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Examining impact of VAT reduction and CB income multiplier increase on housing affordability

KEOGH CONSULTING

Executive Summary

Comments by Taoiseach Leo Varadkar at the McGill summer school[1] regarding the prospect of the Central Bank changing rules on mortgage lending has again brought into focus the impact of the lending rules on the affordability of housing and the viability of constructing housing at this price point.

Given, as Mr Varadkar noted ,there are "a lot of people who are now paying more in rent than they would pay for their mortgage" with "many people stuck in a rent trap" – it would seem that some change in the Central Bank rules or level of VAT charged on new home sales might assist affordability of house purchase. In addition, with the upcoming expiration of the help-to-buy scheme (31/12/2019) questions are being asked whether it will continue given its positive impact on housing affordability.

Keogh Consulting have examined current affordability levels and calculated what value of loan a typical FTB can obtain and how much they can possibly save to accumulate a deposit. Given these estimates an affordability level for each household income level was calculated based on the household income distribution published by Ireland's CSO – i.e. the price target that must be met by a housebuilder to enable a purchaser with a given income level buy a home.

The current makeup of the components of sales price of houses and apartments in Q3 2019 was then examined to discuss the feasibility of constructing homes for this market given estimated affordability limits (updating previous work). The impact of increasing the CB loan income multipliers and reducing the level of VAT charged on the sale of new homes on overall affordability and viability of development was estimated for house and apartment developments. A comparison is then made of the cost of a 30-year mortgage v monthly rental payments to examine whether the monthly housing cost can be reduced below average rental levels for similar properties.

The analysis determined the following:

- With a 4.5x income multiplier and a 3.0% VAT rate a loan costing €1,192 per month[2] could be obtained to purchase a viable 3 bed house by the average Irish household (income €66,860). This would be below the average Irish rent of €1,366 per month. This would improve monthly housing cost and give ownership at the end of the mortgage period.
- A price target of between €230K and €395K must be achieved to allow households earning between the 60th and the 80th percentile of the national household income distribution purchase a home.
- It is critical that developers understand income levels in their target catchment area to ensure sufficient demand exists for their developments at a given price point whether selling or renting.
- A mid-range 2-bed 75 sq m apartment is currently estimated to cost €460,000 to deliver. To achieve this price apartment site cost must not exceed €50,000 per unit. This delivery cost has increased by 9.1% since Q1 2018 on account of construction cost increases.
- At a this price level (€460K) the financial viability of apartment development is difficult and there is significant risk in starting projects for a developer – cost control is key in constructing for this segment of the housing market.
- A 3 bed semi-detached house is currently estimated to cost €364,000 to deliver. To achieve this price average site cost must not exceed €50,000 per unit. This delivery cost has increased by 5.7% since Q1 2018 on account of construction cost increases.
- Calculations indicate that at household income levels below €70,000 it may now take over 4 years to save to purchase a 1,100 sq ft house costing €364,000.

[1] Irish Times, July 27th, 2019.

[2] Loan 30 years, 2.75% interest p.a. 1 year of saving.

- Cost inflation is outpacing income growth and this is making affordability more difficult.
- At the bottom of the household income distribution curve it is difficult to deliver given the cost structure of delivery. There are c 1.1M households below the viability threshold – there is a market failure to serve this segment and other measures will have to be taken to provide housing for this segment..
- A reduction in VAT alone will not make housing affordable for households with income below €78K .
- An increase in the CB income multiplier will not make housing affordable for households with income below €69K
- At average Ireland household income levels a reduction in VAT below 4.5% and an increase in the CB income multiplier of above 4.0x will make a viable 3 bed house affordable for the average Irish household. This combined measure could bring an estimated additional 218K households into the affordability net.
- At the 80th percentile income level, €87,585, a VAT rate of 4.5% and a CB income multiplier of 3.9x will make a viable apartment affordable for a household.
- Ongoing low demand for apartments among private buyers is resulting in many new developments being sold to institutions as rental properties.

Thus, through a combination of a decrease in the VAT rate on new homes and an increase in the CB income multiplier an improvement in affordability could be achieved for differing accommodation types. These measures could partly offset some of the decreases in affordability being experienced on account of the increase in cost of delivery outpacing household income growth.

The economic benefit of future ownership versus the cost of the VAT reduction to exchequer should be evaluated in support of this measure to improve current housing affordability.

Introduction

Comments by Taoiseach Leo Varadkar at the McGill summer school[3] regarding the prospect of the Central Bank changing rules on mortgage lending has again brought into focus the impact of the lending rules on the affordability of housing and the viability of constructing housing at this price point.

Given, as Mr Varadkar noted ,there are "a lot of people who are now paying more in rent than they would pay for their mortgage" with "many people stuck in a rent trap" – it would seem that some change in the Central Bank rules or level of VAT charged on new home sales might assist affordability of house purchase. In addition, with the upcoming expiration of the help-to-buy scheme (31/12/2019) questions are being asked whether it will continue given its positive impact on housing affordability.

This analysis looks at the impact of increasing the CB loan income multipliers and reducing the level of VAT charged on the sale of new homes on overall affordability and viability of development. A comparison is then made of the cost of a 30-year mortgage v monthly rental payments under this scenario.

Housing affordability is driven by how much a household can save and how much a household can borrow to purchase a home. How much a household can borrow is set by the Central Bank (CB) in the rules noted. For some time now the CB have chosen to restrict lending by LTV (Loan to Value) and LTI (Loan to Income) with a First-Time Buyer (FTB) allowed to borrow 90% of the value of a house and up to 3.5x their gross income. FTB households must save to accumulate a deposit which is linked to their disposable income and funds left after all expenses including rent have been paid.

The existing Help to Buy Scheme (HTB) makes a tax rebate available equal to 5% of the value of a new home up to a maximum amount of €20,000 – looking to stimulate demand – this is paid directly to a registered contractor. Thus, in determining the demand for housing targeting the FTB or PRS market, a housing supplier must consider how much a household can afford given the factors noted above which determine how much funding a household has available to purchase or rent a home.

[3] Irish Times, July 27th, 2019.

Determining the affordability level

There is a direct link between gross income, disposable income and savings rate and impact on overall affordability – understanding of individual and household income distribution levels is key. (This updates our previous study bit.ly/2018Q2Affordability).

How Much Gross Income Do Households Have?

Based on Department of Finance in 2019 data the distribution of individual income in Ireland is as follows:

