Chapter 2: Future Housing Market

Introduction

2.1   The future market considers some of the key drivers and factors that will influence the housing market in the coming years. This is important because it helps Development Plans and Local Housing Strategies to consider how presently understood factors could influence the future. It also helps to consider other previously unknown factors and anticipated phenomena. Together this provides a steer that assists in the construction of scenarios for alternative futures in the CHMA's HNDA Tool. These scenarios help to understand the scale of need and demand for market and affordable housing in the future dependent on a variety of different factors to best inform future policy.

2.2   The TAYplan-wide Joint HNDA Methodology Statement (2013) explains the process and the data that will be used to examine the future housing market. The information is predominantly presented at TAYplan and/or local authority scale. This is because most projections are only carried out at these levels. This chapter explores some of the anticipated drivers of change in the future market and explains how scenarios have been constructed using the CHMA HNDA Tool.

How to use this chapter

2.3   This chapter is structured around the two stages set out in the Scottish Government's Housing Need & Demand Assessment (HNDA) Guidance published in March 2008 below. This chapter is set out stage by stage.

Stage 1: Indicators of Future Demand	Step 1.1 Projecting changes in future numbers of households	Examination of the 2010-based population and household projections including the variants prepared by National Records of Scotland that are used in the in CHMA's HNDA Tool.
	Step 1.2 Future Economic Performance	Examination of academic work on anticipated economic performance, work by Scottish Enterprise and liaison with Council Economic Development teams to consider future economic and employment forecasts.
		Investigation of other economic forecasts and projections for the local, Scottish and UK economies.
	Step 1.3 Future affordability	Examines the evidence from Steps 1.1 and 1.2 and makes judgements about what changes might be expected to take place in house prices and the impacts on affordability.
Stage 2: Bringing the evidence together		Consideration of Stage 1 factors and documentation of the process for constructing scenarios to run in the CHMA's HNDA Tool.

Stage 1 Indicators of future demand

2.4   The HNDA needs to derive an estimate of the scale of future housing demand across the whole housing market. This builds upon the understanding of the current housing market and considers how the current drivers of demographics, the economy and affordability interact and could shape housing demand in the future.

Step 1.1 Future numbers of households

2.5   The National Records of Scotland (NRS) regularly publish population and household projections. The most recent projections were published in February 2012 and were calculated using a 2010 base. The projections set out possible population and household levels between 2010 and 2035 including several variants. The 7 household projection variants are contained in the CHMA's HNDA Tool.

2010-based Population Projections

2.6   The 2010-based population projections set out a Principal projection and then a range of seven other variants based on possible changes in the drivers of fertility, mortality and migration. The Principal population projection assumes that trends of the most recent 5 years continue for all these drivers for the next 25 years. The projections show:

- Changes in the internal drivers (fertility and life expectancy) are generally low level, have a relatively small impact on the total population and tend to mirror national changes (apart from Angus where there is a relatively large natural decrease in population forecast – see Figure 2.1 below).
- Migration levels have a more significant impact on population levels within each local authority area and across the TAYplan area as a whole. This is shown most clearly in the zero migration variant (see Figure 2.4 below). Here the population of the constituent local authorities across the TAYplan region as a whole falls over the 25 year projection period.

2.7   The principal projection in Figure 2.1 (below) shows a natural decrease of population in Angus in contrast to the other parts of the TAYplan region, which have a natural growth of between 1.5 and 2.4%. There is expected to be a low level of migration to Dundee City in comparison with other areas, with Angus and Fife projected to see similar higher levels. The most significant projected change in migration over the next 25 years is projected in Perth and Kinross (30.3%). This alone is a considerable driver of the projected population change for the Perth & Kinross itself and for the TAYplan region.

Figure 2.1: Components of Principal Projected Population Change for local authorities 2010 – 2035

	% Natural Change (birth rate and life expectancy)	% Net migration	% projected population change
Angus	-4.1	8.4	4.3
Dundee City	2.4	4.1	6.5
Whole of Fife	1.5	8.0	9.5
Perth & Kinross	1.8	30.3	32.1

Source: NRS 2010 based population projections for Scottish Areas - Components of projected population change for Council areas, 2010-2035

2.8   2010-based population projections for the TAYplan region (Figure 2.2 below), rather than local authorities, illustrate the relative impact of natural change and migration on the projected population to 2035. Again migration is the principal driver of population change, largely as a consequence of the projected change for Perth & Kinross set out in Figure 2.1 above. It should be noted that Figure 2.2 examines the principal projection variant.

Figure 2.2: Projected components of population change for TAYplan Strategic Development Plan (SDP) area, 2010-2035:

TAYplan	2010-15	2015-20	2020-25	2025-30	2030-35
Population at start	**481,050**	**496,620**	**510,450**	**524,230**	**536,530**
Births	25,630	26,950	27,370	26,860	26,390
Deaths	25,860	25,960	26,430	27,420	28,630
Natural change [1]	-240	1,000	950	-560	-2,240
Migration	15,790	12,840	12,850	12,850	12,850
Population at end	**496,620**	**510,450**	**524,230**	**536,530**	**547,150**
Total change	15,570	13,830	13,780	12,300	10,620

Source: NRS 2010-based Population Projections for - Projected components of population change 2010-2035

2.9   Figure 2.2 shows that natural change differs in the TAYplan region throughout the projection period. It is -240 for the 2010-15 period, it then increases to around 1,000 for the ten years 2015-20 and 2020-25 before decreasing to -560 by 2025-30 and to -2,240 by 2030-35. This is because although the number of births increases from 4,980 in 2010-11 to 5,490 in 2021-22 before decreasing to around 5,280 by 2035, the number of deaths increases across the projection period from 5,170 in 2010-11 to 5,820 in 2034-35 (a 13% increase). Even though natural change is negative by the end of the projection period, the TAYplan region is projected to have net in-migration across the period, and the population is still projected to rise. The long-term net in-migration averages 2,570 per year.

2.10   Alongside the Principal population projection, seven variant projections were prepared by NRS (Figures 2.4). These show increased and decreased fertility, life expectancy and migration levels at a local authority level. Population projections for the TAYplan region (Figure 2.3 below) are only presented alongside increased and decreased migration variants. The variants presented are not intended to be upper / lower limits but possible assumptions of what might happen under differing circumstances.

Life Expectancy and Fertility
2.11   The principal projection assumes a Total Fertility Rate (TFR) of 1.7 births per female of childbearing age. This was based on trend data and it was assumed that the average completed family size will continue to decline from around 1.85 children per woman for those born in the early 1960s and now reaching the end of their childbearing lives, before levelling off at 1.70 for those born in the 2000s and later. Higher and lower values have then been used to show possible variants from the trend, with the higher value being 1.9 births per female and the lower value being 1.5 births per female.

2.12   The principal projection assumes a life expectancy of 80.9 years for males and 85.1 years for females. This is again based on trend data. Under the high variant, life expectancy for males is projected to be 83.3 years and 86.7 years for females. For the low variant, projected life expectancy for males and females by 2035 is 78.4 years and 83.5 years respectively.

2.13   The fertility and life expectancy figures are applied across Scotland to all local authority and health board areas. The resultant projections are therefore largely determined by the resident population. The migration figures, however, are slightly different. They consider moves to and from Scotland from the rest of the UK and overseas and apportion the figure to each area based on past trends.
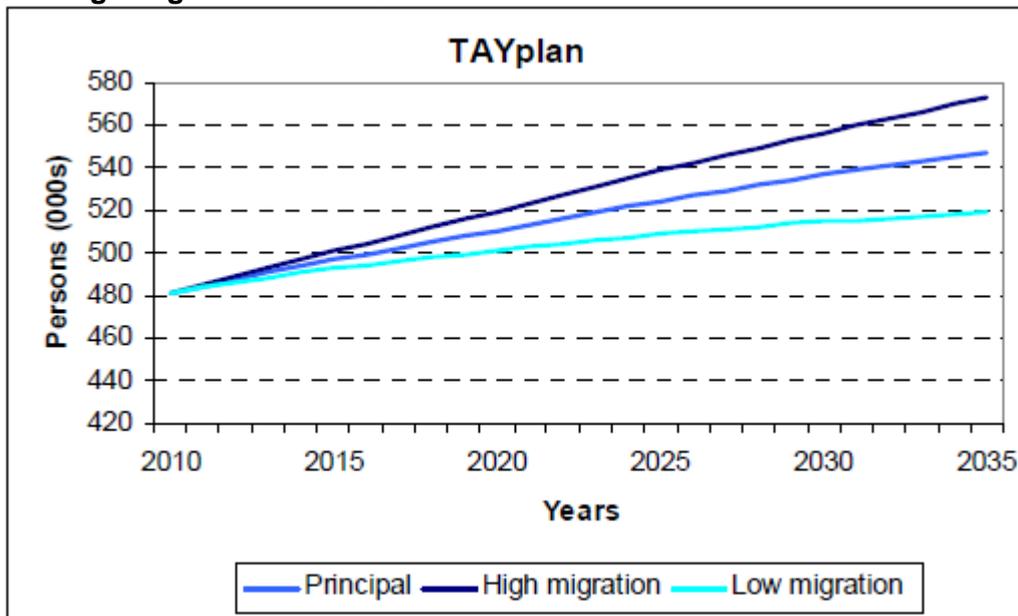
Migration

2.14   The level of migration into and out of a place is determined by a number of factors, including the strength of the economy and the level and nature of employment opportunities. Some of the drivers for migration are covered in the *future economic performance* section below, but it has been important to ensure that the scenarios run using the CHMA's HNDA Tool have a consistent approach to the expected level of migration, and also that the level of migration is not double counted under both the household projections and economic forecast scenarios. The size of migration flows and uncertain trends which can differ at a local level from national levels mean that migration assumptions are generally more critical in determining the level of population growth than fertility or life expectancy assumptions.

2.15   The principal projection assumes a national total net in-migration of 17,500 from 2016-17 onwards. In the first six years higher net inflows are assumed: 24,000 in 2010-2011, 25,200 in 2011-2012, 23,700 in 2012-2013, 22,000 in 2013-14, 19,000 in 2014-2015, and 18,300 in 2015-2016. This reflects recent trends and increases in the number of people migrating to Scotland, after many years when net out-migration was the norm. It also includes an allowance for migrants from the A8 countries in Eastern Europe which joined the European Union (EU) in 2004.

2.16   For the high migration variant projection at Scotland level net in-migration of 28,250 is assumed for 2010-11. Migration is assumed to peak in 2011-12 at 33,700 before declining over the next five years to 26,000 from 2016-17 onwards. For the low migration variant projection net in-migration of 9,000 is assumed from 2016-17 onward with higher levels (starting at 19,750 in 2010-11) assumed for the first six years at Scotland level.

2.17   Figure 2.3 shows that under the high migration variant the population of the TAYplan region is projected to reach 570,000 in 2035. This is a 21% increase, compared with the 14% increase for the principal projection. The low migration variant projects an increase of 8% for the TAYplan region, with the population reaching 520,000 by 2035.

Figure 2.3: TAYplan 2010-Based Population Principal Projection 2010 to 2035 with Low and High Migration variants.

Source: National Records of Scotland Population Projections for Scotland's Strategic Development Plan Areas and National Parks (2010-based), High Migration Variant and Low Migration Variant

Figure 2.4: 2010-Based Population Principal Projection 2010 to 2035 with Migration, Fertility and Life Expectancy variants at council level

		Angus	Dundee City	Whole of Fife	Perth & Kinross
2010		110,570	144,290	365,020	147,780
2035	**Zero Migration**	107,781	142,920	366,351	142,030
	Low Migration	111,156	144,177	381,334	186,297
	Low Fertility	112,017	148,764	387,788	190,238
	Low Life Expectancy	113,644	151,811	394,663	193,096
	Principal	115,299	153,697	399,721	195,187
	High Life Expectancy	116,861	155,526	404,642	197,253
	High Fertility	118,318	158,035	410,545	199,986
	High Migration	120,126	162,959	416,699	203,172

Source: **National Records of Scotland** Population Projections for Scottish Areas (2010-based) - Comparison between principal and variant population projections, by Council and NHS Board areas, 2010-2035

2010 Based Household projections (including 6 variant projections)

2.18   The household projections are based on the population projections. As a result, assumptions used for the population projections, such as future fertility, mortality and migration will have an effect on the household projections. The principal household projection is based on the principal population projection as well as past trends of household formation rates. There are 2 other variant household projections that use all the same inputs as the Principal household projection, but change the population growth from the Principal trend based figures to the high and low migration levels.

2.19   The household formation rates rely on projecting trends in household formation from the 1991 and 2001 censuses to 2035 and are not policy-based forecasts of what the Scottish Government expects to happen. They do not take into account social and economic factors that have changed since 2001, including imbalances between housing supply and demand, affordability and policies adopted by UK and Scottish governments and councils.

2.20   Three additional projection variants have therefore been created using an alternative assumption that, from 2002 onwards, the rate of household formation changes at half the rate given by the principal projection. These variations are called "alternative headship" variants. This slower rate of households formation reflect results from the Scottish Household Survey which showed that fewer people in Scotland are tending to live in smaller households compared to the assumptions of the principal household projection. This has been driven by a combination of hidden households resulting from underlying economic conditions as well as by wider demographic changes.

2.21   Another driver of household formation is also the availability of housing itself. If accommodation is not available in the market, new households are less likely to form. Another household projection variant called "constrained housing" has been produced that looks to model a continued economic downturn for the next three years (2012 to 2014). For these years the increase in household numbers has been assumed to be the same as the average annual increase in the household estimates between 2009 and 2011. Beyond 2014, it is assumed that household formation returns to the projected Principal level.

2.22   Figure 2.5 (below) compares each of the seven 2010-based household projection variants for the period 2010 to 2035 with recent household estimates (2001-11) and previous 2006 and 2008-based household projections for council areas within the TAYplan region.
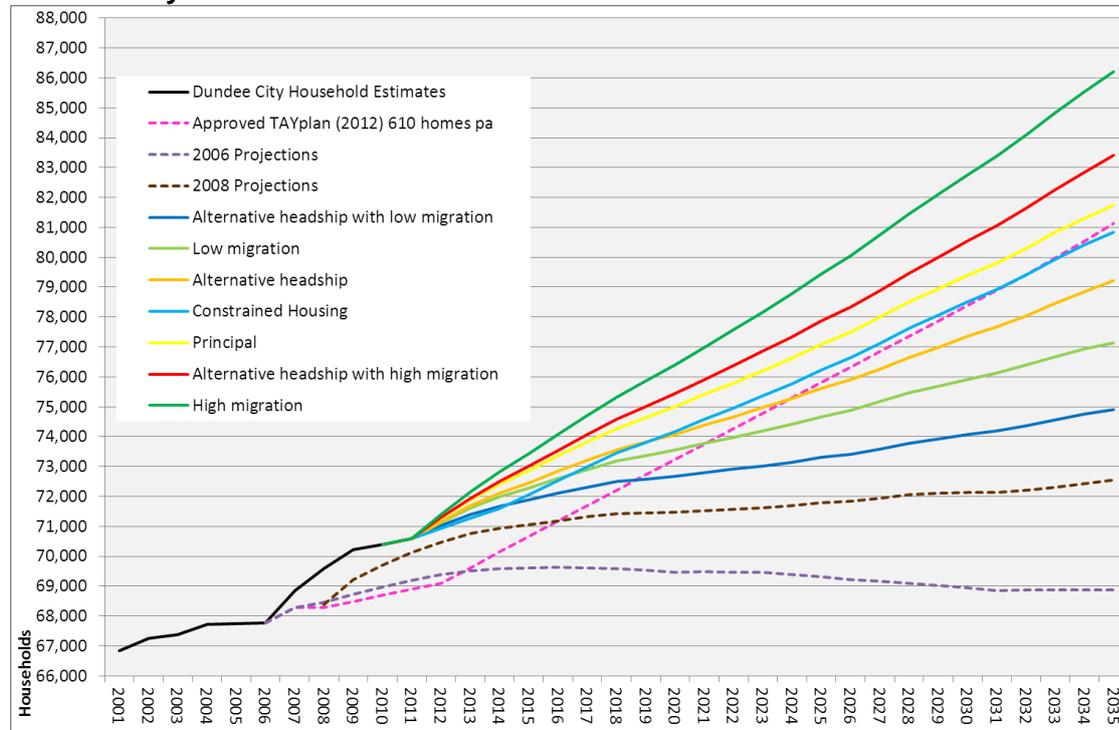
Figure 2.5: Mid-year household estimates 2001 to 2011 compared with the seven 2010 based household projection variants and also the 2006 and 2008 based principal household projections.

Angus:
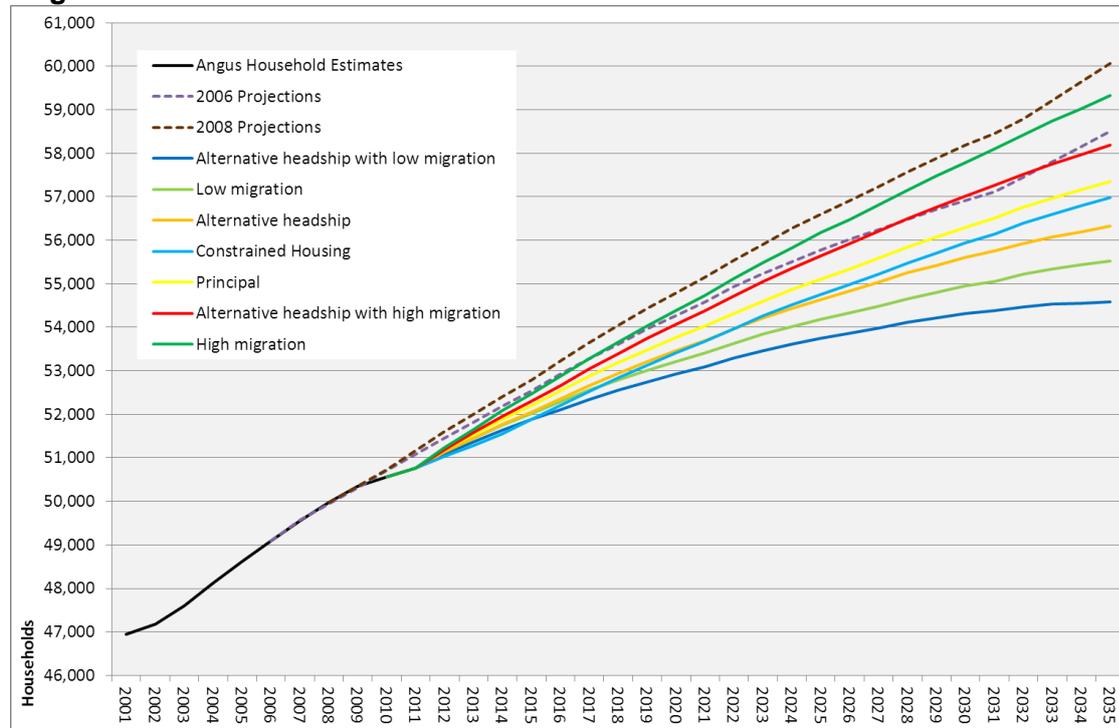
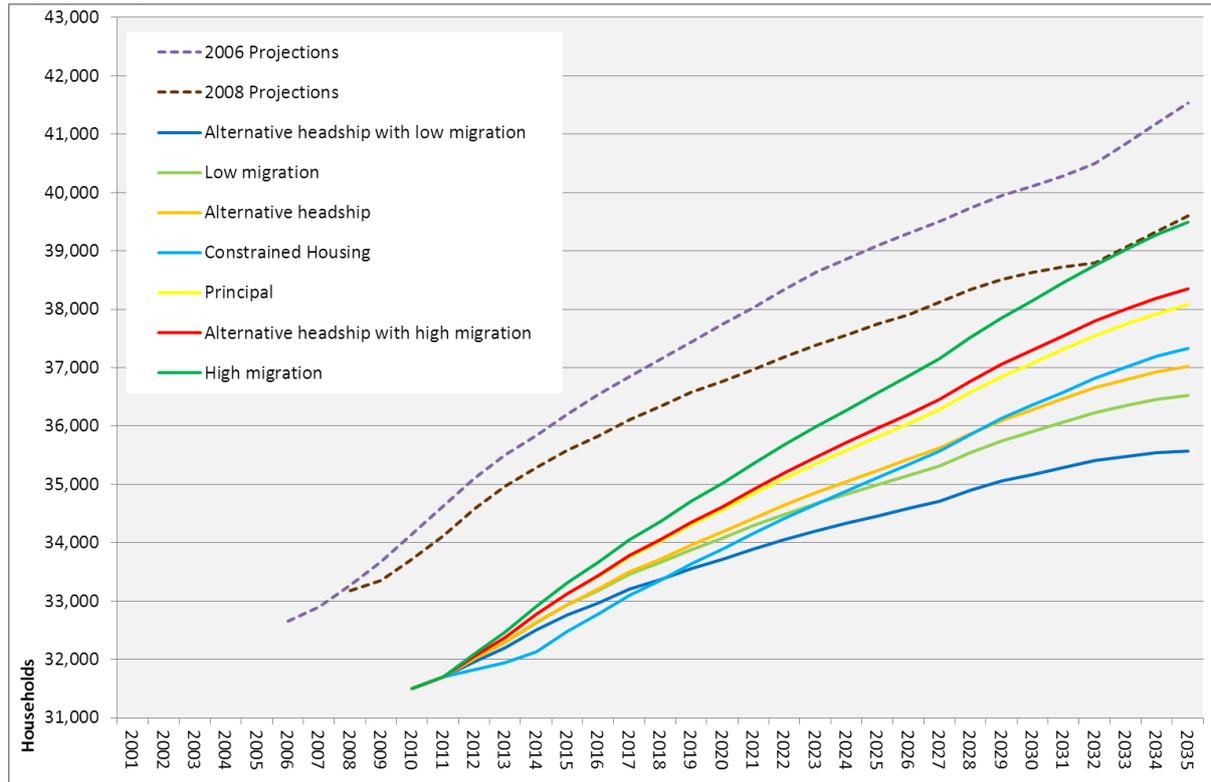Source: National Records of Scotland Mid-Year Household Estimates and 2006, 2008 and 2010-based household projections.

Dundee City[1]:

Source: National Records of Scotland Mid-Year Household Estimates and 2006, 2008 and 2010-based household projections

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[1] In addition to the other variants, the Dundee City Chart shows the household changes associated with the approved TAYplan (2012) Policy 5 build rates of 610 homes per annum.
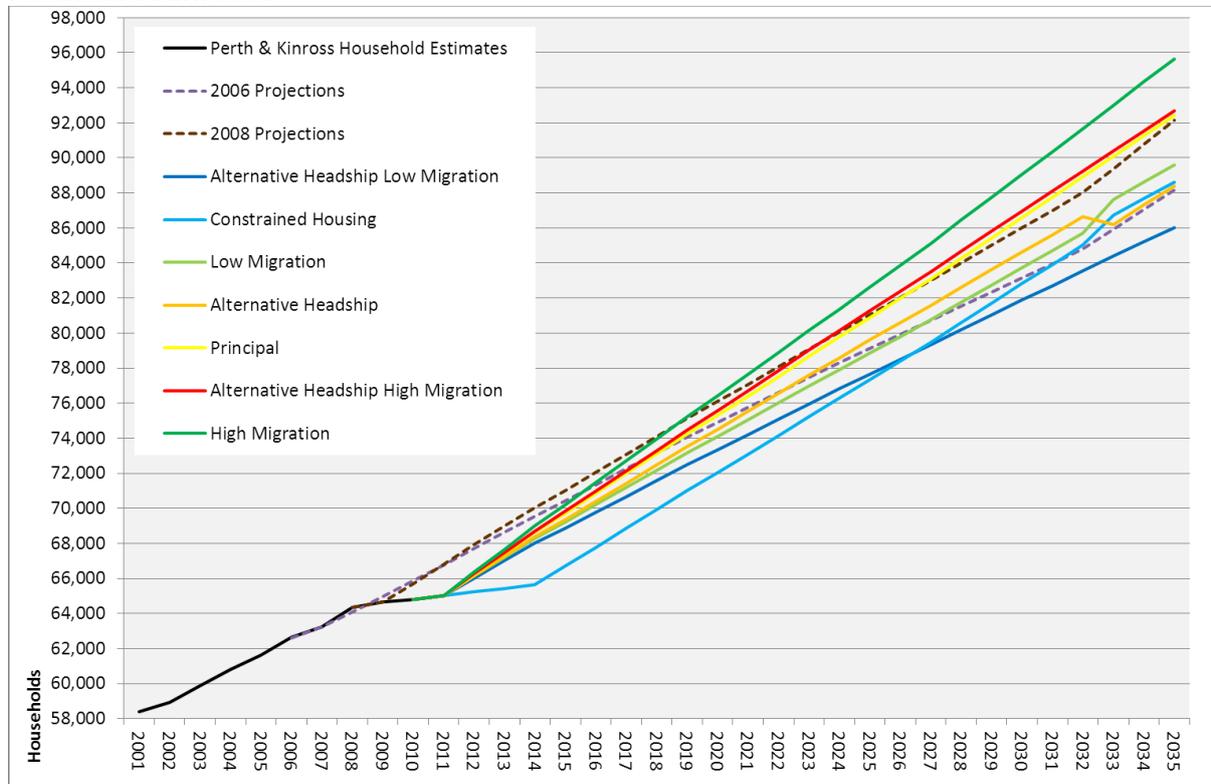
North Fife

Source: National Records of Scotland Mid-Year Household Estimates and 2006, 2008 and 2010-based household projections

Note: Household Estimates are not published for North Fife. The Variant projections are based on the North Fife split from the CHMA's HNDA Tool, the 2006 and 2008 based projections are based on North Fife levels being the result of subtracting the Angus, Dundee City and Perth & Kinross Projections from the TAYplan level projection.

Perth and Kinross:

Source: National Records of Scotland Mid-Year Household Estimates and 2006, 2008 and 2010-based household projections

TAYplan:
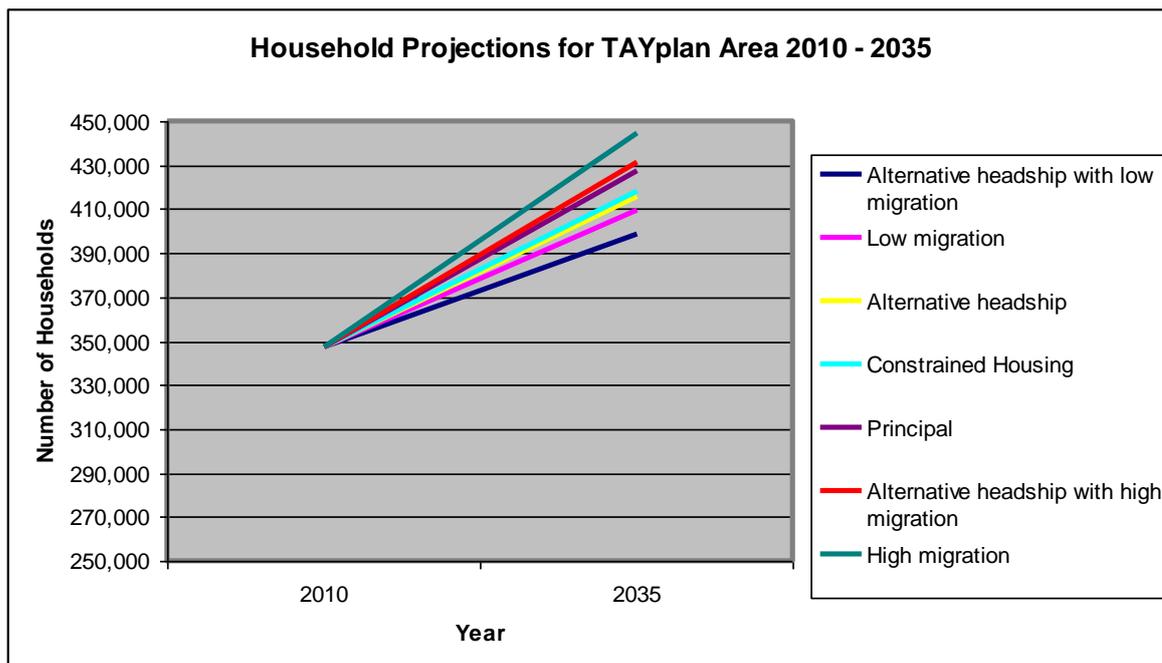
Household Projections for TAYplan Area 2010 - 2035

Source: National Records of Scotland Mid-Year Household Estimates and 2006, 2008 and 2010-based household projections

2.23   The information shown in the graphs for Figure 2.5 (above) has also been presented in tabular format in Figure 2.6 (below) showing only the 2010 estimates position and the projected 2035 households for each of the seven National Records of Scotland 2010-based household projection variants for each council area within the TAYplan region. These seven household projection variants are each contained in the CHMA's HNDA Tool. Figure 2.6 shows that:

- The most significant household growth is forecast in Perth and Kinross (between 33 and 48% growth) with the lowest growth forecast in Angus (between 8 and 17% growth).
- There is very little difference between the principal projection and the Alternative headship with high migration scenarios for any of the local authorities or the TAYplan area as a whole.
- Assuming an alternative headship has the most significant impact in Perth and Kinross and North Fife, where projections are 5% and 4% lower than the principal projection respectively.
- Assuming lower and higher migration levels has the most significance in Dundee City and Perth and Kinross.

2.24   In looking to project changes in the future numbers of households, it can be seen that:

- The internal drivers of fertility and life expectancy are expected to have only a small effect on the future population of the area, slightly increasing the population in all areas, except for Angus.
- Migration is the most significant driver in terms of population change over the next 25 years.
- The population of the TAYplan area is forecast to rise between 8% and 19% over the next 25 years using low and high migration assumptions.
- The number of households in the TAYplan area is projected to increase by between 15% and 28% over the next 25 years. The scenarios focus on the alternative headship variants (see stage 2 – page 130 – below for more details).

Figure 2.6: TAYplan Household Projections (and percentage change) Variants 2010 – 2035

		Angus	Dundee City	North Fife	Perth & Kinross	TAYplan
2010		50,570	70,400	31,500	64,780	347,020
2035	**Alternative headship with low migration**	54,590 (8%)	74,900 (6%)	35,570 (13%)	86,000 (33%)	398,550 (15%)
	Low migration	55,520 (10%)	77,130 (10%)	36,530 (16%)	88,630 (37%)	409,270 (18%)
	Alternative headship	56,320 (11%)	79,210 (13%)	37,025 (18%)	89,610 (38%)	415,680 (20%)
	Constrained Housing	56,980 (13%)	80,830 (15%)	37,330 (19%)	88,380 (36%)	418,330 (21%)
	Principal	57,350 (13%)	81,740 (16%)	38,075 (21%)	92,410 (43%)	427,460 (23%)
	Alternative headship with high migration	58,180 (15%)	83,420 (18%)	38,360 (22%)	92,670 (43%)	431,670 (24%)
	High migration	59,320 (17%)	86,210 (22%)	39,490 (25%)	95,640 (48%)	444,420 (28%)

Source: CHMA HNDA Tool based on National Records of Scotland 2010-based Household Projections

Step 1.2: Future Economic Performance

2.25   Demographic changes within an area create the need for different levels and types of housing provision. However, the economic development of an area is of equal importance in driving change in housing markets, especially due to its effect on migration, which was considered in the previous section.

Fraser of Allander Economic Commentary

2.26   At a national level economic forecasts are only produced over the short term, because they are so susceptible to change. The _Fraser of Allander Economic Commentary (June 2013)_ forecast growth in national GDP for 2013 at 0.9%. The same document revised down the forecast for 2014 from one made three months earlier from 1.7% to 1.6%. The forecast for 2015 was, however, revised upwards from 1.9% to 2.1%. This reflects the fact that recovery from the recession is taking longer than anticipated and there is forecast to be weak expected growth in the rest of the UK and Eurozone – markets to which Scottish exports are heavily reliant. The commentary explains that the latest data shows that little progress is being made to rebalance the Scottish economy away from domestic demand to external or foreign demand, from consumption to investment and from public to private production. A key factor to achieve this is the desired shift in manufacturing which is a major exporter. This is challenging for areas such as TAYplan where the manufacturing sector has experienced a decline in recent years.

2.27   The same publication raised forecasts for national job creation from those made three months earlier reflecting recent good performance and a sectoral rebalancing in favour of labour intensive services. It is forecast that net jobs will rise in Scotland by 12,150 in 2013, 28,000 in 2014 and 38,700 in 2015. Unemployment was also revised down reflecting weakness of productivity and higher employment given the anticipated growth in output. Unemployment on the International Labour Organisation (ILO) measure is therefore expected to be around 213,250 for Scotland at the end of 2013. The level of unemployment is forecast to deteriorate slightly in 2014 due to relatively weak output and employment growth, ending the year at 228,000. As the economy is expected to strengthen in 2015, unemployment is forecast to fall to 190,350 by the end of that year.

Scottish Enterprise

2.28   The Scottish Enterprise *Economic Commentary* presents a similar outlook and forecasts that whilst there are clear signs of recovery, it is likely to be weak due to UK Government fiscal consolidating and weak global demand affecting the demand for Scottish exports.

2.29   Strategies exist at a local authority level to sustain and improve local economic performance and secure sustainable economic growth. There are however no reliable long term projections that quantify what this will mean for levels of employment and income levels as this is difficult to accurately and robustly predict. It is therefore necessary to make reference to past trends and rely on qualitative information to form a picture of how such issues will develop and influence housing need and demand in the future. Chapter 1: *Current Market* shows information on trends relative to employment and income levels.

Single Outcome Agreements

2.30   Single Outcome Agreements (SOA's) are agreements between the Scottish Government and Community Planning Partnerships. They set out how each will work in the future towards improving outcomes for local people in a way that reflects local circumstances and priorities in the context of national priorities. The SOA's give a good indication of anticipated future changes in the area's economy. The content and emphases of the four Single Outcome Agreements for the TAYplan region have been considered in constructing scenarios for future housing need and demand and the variables that differentiate these scenarios. These single outcome agreements are:

- [Angus Single Outcome Agreement](#);
- [Dundee City Single Outcome Agreement](#);
- [Fife Single Outcome Agreement](#); and,
- [Perth & Kinross Single Outcome Agreement](#).

Qualitative Analysis of Future Economy

2.31   Meetings were held with representatives from Economic Development teams in all four councils. The meetings were intended to focus on and potentially quantify known or anticipated growth in local economies to provide a reality check for aspirations. The outcome of the meetings was mostly qualitative information, illustrating the difficulty of predicting and quantifying economic change. In general the meetings identified a number of possible trends in the future including:

- Possible continued decline in manufacturing jobs;
- Possible continued significance of the public sector in terms of employment, albeit with Government austerity;
- Possible growth in the number lower paid jobs in agriculture, food and drink, tourism and care;
- Possible growth in engineering and maintenance jobs related to renewable energy development;
- Planned investment could lead to job growth and an increase in average earnings if spin off benefits are realised; and,
- The strength in life sciences and digital media could create higher value jobs which would help to retain university graduates.

2.32   As well as local drivers of economic performance affecting housing need and demand, the national economic downturn has also led to a fall in levels of new house building. This has restricted supply and house builders are less likely to build speculatively and more likely to build to order. Landowners and existing homeowners are also much less inclined to sell as they are looking for a return to higher values or a return on their investment which in the current climate is not forthcoming. Mortgage lending has been significantly reduced from pre-2008 levels, where little or no deposits were required and Loan to Value ratios even exceeded 100%. Although the numbers of mortgages are now starting to increase, they are still not close to pre-recession levels and significant deposits (as much as 20% in some

cases) are still needed in the majority of cases. This can present a significant barrier to home ownership. The recently announced 'Help to Buy Scheme' may provide some assistance, particularly as it reduces deposits to 5% for homes up to £400,000. But there is also speculation that this will create a housing bubble. In the short term though it is thought that this should assist some in making the transition from private rent or living with relative on to the housing ladder.

2.33   Welfare reform, which includes changes to housing benefit, will also have some impact going forward. Rent arrears may increase as a result of direct payment of benefits and increased deductions made for dependents and under occupation of property. Increased arrears may have knock on effects for housing providers in terms of cash flow and the ability to undertake further house building programmes. Whilst the Private Rented Sector may be relied upon more as mortgage finance is hard to secure, landlords may be more unwilling to let to benefit claimants, especially as the housing element of the Universal Credit will increase in line with the Consumer Price Index rather than reflecting actual rent levels. However, there is still a strong probability that households will need to spend an increasing share of their incomes on housing and that the private rented sector will need to meet at least some of the need that might otherwise have been met by social rent. There are also implications for housing stock as there is expected to be an increased demand for smaller properties.

2.34   In looking to project changes in future economic performance, it can be seen that:
- As well as local drivers, there are many national drivers that can affect affordability;
- Recovery from the recession is taking longer than initially expected and only weak growth is forecast in Scotland, the UK and the Eurozone;
- Numbers of jobs are expected to rise nationally;
- Single Outcome Agreements identify priority areas for growth across the TAYplan area, which includes higher value jobs (digital media, creative and knowledge industries) as well as renewable energy, tourism and food and drink; and,
- Planned investment in the TAYplan area, and in particular at Dundee Waterfront could lead to job growth and an increase in average earnings if spin off benefits are realised.
- This economic analysis, along with the information covered by Step 1.3 below and local knowledge supported the construction of scenarios (see Stage 2 – page 130 below for more details).

Step 1.3: Future affordability
2.35   Affordability is a key issue affecting housing need and demand. Whilst average earnings are considered generally under Future Economic Performance (above), other drivers include house prices and availability of finance.

2.36   The impact of the national economic downturn on affordability of housing has been widely documented. The availability of finance has been severely limited with banks less willing to lend, a tightening of lending products on offer and the need for significantly larger deposits than was previously needed. This means that there is not only less movement in the housing market, but it is also more challenging for first time buyers without access to equity to save for a deposit of the level required. It is unlikely that there will be a return to lending practices experienced before the economic downturn, which means that it is likely that the trend towards an increase in the age of first time buyers will continue. There is also likely to be greater reliance on other tenures to meet people's housing needs, and the rate of new household formation may continue to slow.

Earnings
2.37   Chapter 1: *Current Market* gives details of the current salary levels in each Housing Market Area. Although the CHMA's HNDA tool has the capacity to examine different scenarios of income growth and distribution, there are no published quantitative forecasts of salary levels for the local authority areas or the TAYplan region as a whole.

2.38   The qualitative information gathered in meetings with council Economic Development teams points towards an anticipated growth in sectors including agriculture, hospitality, care and the construction sector (dependent on a recovery in the wider economy). Whilst the numbers of jobs in these sectors would grow, they are amongst the lower paid sectors. This would not result in substantial increases in average earnings in the area. There is some potential for growth in higher paid jobs if anticipated growth in engineering and the offshore energy sector transpires. There is also the potential for further growth in the life sciences and digital media sectors. The numbers of jobs that would result from such growth would not be anticipated to equal the numbers anticipated in the lower paid sectors, so it is therefore likely that average wage levels across the area will remain at or around the same level.

House Prices

2.39   Figure 2.7 shows fluctuations in average house prices across the TAYplan local authority areas (including the whole of Fife). The chart shows clearly that whilst there has been a general increase in house prices from 2003/04 to 2007/08, prices have remained fairly constant or fallen slightly since. There have also been expected seasonal variations throughout the year.

Figure 2.7: Quarterly Median House Prices in TAYplan Area (Quarter 1 2003/04 to Quarter 1 2012/13
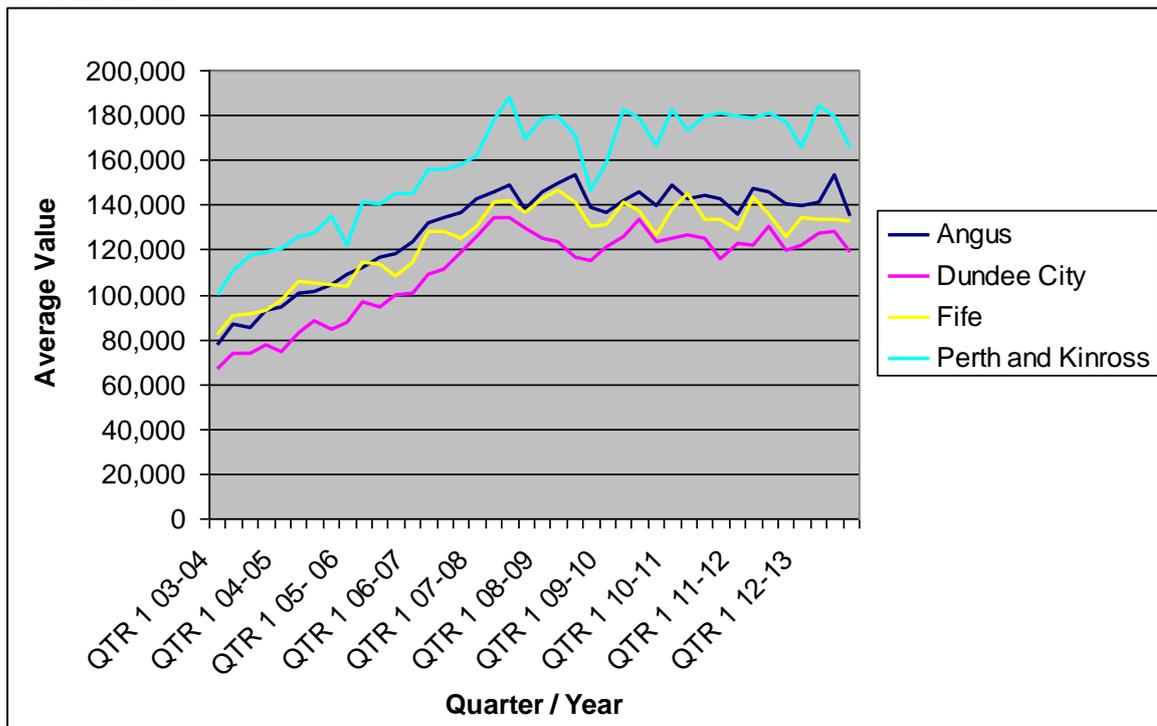
Source: Registers of Scotland

2.40   Figure 2.8 gives more details of recent average residential property prices in Scotland comparing the 4th Quarter of financial year 2012/13 with the 4th Quarter of financial year 2011/12 and with the 3rd Quarter of financial year 2012/13 by Local Authority area. This shows a recent drop in house prices of varying degree across the TAYplan area, both in the last quarter and in the last year in all areas but Fife.

Figure 2.8: Average Residential Property Prices in Scotland (Q4 2012/13) showing annual and quarterly change

Local Authority	Average Residential Property Prices in Scotland				
	Jan – Mar 2013 (£)	Jan – Mar 2012 (£)	Annual Change (%)	Oct – Dec 2012 (£)	Quarterly Change (%)
Angus	134,806	140,427	-4.0	153,451	-12.2
Dundee City	119,137	119,788	-0.5	127,505	-6.6
Fife	132,473	126,174	5.0	133,515	-0.8
Perth & Kinross	165,185	176,667	-6.5	179,233	-7.8

Source: Registers of Scotland

2.41   A recent report from the Office of National Statistics (ONS) (August 2013) showed that UK house prices rose by 3.1% in the first half of 2013. Whilst the same report suggested that Scottish house prices fell 0.9% in the year to June (possibly as a result of delays in rolling out schemes such as the Government's Help to Buy scheme), the Royal Institute of Chartered Surveyors reported in August 2013 that house prices and demand is continuing to grow in Scotland with prices continuing to rise for the second consecutive month.

2.42   Unlike population and household projections future house prices can't simply be projected on the basis of past trends and it is widely acknowledged that the prediction of future house prices is an inherently uncertain process.

2.43   The Office for Budget Responsibility (OBR) was created in 2010 to provide an independent analysis of the UK's public finances. It produces 5 year forecasts for the economic and public finances twice a year. The OBR assumes that house prices will rise in line with the median outside forecast for those external organisations who forecast Communities and Local Government house prices over the next 2 calendar years. In the medium term, OBR expect that house price inflation will rise broadly in line with the long term average rate of earnings growth. This equates to a growth of 3.6% in 2014, 3.9% in 2015, 4% in 2016 & 2017 and then 4.5% after (which is equivalent to 2% inflation and 2.5% real growth).The OBR estimates are the default setting for house price growth in the CHMA's HNDA tool.

2.44   The Royal Institute of Chartered Surveyors Survey (May 2013) found that more surveyors expect Scottish house price to rise rather than fall over the next three months, for a net balance of +3, an improvement from the -5 recorded in April (Scottish Housing Market Review June 2013). Figures 2.9 and 2.10 show house price forecasts for the years 2013 to 2017. As forecasts are so uncertain, they are generally not produced for to cover long timescales.

Figure 2.9: Rettie & Co House Price Forecasts for Scotland, 2013-17

	Scotland Forecasts of Annual Nominal House Price Growth		
	Central Scenario	Downside Scenario	Upside Scenario
2013	1.0%	0.5%	1.5%
2014	2.0%	1.3%	3.0%
2015	4.0%	2.5%	5.3%
2016	5.0%	3.8%	6.5%
2017	6.0%	4.5%	7.5%
Compound annual growth rate 2012 – 17			
	3.6%	2.5%	4.7%
Total growth rate 2012 – 17			
	19.2%	13.1%	26.0%

Source: Rettie & Co Research

Figure 2.10: Rettie & Co House Transactions (sales volume) Forecasts for Scotland, 2013 - 17

Scotland Forecasts of Annual Nominal House Price Growth		
Central Scenario	Downside Scenario	Upside Scenario
2013	1.7%	0.2%	3.2%
2014	4.9%	3.4%	6.4%
2015	5.4%	3.9%	6.9%
2016	6.0%	4.5%	7.5%
2017	6.7%	5.2%	8.2%
Compound annual growth rate 2012 – 17		
	4.9%	3.4%	6.4%
Total growth rate 2012 – 17		
	27.2%	18.3%	36.5%

Source: Rettie & Co Research

2.45   CHMA's HNDA tool can model different house price changes. The nature of which changes are modelled will be determined by the chosen scenarios (see below).

Mortgage availability and levels

2.46   The Scottish Housing Market Review produced by the Scottish Government Centre for Housing Market Analysis includes a significant amount of information on recent trends on affordability of housing. The June 2013 edition sets out the Council for Mortgage Lenders data for Q1 2013 shows that Scottish mortgage advances for house purchase increased by 3.1% year-on-year to 10,000. There was an annual increase in First Time Buyer (FTB) mortgages (9.8%) as against home movers (-1.8%). For 2012 as a whole, there were 46,900 loans in Scotland for home purchase, a 7% increase from 2011, but less than half the level recorded in 2006 (104,900).

2.47   In terms of mortgage product availability and cost, Council for Mortgage Lenders data shows that in Q1 2013 the average first time buyer in Scotland paid 10.9% of their income in interest payments, relative to 17.9% in 2008. This was due to the decline in house prices and interest rates on mortgages following the financial crisis and ensuing recession. On this measure, the affordability of mortgages has improved for first time buyers. Conversely, the average loan to value (LTV) for a first time buyer in Scotland fell from 90% in 2007 to 75% in 2009, as risk aversion caused banks to rein in lending at higher loan to value levels. The average loan to value rate has subsequently edged up to 80% in Q1 2013, but first time buyers still face a substantial deposit barrier, with the average deposit being in the region of £20,000, equivalent to around 68% of average annual income for first time buyers.

2.48   Home owners in Scotland have also benefitted from improved affordability: interest payments fell from 16.1% of income in 2007 to 9.0% in 2011, and edged down to 8.7% in Q1 2013. Since they generally have accumulated more savings than first time buyers, they have been less affected by the deposit barrier – the average loan to value ratio of Scottish home movers has fallen from 76% in 2006 to 71% in 2011 and remains at 71% in Q1 2013.

2.49   According to the 2013 Q2 Bank of England Credit Conditions Survey, lenders reported an increase in the amount of secured and unsecured credit for households, with a further increase anticipated in Q3. Demand for secured lending for house purchase increased significantly in Q2 and it is expected to increase in Q3 for house purchase and re-mortgaging. Whilst these are very short term projections, it shows a cautious confidence that could be extrapolated over the longer term.

2.50   In looking to project changes in affordability, it can be seen that:
- The economic downturn has had a significant impact on affordability as the availability of finance has been severely limited and much larger deposits are usually required.
- Average salary levels in the TAYplan area are not likely to significantly increase or decrease, but rise in line with inflation.

- Whilst house prices have remained fairly constant since 2008, the signs of recovery in the wider economy are fuelling speculation of anticipated increases.

Private renting

2.51   Although median gross weekly earnings (Figure 2.11 below) have risen along a similar trajectory over the last decade for all parts of the TAYplan region these remained, for the most part, below the Scottish average. After 2008 the growth slowed, most markedly in Angus and Dundee City. This suggests a correlation between the national economic downturn and earnings. It also indicates that the period since 2008 has led to median gross weekly earnings falling below the Scottish average for all four areas. Together these factors show the importance of the economy, in particular job and salary security, in the future market choices that people will be able to express. This is particularly the case given that house prices (see Chapter 1: *Current Market*) have not seen substantial growth but have also not fallen substantially over recent years.

Figure 2.11: Median Gross Weekly Earnings (2001 to 2012) Scotland and the TAYplan Council areas including the whole of Fife
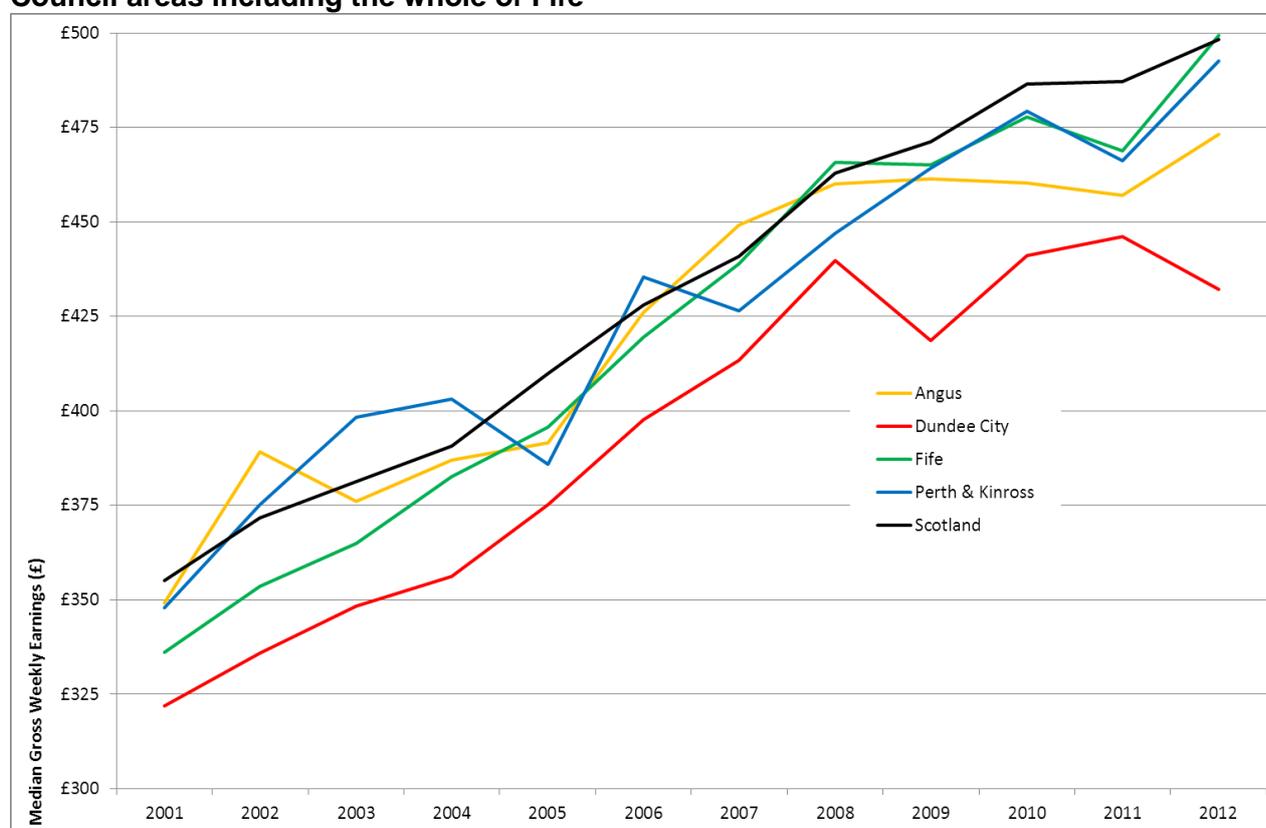

Source: Scottish Neighbourhood Statistics
Note: Figures not available for North Fife and so these figures represent the whole of Fife Council area.

