted to households.

It should be acknowledged that a different range of mortgage products from that in the UK may have been available to Jersey residents throughout the period covered by this report.

Income

Measures of net and gross **household** income have been derived from data collected by the 2009/2010 Jersey Income Distribution Survey. Household level data are weighted by tenure. Non-equivilised measures of income have been used for all analyses presented in this report.

A process of winsorisation was applied for the calculation of mean household incomes, to prevent exceptionally high or low values from overly influencing the estimate of the mean.

Since the Jersey Income Distribution Survey is not conducted annually, measures of household income for each year of the period from 2002 to 2011 have been calculated by deflating/inflating values derived from the 2009/10 survey according to the annual percentage changes determined by the Jersey Index of Average Earnings.

Data on **individual** employment income is sourced from the annual survey for compiling the Jersey Index of Average Earnings; this survey enables estimation of the mean full-time weekly earnings for both private and public sector workers in Jersey (gross earnings, including overtime, but excluding bonuses, employers' insurance contributions, holiday pay and benefits in kind).

For this survey, firms report the total gross wages and salaries paid to employees before any deductions (e.g. for income tax, social security or pensions) as well as the number of people employed (part-time employees are converted to full-time equivalents, FTEs). Mean earnings are compiled for each sector and the sectoral means are weighted according to the sectoral share of total employment in order to provide an estimate of the overall mean weekly earnings per FTE employee in Jersey.

Statistics Unit
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