2.52   Figures 2.12 (below) shows average monthly rents for private rented homes at housing market area level in each council covering the TAYplan area. Each council uses different sources for their analysis and not all are available for the same time series. However, the variations between rents for properties with 1 to 4 bedrooms provide reasonable levels of comparison between geographical areas. Although the times series differ for each council area there is broad consistency in considering the averages for 2013, accepting that for Perth & Kinross this covers 9 rather than 12 months. This information therefore serves as an appropriate proxy for private rents. Not unexpectedly rents for properties with more bedrooms were, on average and with a few exceptions, higher than for properties with fewer bedrooms.

Figure 2.12: Average monthly Private Rents in each housing market areas for councils covering TAYplan (for 2013):
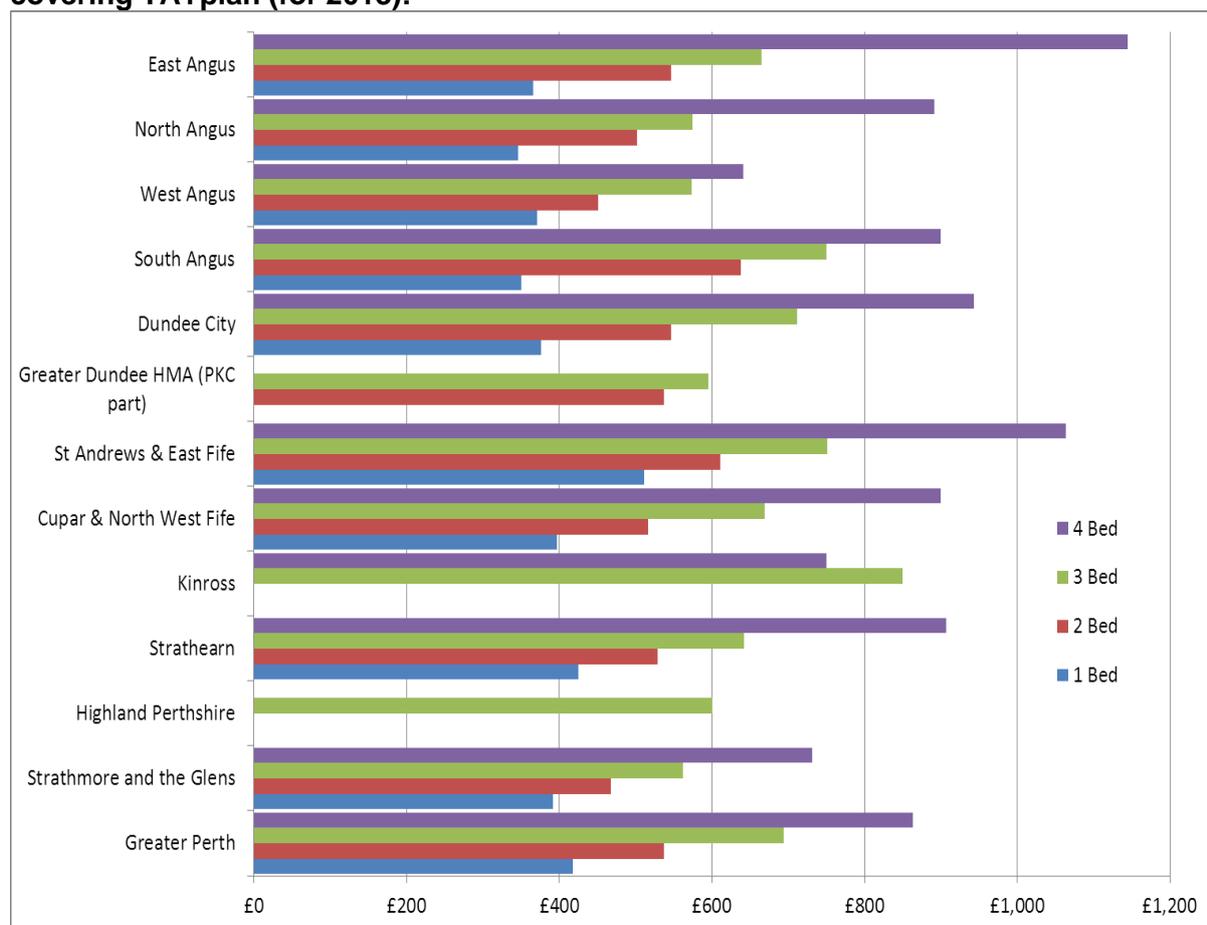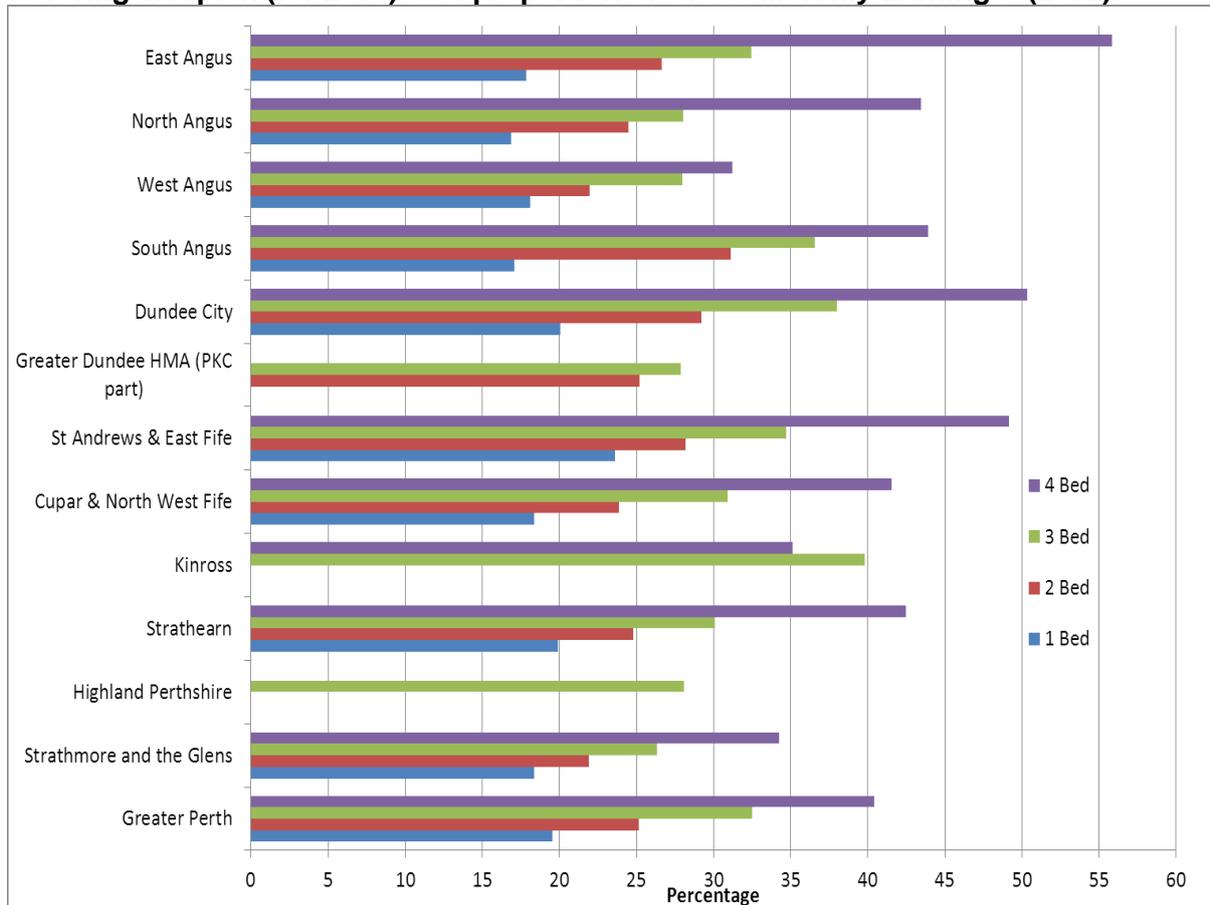

Sources: Angus Council information from Tayside Solicitors Property Centre, Dundee City information from Citylets, Fife Council information from regular internal Fife Council work examining private rents, Perth & Kinross Council information from Perthshire Solicitors Property Centre

Note: The St. Andrews and East Fife Housing Market Area figures include the North Fife part of the Greater Dundee HMA.

Note: Information for Perth & Kinross covers the period March to December 2013 only

Note: Highland Perthshire information only available for 3 bedroom properties and Greater Dundee HMA PKC part information only available for 2 and 3 bedroom properties

2.53   Figures 2.13 (below) compares earnings with rents. It does this by converting median gross weekly earnings for 2012 (the most recent information available) to monthly earnings and comparing these with average monthly private rents per property by number of bedrooms for 2013 (the most recent information consistently available). Monthly gross earnings were calculated by multiplying the median gross weekly earnings by 52 and then dividing this by 12. Figure 2.13 presents the average monthly rent (2013) for each housing market area (see Figure 2.12 above) as a proportion of the gross monthly earnings (2012) for the respective local authority (see Figure 2.11 above).

2.54   Figures 2.13 shows that in the majority of cases average monthly private rents (2013) represented less than 35% of the respective gross monthly salary. However, this rose, markedly in the case of 4 bedroomed properties. Using a three bedroomed property as a proxy for a family home; average private rents represented between 25% and 40% of gross monthly income. Monthly rents for 3 bedroomed properties represented the highest proportion (all over 35%) of gross monthly earnings in Dundee City, South Angus, and Kinross. The CHMA's HNDA Tool suggests that those who spend 25% or less of their earnings on housing will private rent and those who spend 35% or more will social rent. It considers the remainder, those spending between 25% and 35% of their earnings on housing, will be in the intermediate sector. The impact of factors such as welfare reform may alter these in future.

2.55   The information in Figure 2.13 (below) suggests that those with average monthly earnings (2012) seeking to rent 1 bedroom properties (2013) in all housing market areas and 2 bedroom properties in most housing market areas will, on average, be able to meet their needs by private renting. But those with average monthly earnings (2012) in East Angus, South Angus, Dundee City and St Andrews & East Fife seeking to rent 2 bedroom properties would need to do so in the intermediate sector. Those with average monthly earnings seeking to rent 3 bedroom properties in all housing market areas except for South Angus, Dundee City and Kinross and those seeking to rent 4 bedroom properties in Strathmore & Glens and West Angus would also be met by the intermediate sector. Those with average monthly earnings or less seeking to rent 3 bedroom properties in South Angus, Dundee City and Kinross and seeking to rent 4 bedroom properties in all market areas except for Strathmore & Glens and West Angus would need to be met by the social rented sector. This illustrates the importance of earnings in relation to private renting at this point in time and in the future given the anticipated changes in rents set out in the various scenarios detailed in this chapter (See Stage 2 Page 130 below). Welfare Reform and other spending pressure such as rising energy prices each present challenges for renters in the future market. However, with welfare reform in particular, the private rented sector and the intermediate sector will both play a more prominent role in the future housing market.

Figure 2.13: Average monthly Private Rents in each housing market area for councils covering TAYplan (for 2013) as a proportion of Gross Monthly Earnings* (2012):

Sources: Scottish Neighbourhood Statistics for Median Gross Weekly Earnings, Angus Council information from Tayside Solicitors Property Centre, Dundee City information from Citylets, Fife Council information from regular internal Fife Council work examining private rents, Perth & Kinross Council information from Perthshire Solicitors Property Centre
Note: The St. Andrews and East Fife Housing Market Area figures include the North Fife part of the Greater Dundee HMA.
Note: Information for Perth & Kinross covers the period March to December 2013 only
Note: Highland Perthshire information only available for 3 bedroom properties and Greater Dundee HMA PKC part information only available for 2 and 3 bedroom properties

Note: *Monthly gross earnings were calculated by multiplying the median gross weekly earnings by 52 (for 52 weeks in a year and then dividing this by 12 (for 12 months in a year).

Stage 2: Bringing the evidence together

2.56   The CHMA's HNDA Tool has the capability to measure an almost limitless number of scenarios. Although this is useful it means that all those who use the Tool must be selective in the scenarios they choose to model. Therefore we have focussed our attention on modelling all of the scenarios we want to understand rather than trying to understand all of the scenarios that can be modelled. The scenarios aim to model potentially different alternative futures as suggested by the evidence in this chapter and elsewhere in this HNDA. In particular they help us to understand both the outcome of the scenario and the circumstances that would be necessary to bring it about.

2.57   The process for determining which scenarios to model started by considering general types of scenario. It was logical to consider what the CHMA's HNDA Tool outputs looked like in a default setting as a comparator and to try and consider how a continuation of recent trends might look. Similarly it also seemed logical to use presently planned house building rates as a comparator. These are contained in approved TAYplan (2012) Policy 5 which sets out annual house building rates at housing market area level for the period 2012-32. Both of these scenarios were considered to be important as reference points to compare any other scenarios with.

2.58   The economy and the jobs market play a key role in influencing migration, household changes and many of the other variables within the CHMA's HNDA Tool. Therefore it was considered best to examine a series of economic scenarios. The most logical perspective seemed to be to mimic what could be anticipated in the economy. This was deliberately based around known potential rather than aspiration to ensure realism. Two other scenarios were then proposed to mimic situations where the economic situation became better or worse. Subsequently a variation of the better economic situation was also developed.

2.59   These scenarios were agreed by the TAYplan-wide Housing Partnership Executive in June 2013. The Executive is made up of housing and planning leads from TAYplan and the four councils. The Operational Group, who have prepared this HNDA, then began to examine the variables needed to construct these scenarios.

For more explanation of the Partnership arrangements for this HNDA see Appendix 3.

2.60   The first stage of scenario work focussed on 'telling the story' of each scenario using the variables in the CHMA's HNDA Tool. This built consensus around what each scenario was about and, importantly, used professional and local knowledge to construct a realistic scenario. This gives us confidence that the variables we have chosen link to the purpose of the scenario and also make sense when considered together.

2.61   The second stage of work was then to run these scenarios using the CHMA's HNDA Tool. This has been a genuine process and therefore the similarities and differences between any of the scenarios were only apparent after running the scenarios in the CHMA's HNDA tool. The outputs from this work are described in Chapter 5: *Joining up the evidence*. However, this chapter (*Future markets*) focuses on the justification for the scenarios themselves and the choices about which variables were used to construct them.

Details of the CHMA's HNDA Tool
http://www.scotland.gov.uk/Topics/Built-Environment/Housing/supply-demand/chma/hnda

Constructing the scenarios
2.62   The 6 scenarios (below) in Figure 2.14 are all designed to assist in understanding different alternative futures. The scenarios illustrate a range of possible outcomes for housing need and demand for the period 2012 to 2032. This is the operational time period for the CHMA's HNDA Tool. Whilst a range of possibilities have been modelled and some represent extreme situations, it is important to note that every endeavour has been made to ensure that the range of scenarios does not include unrealistic assumptions (either optimistic

or pessimistic), as it would not benefit the exercise to look at unreasonable and improbable levels of need and demand.

Figure 2.14:Scenarios examined in this HNDA

Scenario 1:	This uses the HNDA tool with all default settings to mimic past trends continue and assumes they continue. This acts as a comparator for all scenarios.
Scenario 2:	This tries to emulate what present policy hopes to achieve. Essentially this is about planning for growth. It serves as a comparator to position present policy against other scenarios.
Scenario 3:	The anticipated economic future. This uses knowledge of short and medium term potential and makes modest assumptions about growth in the economy
Scenario 4:	Better than anticipated economic future. This mimics a wider economic recovery and some of the local sectoral potential becoming reality.
Scenario 4B	Better than anticipated economic future. This scenario was developed after running the other five scenarios to understand the implications of a high migration scenario.
Scenario 5:	Worse than anticipated economic future. This mimics the recovery not taking hold and a situation where not all sectoral potential is realised and where changes elsewhere offset the benefits.

2.63   A number of the variables in the CHMA's HNDA Tool were kept the same for each of the scenarios. The section below sets out the justification this (this has been tabulated for ease of reading:

Variable	**Justification**
Backlog and Newly arising Need	The HNDA Tool allows users to run with the in-built 'Waugh Method' or to use an alternative of their choosing. The backlog need figures reflects backlog need where a net new build housing solution is required. In situ and other solutions are considered independently of the CHMA's HNDA Tool. The Waugh Method uses statutory homeless in temporary accommodation as a proxy for backlog need. However, examination of a series of factors contributing to backlog need has been carried out by the four councils in the TAYplan area. This thinking is considered to be more rigorous and the outputs from this exercise have been used. The detailed justification for the backlog need figures has been set out in Chapter 4: *Estimates of Current Housing Need.*
Backlog and Newly arising Need clearance	The HNDA tool allows users to vary the timescale for clearing the backlog need through new build. The default using the Waugh Method assumes 5 years. Each council has made a judgement based on the scale of backlog need identified and programmed solutions to determine a realistic length of time for backlog clearance. This assumption is then applied to each scenario. In each case the clearance period was considered to be 10 years in line with the Scottish Government's Local Housing Strategy guidance.
CACI or small area income data	Both the CACI and Small Area Income Data represent average household incomes. Both are slightly different but are provided in the CHMA's HNDA Tool to give authorities a choice about which they find most suitable. There is no wrong choice here.

CACI data	CACI data was chosen because this is also released in the Scottish Government data-pack to local councils each year and was used for previous HNDA exercises. It therefore provides a consistent comparator.
Income ratio **4 x income (equivalent to 3.2 x income for a 75% mortgage)** **Except for backlog need calculation where 2.6 x incomes for an 80% mortgage was used**	The CHMA's HNDA Tool default setting uses an income ratio of 4 which is equivalent to 3.2 x income for a 75% mortgage. This illustrates the likely borrowing capacity for purchasers. Clearly the lending situation will vary from lender to lender and the income ratio will change over time. This assumption remains as a proxy for the whole period. After much consideration no justification could be found for an alternative approach to represent the entire time period and therefore this was accepted for each scenario. The backlog need calculation was conducted outside of the CHMA's HNDA Tool (See Chapter 4: *Current Housing Need*). This exercise applies affordability criteria to the gross backlog need calculation to deduct those capable of meeting their own needs in the market. This uses 2.6 x income for an 80% mortgage. This is based on observations that there has been a shift towards 80% mortgages and that the lowest quartile earners (to whom this particular calculation refers) are unlikely to be able to fund the 5% gap between a 75% mortgage and the Governments Help to Buy Scheme (20% max). Given the different circumstances of this group this calculation is considered to offer a more realistic representation of those who can met their own needs in the market (See Chapter 4: *Current Housing Need)*.
Percentage of Intermediate Market who buy **50% Buy**	This variable indicates the proportion of the market who buy property as opposed to rent. This is not the same as tenure splits, which vary between 50% and 70% for owner occupation across the region. Instead this is about purchase and rental transactions. Similarly given the motivating factors behind the global economic downturn lenders continue to be more risk averse and the vast majority have learned the lessons of ultra-liberal lending. It is therefore considered realistic to hold this variable constant in all scenarios.
Lower i-rent limit **35% or more of income spent on housing = social rent**	This presently says that of the 50% of households who rent (rather than buy) those who spend 35% or more of their income on housing will social rent. No evidence could be found to justify an alternative to this assumption and therefore it has been retained for each scenario.
Upper i-rent limit **25% or less of income spent on housing = private rent**	This presently says that of the 50% of households who rent (rather than buy) those who spend 25% or less of their income on housing will private rent. No evidence could be found to justify an alternative to this assumption and therefore it has been retained for each scenario.

2.64   The appropriate setting for the remaining variables were then determined for each scenario. The details are summarised in the following table and more detailed commentary for each scenario follows in Figure 2.15 (below).

Figure 2.15: Variable Settings for Each Scenario Using the CHMA's HNDA Tool

Variable	Scenario					
	1. Past Trends Continue	**2. Present Policy Continues**	**3. Anticipated Economic Future**	**4. Better than Anticipated Economic Future**	**4B. Better than Anticipated Economic Future with high migration**	**5. Worse than Anticipated Economic Future**
Income Growth	Modest Increases	No input	Modest Increases	Modest increases	Modest increases	Flat
Income Distribution	Flat (no change)	No input	Flat (no change)	Creeping equality	Creeping equality	Creeping Inequality
Household change	Principal	*Approved TAYplan (2012) Policy 5	Alternative headship	Alternative headship	Alternative headship High Migration	Alternative headship low migration
Backlog Need	Inputted values	No input	Inputted values			
Backlog Need clearance period	Inputted values	No input	Inputted values			
House Price Change	Office for Budget Responsibility (OBR) estimates	No input	No real growth (inflation target)	Modest Increases	Modest Increases	Flat
CACI or small area income data	CACI Income data	No input	CACI Income data			
Income ratio	4 (equivalent to 3.2 x income for a 75% mortgage)	No input	4 (equivalent to 3.2 x income for a 75% mortgage)			
Intermediate Rent Growth Assumption	OBR Estimates	No input	No real growth (inflation target)	No real growth (inflation target)	No real growth (inflation target)	Flat
Percentage of Intermediate Market who buy	50% of the market buy	No input	50% of the market buy			
Lower i-rent limit	>=35% income on housing = social rent	No input	>=35% income on housing = social rent			
Upper i-rent limit	<25% income on housing = private rent	No input	<25% income on housing = private rent			

Note: *Approved TAYplan (2012) Policy 5 sets out annual rates of new house building at housing market area level for the period 2012 to 2032 that Local Development Plans should plan for.

Scenario 1 – Past Trends Continue (CHMA's HNDA Tool in default mode)

2.65   This is a comparator scenario where the CHMA's HNDA Tool outputs with all of its variables in their default settings. The only change is that the council determined values for backlog need and clearance timescales have been added. This scenario projects recent trends forwards and includes present assumptions at UK and Scotland level about house prices and changes in incomes. But this does not consider whether all of the variables make sense at TAYplan, council or housing market area level. As this scenario has already been constructed by the CHMA's HNDA Tool there is no requirement to provide further justification for the choice of variables.

Scenario 2 – Present Policy Continues

2.66   The purpose of this scenario is to represent the anticipated future if the present Strategic Development Plan, emerging Local Development Plans' and Local Housing Strategies' policies are implemented. It had originally been intended to mimic this for all of the variables in the CHMA's HNDA Tool. However, this level of sophistication did not exist previously. Therefore this scenario is independent of the CHMAs HNDA Tool and uses the new house building rates set out in TAYplan (2012) Policy 5 for TAYplan, Council and Housing Market Area levels.

2.67   Although it was not possible to directly construct present policy using the CHMA's HNDA Tool the story of this scenario is based on the intended outcomes of Development Plans, Local Housing Strategies and other strategies. These culminate in a scenario story very similar to Scenario 4 '*Better than Anticipated Growth*'. This is because the planning strategies in particular are planning for circumstances that would enable a full economic recovery to take place.

2.68   The planned investment in Dundee (V&A, Waterfront, Renewables) has significant impacts and significant spin off effects. There is sector growth across the TAYplan area in renewables accompanied by a growth in supply chain industries in engineering and maintenance. There is growth in food and drink sectors in Perth & Kinross and growth across the whole region in tourism as connections are made between services and facilities. There is a growth in life sciences and digital media, which does not lead to significant increases in the number of people who are employed, but retains graduates and creates higher value jobs. The general economic growth in the area is supported by recovery and growth in the construction sector.

2.69   The growth in jobs and incomes has a positive effect on income distribution, creating more income equality.

2.70   The household formation rates are still expected to be slower than that originally anticipated in the principal household projections. Whilst the growth in renewables and higher value jobs may bring people to the area, there will also be higher graduate retention, suggesting that migration levels remain as implied by the principal projection as opposed to higher or lower variants. The household change and backlog need are assumed to be the levels associated with TAYplan Policy 5.

2.71   Housing build rates recover to pre-recession levels and there may be a slight increase in house prices going forward, but the availability of property and finance are still limiting considerations. Intermediate rent levels are also expected to grow because whilst more houses are being built for sale, the increasing population and households forming will continue to increase demand for rented property.

Scenario 3 – Anticipated Economic Future

2.72   This scenario represents the anticipated economic future. It is important to note that this is not about future aspiration but instead it focuses on known short and medium term changes in the economy including the impact of regeneration and investments, with wider considerations of the macro-economic situation. This scenario has challenged us to be

realistic about investments, jobs growth and the immediate future but is essentially a modest economic scenario. The variable choices and justification have been set out in tabular format below for ease of reading.

Variable	Justification
Income Growth: – Modest Increases **Income Distribution**: – Flat (doesn't change)	This scenario recognises that planned investment in Dundee (including the V&A, Waterfront, and Renewables sectors) could be significant and could lead to jobs growth and possibly an increase in average earnings. The effects of this may be felt more widely across the Greater Dundee Housing Market Area. Similarly the growth in the renewables sector in mid Fife may have some implications for jobs in neighbouring areas within TAYplan. Any growth in renewables and port activity at Montrose could have implications for North Angus Housing Market Area but may also attract those living between there and Dundee and also Aberdeen in particular, and so this may not lead to major inward migration but instead commuting. Elsewhere there may be an increase in service sector care, hospitality and tourism jobs as well as agriculture and public services. Although there continues to be recognition of the economic potential of this area the sectors described are likely to see the majority of growth in lower and middle paid jobs. This may help to bring some of those presently out of work into employment and could have some effect that increases average earnings. It is also assumed that the present austerity measures and restraint in public sector spending would continue. On its own the public sector represents around one third of employment and therefore a strong degree of spending power in the housing market and for purchasing other goods and services. This combined with welfare reform may add further restraint on spending power and impact both on average earnings and on housing prices. It is also assumed that the general trend of fixed and short term contracts along with reduced working hours in some cases and low wage inflation (e.g. public sector pay freeze) will continue to impact on income growth. It is not anticipated that graduate retention would change substantially under this scenario. The possible investment and growth in the area would have to be considered in the context of a slow recovery in the wider national economy. The significance of small businesses in the TAYplan economy and the possible growth in lower paid jobs would potentially balance out any growth in the average incomes at the higher level. It is therefore anticipated that income distribution would remain unchanged.
Household Change: - Alternative Headship	Evidence has shown that the rate of household formation across the area has been slower than that originally anticipated in 2008 and 2010-based household projections. One of the reasons for this has been that average household sizes have grown (or at least not fallen as anticipated), perhaps as more families arrive, more children are born or newly forming households continue to live at home with parents. We have also seen fewer people moving which has impacted on gross migration flows into and out of the four council areas.

	It is therefore assumed that a lower rate of household formation would continue because of external factors such as availability to finance. The anticipated increase in lower skilled, lower wage jobs would be more likely to attract local applicants rather than those from further afield, but it is anticipated that there would continue to be some growth in the area. For this reason the low and high migration variants were ruled out and therefore the Alternative Headship variant was preferred as this includes the principal migration forecast.
House Price Growth: - No real growth (inflation target)	No Real Growth (Inflation Target) means that house prices increase in line with inflation.

The anticipated growth in some sectors, albeit particularly in some of the lower paid jobs, along with continued demand to buy and sell property would see sales continue to increase and a continuation of some house price growth presently being observed. However, the availability of finance through stricter lending and higher deposit requirements would place some limiting effect on house price inflation. Collectively, it is therefore felt that the overall picture would be of slight growth in house prices. For similar reasons it is felt that there would be limited growth in intermediate rent levels as reliance on rented accommodation would continue. The private rented sector in the TAYplan region tends to be quite responsive to the market and so it is not anticipated that there would be a sudden supply limitation that would overly inflate rental prices. |
| **Intermediate Rent Growth Assumption**: - No real growth (inflation target) | |

Scenario 4 – Better than Anticipated Economic Future

2.73 This represents a situation where the economic outcome is better than that set out under Scenario 3: *Anticipated Economic Future*. In other words; this is a less modest economic scenario where many more of the growth opportunities are realised. It should be stressed however that this is grounded by understanding of known potential in specific sectors. The variable choices and justification have been set out in tabular format below for ease of reading.

Variable	Justification
Income Growth: -Modest increases **Income Distribution:** -Creeping equality	As with Scenario 3 there is an assumption that programmed regeneration such as the V&A and Dundee Waterfront occur as well as investment in renewables such as around Dundee, Montrose and mid-Fife. However, these are assumed to grow and bring about benefits more substantially than under scenario 3. The assumption is that there will be more jobs. There is also anticipated to be more substantial growth in the food and drinks sector in Perth & Kinross for example, Life Sciences and Digital Media and growth in tourism and hospitality. All of these would reflect a stronger national economy where more consumers and businesses are in a position to buy more goods and services.

In this scenario there would be an increase in graduate retention to fill more skilled jobs, particularly in support of offshore engineering and renewable energy sectors. There would be some growth in the higher paid jobs but greater growth in lower paid jobs in agriculture, tourism and hospitality. However, it is anticipated that at least some of the public sector austerity measures would remain as deficit reduction continues.

Collectively this suggests some increases in average incomes as more people return to work and as people move jobs as the economy starts to pick up and as more contracts are won. The growth in jobs along with a backdrop of the recovery is considered to bring the likelihood of greater equality in the distribution of income. In other words we may see those in |

	the middle and lower ends of the income ladder accessing opportunities. Particularly those on short term or part time contracts who may be able to increase the number of hours they work.
	It is also possible that new businesses may choose to locate or set up here as a result of improvements to the area. It is difficult to predict these types of impact.
Household change: -Alternative headship	Evidence has shown that the rate of household formation across the area has been slower than that originally anticipated in 2008 and 2010-based household projections. One of the reasons for this has been that average household sizes have grown (or at least not fallen as anticipated), perhaps as more families arrive, more children are born or newly forming households continue to live at home with parents. We have also seen fewer people moving which has impacted on gross migration flows into and out of the four council areas.
	It is therefore assumed that a lower rate of household formation would continue because of external factors such as availability to finance. The anticipated increase in lower skilled, lower wage jobs would be more likely to attract local applicants rather than those from further afield, but it is anticipated that there would continue to be some growth in the area. For this reason the low and high migration variants were ruled out and therefore the Alternative Headship variant was preferred.
	Despite an improved economy the recovery does not automatically mean that we will return to the levels and patterns of migration seen during the 'housing boom'. This was in part fuelled by strong job security and liberal lending that enabled certain house move decisions to be made. The nature of the economic growth anticipated here has a strong likelihood of supporting some change in tenure for some people or making their existing situation more comfortable. It may attract many to stay rather than leave and also some to come here to live and work. However, it is not considered that this would bring about the outcomes of the high migration variants. Similarly the alternative headship rates variant continues to recognise the reality that modest increases in house prices (below) and anticipated growth in lower paid jobs may see.
House Price Change: -Modest Increases	*Modest Increases* is a variable designed to mimic long term historic rates of house price growth. This is an increase at a rate of **2% above inflation**. Clearly this hasn't happened in the last few years because of the economic downturn but this is reflective of the longer term.
	Under this more optimistic economic scenario more people would be in a more secure position and there would be a stronger national economy. This would mean that the likelihood of being lent money improves but we cannot expect a return to the situation during the housing boom. We would also expect to see house building rates increase and possibly return to pre-recession levels over time, but not 'overnight'. Overall this scenario is likely to see more sales transactions and more mortgages being agreed. A mixture of more people being able to buy, an increase in the supply of new housing and a more secure economy nationally and locally will have some inflationary impact on prices. However, this is not expected to occur in the same way as the 'housing boom' of the 2000s because mortgage lending is unlikely to take such risks again, which partially fuelled house price inflation before. As such house price changes are expected, on average, to be more reflective of the longer term trend rather than of more recent experiences.

Intermediate Rent Growth Assumption: - No Real Growth Variable (inflation target)	The private rented sector in particular remains quite responsive to demand and as such there is a strong likelihood that supply will not be limited to the extent that it leads to significant price inflation. Some who are presently locked into the private rented sector because of difficulties obtaining credit or saving deposit may be able to buy as a result of improvements in lending and in the jobs market. Overall there is likely to be some growth in rents but the *No real growth* variable is considered to best represent these circumstances. A major fall or rise in rental prices was considered unlikely.

Scenario 5 – Worse than Anticipated Economic Future

2.74   This represents a situation where the economic outcome is worse than the anticipated economic situation in Scenario 3: *Anticipated Economic Future*. This scenario is designed to mimic a continuation of limited economic recovery where the benefits of the economic potential described in Scenario 3 are more muted or are offset by other factors. The variable choices and justification have been set out in tabular format below for ease of reading.

Variable	Justification
Income Growth: - Flat **Income Distribution:** - Creeping Inequality	As with Scenario 3 there is an assumption that programmed regeneration such as the V&A and Dundee Waterfront will occur. However, the knock on effects are considered to be more muted as the national economy falters and impacts elsewhere in the economy offset the growth. Similarly it is also assumed that growth in renewables is less pronounced and brings more limited benefits to the area. It is assumed that the tourism and hospitality sectors do not grow in the same way as scenario 3, possibly stifled by the situation in the wider economy. Similarly the construction sector would be unlikely to see recovery in these circumstances. There would also continue to be public sector spending reform.

Overall this would represent a situation with potential job losses and fewer new jobs than under scenario 3. It is unlikely in this situation that incomes would rise and therefore it is assumed that income growth would be flat. This would mean that incomes remain numerically similar but represent less wealth over time due to inflation. The likelihood of job losses and limited replacement with new jobs along with perhaps more restricted working hours suggests that there could be a growing inequality in income distribution. |
| **Household change:** - Alternative headship low migration | Evidence has shown that the rate of household formation across the area has been slower than that originally anticipated in 2008 and 2010-based household projections. One of the reasons for this has been that average household sizes have grown (or at least not fallen as anticipated), perhaps as more families arrive, more children are born or newly forming households continue to live at home with parents. We have also seen fewer people moving which has impacted on gross migration flows into and out of the four council areas.

It is therefore assumed that a lower rate of household formation would continue because of external factors such as availability to finance. However, the expectation is that fewer people move to the area because of limited job security and some people leave for prospects elsewhere. There would also be an anticipated likelihood that more local moves would also be slowed because of difficulties in the property market (below). For these reason the principal and high migration variants were ruled out and therefore the Alternative Headship Low Migration variant was preferred. |

House Price Change: - Flat	Although there will always be people who need to move home and can choose to buy, this scenario would likely reduce the amount of people in a position to buy. In particular the cost of deposits and limitations on lending would make buying and selling difficult. In such an environment it is difficult to envisage significant price rises and more likely that prices would remain flat.
	The impact on house prices is the same as the impact felt in the recession in that there is general stagnation in the market, but no really significant drop in house prices apart from some properties in the upper price range. This is partly driven by people choosing to hold on to their assets and those who can buy being able to more readily dictate the terms.
Intermediate Rent Growth Assumption: - Flat	The loss of jobs and lower wage inflation increases the reliance on renting as an accommodation choice, especially social rented accommodation, but the general economy and rate of construction means that new housing supply continues to be limited. However, the responsive nature of the private rented market means there is a strong likelihood that any price inflation would be muted. There is therefore expected to be a steady level of inflation in rent levels in some areas but generally for prices to remain flat.

Scenario 4B – Better than Anticipated Economic Future – Higher Migration Variant

2.75   This is an additional scenario run after each of the previous five scenarios. It is an illustrative scenario designed to mimic the implications of increases in positive net migration to the area that is higher than Scenario 4: *Better than anticipated economic future*. It is identical to Scenario 4 in every way except that it uses the Alternative Headship High Migration variant household projection. The variable choices and justification have been set out in tabular format below for ease of reading.

| Variable	Justification
Income Growth: - Modest increases **Income Distribution:** - Creeping equality	All economic factors are assumed to be identical to Scenario 4: *Better than anticipated economic future* (above).
Household change: - Alternative headship high migration	Evidence has shown that the rate of household formation across the area has been slower than that originally anticipated in 2008 and 2010-based household projections. One of the reasons for this has been that average household sizes have grown, perhaps as more families arrive or newly forming households continue to live at home with parents. We have also seen fewer people moving which has impacted on gross migration flows into and out of the four council areas.
	It is therefore assumed that a lower rate of household formation would continue because of external factors such as availability to finance.
	Under this scenario the growth in jobs would attract more people to the region and encourage more people to stay. Although the Alternate Headship household projection variant includes positive net migration the assumption here is that there is much more substantial growth. This would suggest even further job opportunities than envisaged under scenario 4 with perhaps greater graduate retention and more people actively choosing

	to move here and fewer people choosing to leave. Given the nature of jobs creation this would suggest more people moving to take up middle or lower paid jobs in care, agriculture, hospitality and tourism. It may also include some taking up roles in higher paid engineering and offshore sectors.
House Price Change: -Modest Increases	All economic factors are assumed to be identical to Scenario 4: *Better than anticipated economic future* (above).
Intermediate Rent Growth Assumption: - No Real Growth Variable (inflation target)	All economic factors are assumed to be identical to Scenario 4: *Better than anticipated economic future* (above).

Census Comparisons

Changes in Average Household size

2.76   More recent information published from the 2011 Census allows us to calculate average household size using the calculation total population divided by total households. For each council area this shows that the size of households did not shrink as had been anticipated through subsequent household estimates and projections (blue). Instead average household sizes have grown between the 2001 Census and the 2011 Census (red).

Figure 2.16: Comparison of average household size from 2001 Census, 2011 Census and Household Estimates 2000 to 2010 based on subsequent household projections
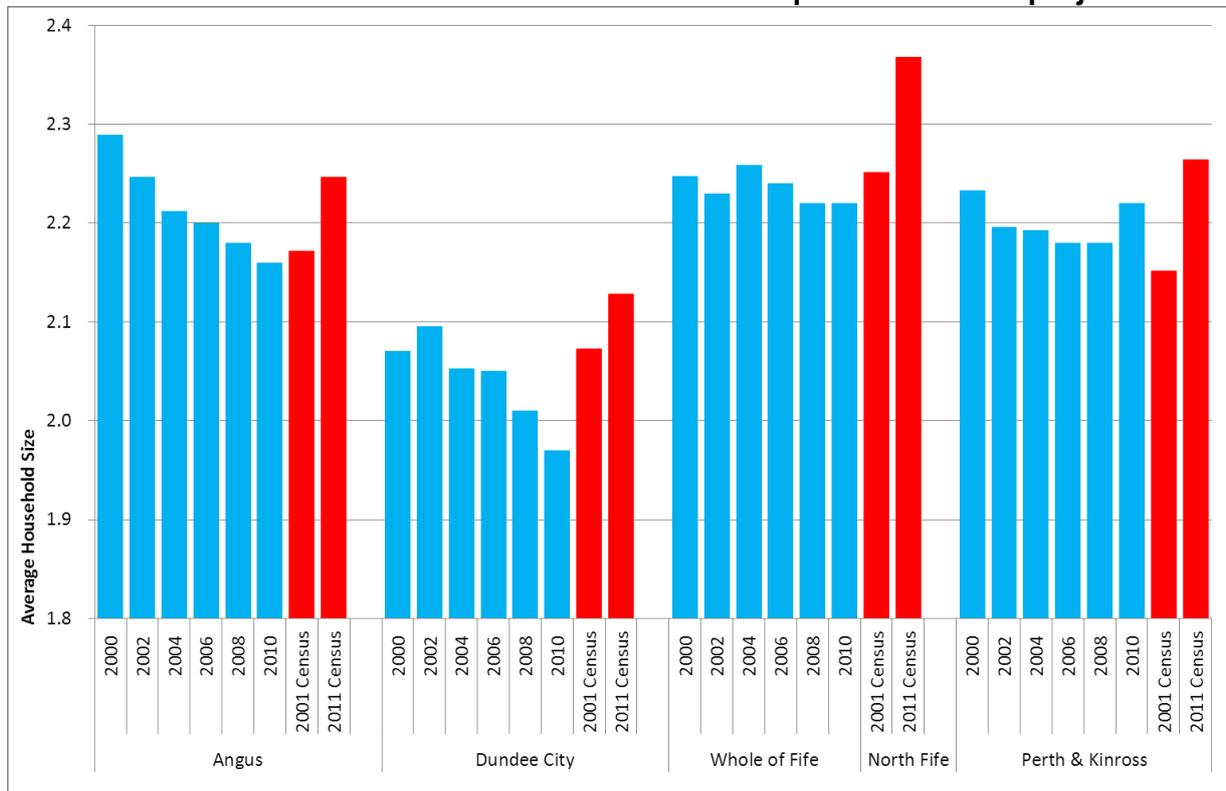
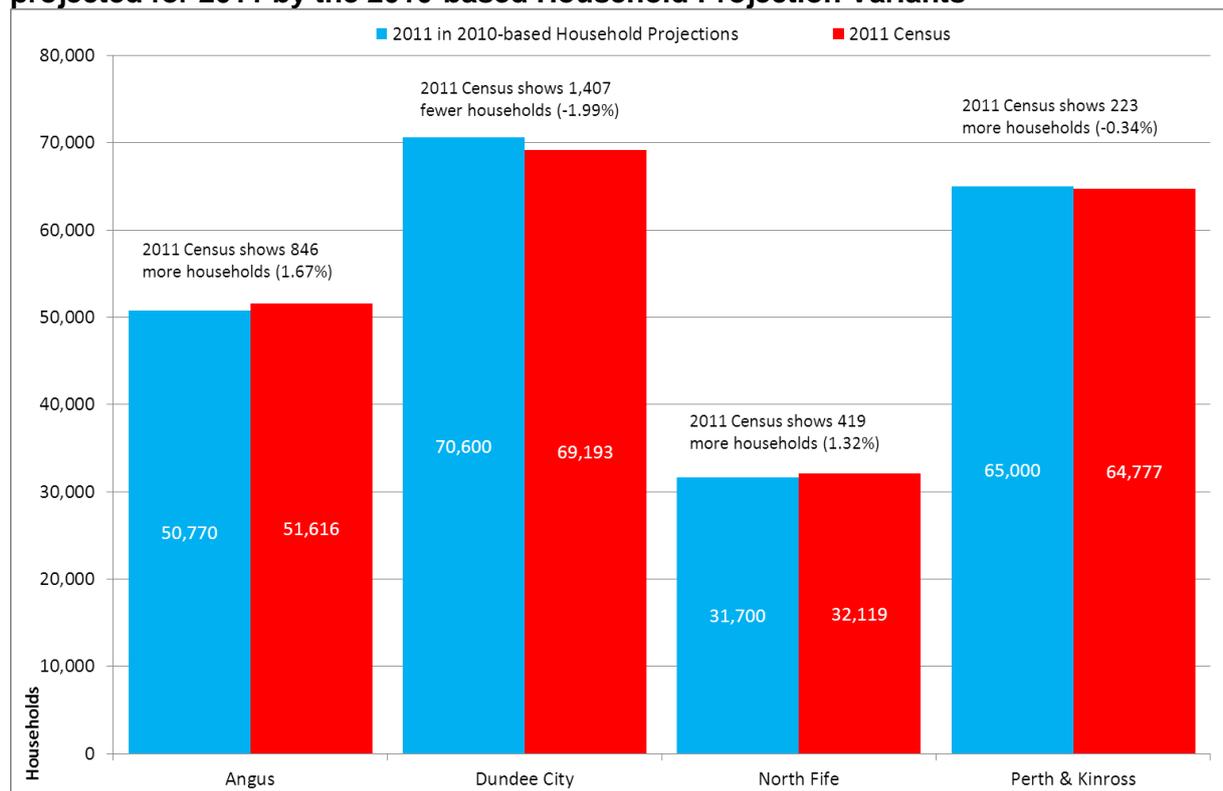Source: National Records of Scotland, 2001 Census and 2011 Census
Note: North Fife household size only available for 2001 and 2011 Census. All Household Estimates and Projections are based on the whole of Fife only.

2.77   It is possible to speculate that this is as a result of living with parents due to house prices and the economic down turn, a spike in the birth rate, anecdotal evidence of more people having three children, men and women living longer, static marriage and divorce rates or a mixture of these. It should be acknowledged that improving economic circumstances may enable some of the hidden households, which have contributed to this trend, to meet their own needs in the market. However, some will continue to be affected by factors such as welfare reform. Similarly hidden households do not represent all of the increase in household sizes and therefore although some changes should be expected in the future these may not necessarily return to previously estimated levels. The key point from the perspective of the CHMA's HNDA Tool, and the chosen scenarios, is that this justified the decision to use the alternative headship projections across the TAYplan area.

Census Households in 2011 compared with 2010-based Household Projection Variants

2.78   The 2011 Census results for total number of households have been compared with the projected 2011 levels in the NRS 2010-based Household Projections. In each variant the 2011 figures are identical. Figure 2.17, below, shows that some authorities saw a slight increase in the number of households and others saw a slight decrease. However, the extent of variation is under 2% in each case. This variation is considered well within any margin of error for projecting forwards over a 25 year period and it is not considered necessary to alter the CHMA's HNDA Tool projections to account for such a small variation.

Figure 2.17: Percentage difference between Households in 2011 Census and those projected for 2011 by the 2010-based Household Projection Variants

Source: National Records of Scotland 2010-based Household Projections, CHMA's HNDA Tool and 2011 Census

Conclusions

2.79   The principal drivers for the future are a mixture of demographic trends and macro-economic/financial factors. The macro-economic and financial factors drive economic activity and job creation which influence demographic trends of migration (the key driver of population for the future).

Demographic trends

2.80   The key demographic implications for the future are about an increasingly ageing population structure. This is apparent with all seven of the National Records of Scotland 2010-based population and household projections. This is driven by people living longer and the implications are that one and two person households, particularly elderly households, will increase and also will represent an increasing share of all households. It is also important to remember that despite the emphasis on an increasingly older population structure the number of families is also expected to increase (these factors are discussed in Chapter 3: *Particular Housing Needs* in more detail). As such each of these demographic factors has been included in the scenarios because each uses the National Records of Scotland 2010-based household projections.

2.81   Analysis of the average household sizes in the region justifies the choice to use the alternate headship rate variants of the NRS 2010-based household projections. Similarly the analysis of the 2011 Census households compared with the 2010-based household projections shows only a 2% variation between what the number of households was projected to be in 2011 and what it actually was in 2011. This is considered a satisfactory margin of error for a 25 year projection period and is not considered to influence the outcome in a way that would meaningfully or adversely impact on policy development. These are considered to be satisfactory analyses of demographic changes that will affect future house building and the economy. These factors have been satisfactorily linked to the economic considerations through the process of scenario construction described in this chapter and the analysis described in Chapter 5: *Joining Up the Evidence*.

Economic/Financial factors

2.82   Although money lending is improving financial markets remain considerably more risk averse than they were during the early part of the last decade. This means that some of the liberal lending practices, including to 'sub-prime markets', are unlikely to be seen in the immediate future. As such the implications of this are that larger deposits will continue to be required from purchasers. This may have the effect of delaying the time at which households can purchase, particularly first time buyers.

2.83   This market wide phenomenon will continue to affect credit markets into the future and will have the potential to restrict access to home ownership. At the same time Welfare Reform has the potential to remove some spending power locally and to shift some people from social to private or intermediate forms of rent. Collectively these factors are major market changers and represent underlying factors that influence how people can express choice in the housing market.

2.84   The national economy is beginning to show some signs of early recovery but it is not possible to estimate the exact implications of this locally with any degree of certainty. However, it seems logical that the public sector will continue to see reform and is unlikely to see any expansion in the short to medium term.

Scenarios work

2.85   The emphasis of the scenarios work has been to construct scenarios to mimic alternative potential futures. The number of possible scenarios that can be created by the CHMA's HNDA Tool is almost limitless. Therefore this approach examines all of the scenarios that we wanted to understand rather than trying to understand all of the scenarios that can be measured.

2.86   Scenarios 1 (Past trends continue – Tool Default Setting) and 2 (Approved TAYplan 2012) help us to clearly understand the application of national trends and how presently planned build rates, respectively compare. This comparison is essential because the value of the scenarios exercise comes from considering new scenarios (3, 4, 4B and 5) with existing ones (1 and 2).

2.87   Scenarios 3, 4, 4B and 5 each mimic the way in which a series of economic factors will change income growth and distribution and subsequently housing and rental prices. They also consider the likely link to the different variants of the National Records of Scotland 2010-based household projections. All of these assumptions build in the considerations set out in this chapter and summarised above.

2.88   These four scenarios have been based around strong local understanding of realistic economic potential and considering how the scenario story in each case would bring about a series of connected changes. The discussion and construction of all four of these scenarios has been couched in the recognition of changing market conditions within the context of a changed money lending culture and factors such as welfare reform.

2.89   These scenarios each recognise that the bulk of jobs growth will be in the agricultural and food, tourism and hospitality and care sectors, amongst others. This is unlikely, on its own to significantly increase the level of migration to deliver the levels associated with high migration variants of the NRS 2010-based household projections. Similarly, even with a better economic situation the public sector is considered unlikely to see major expansion.

2.90   Those scenarios which are more optimistic economically are also those which see higher numbers of households. This reinforces the link between economic success and people's choices about where to live and work. But it also challenges us to recognise that in a better economic situation, with a stronger national economy, there is a higher likelihood that house prices will increase. When considered against the types of jobs and wage levels that are anticipated this indicates the probability that home ownership could become more challenging but it could suggest changes to the rental market. (These issues are explored in more detail in Chapter 5: *Joining Up the Evidence*).

2.91   Collectively this way of approaching Scenarios work has enhanced understanding but has also forced a realistic consideration of how different variables fit together meaningfully. Although the detailed conclusions are covered in Chapter 5: *Joining Up the Evidence*, the initial outputs enable us to understand the total number of new households that would be associated with each scenario (Core Output 3 below). It should be noted that these figures come directly from the NRS 2010-household projection variants listed below. These figures do not constitute new build rates for housing because they only represent newly arising households and do not consider the new homes needed to meet backlog housing need (See Chapter 4: *Estimate of Current Housing Need*).

Core Output 3: Total Number of Future Households	The total number of future households has been an output of the CHMA's HNDA Tool using the chosen scenarios described in this chapter. The scenarios involve four of the seven 2010-based household projection variants as follows: • Principal Projection Variant (Scenario 1) • Alternative Headship Variant (Scenarios 3 and 4) • Alternative Headship Low Migration Variant (Scenario 5) • Alternative Headship High Migration Variant (Scenario 4B) Scenario 2 is based on the Approved TAYplan (2012) which was itself based on the 2006-based household projections with specific work for Dundee City which reflected an alternative trajectory of growth.

Total Number of Households in 2032 at Council level within TAYplan region for each of the 6 scenarios

Scenario	TAYplan	Angus	Dundee City	North Fife	Perth & Kinross
1	263,528	56,760	80,300	37,548	88,920
2	262,180	57,450	79,421	40,499	84,810
3	257,251	55,930	78,050	36,651	86,620
4	257,251	55,930	78,050	36,651	86,620
4B	266,184	57,520	81,640	37,794	89,230
5	247,773	54,460	74,370	35,403	83,540

Source: CHMA Tool outputs and for scenario 2, approved TAYplan (2012) Policy 5 build rates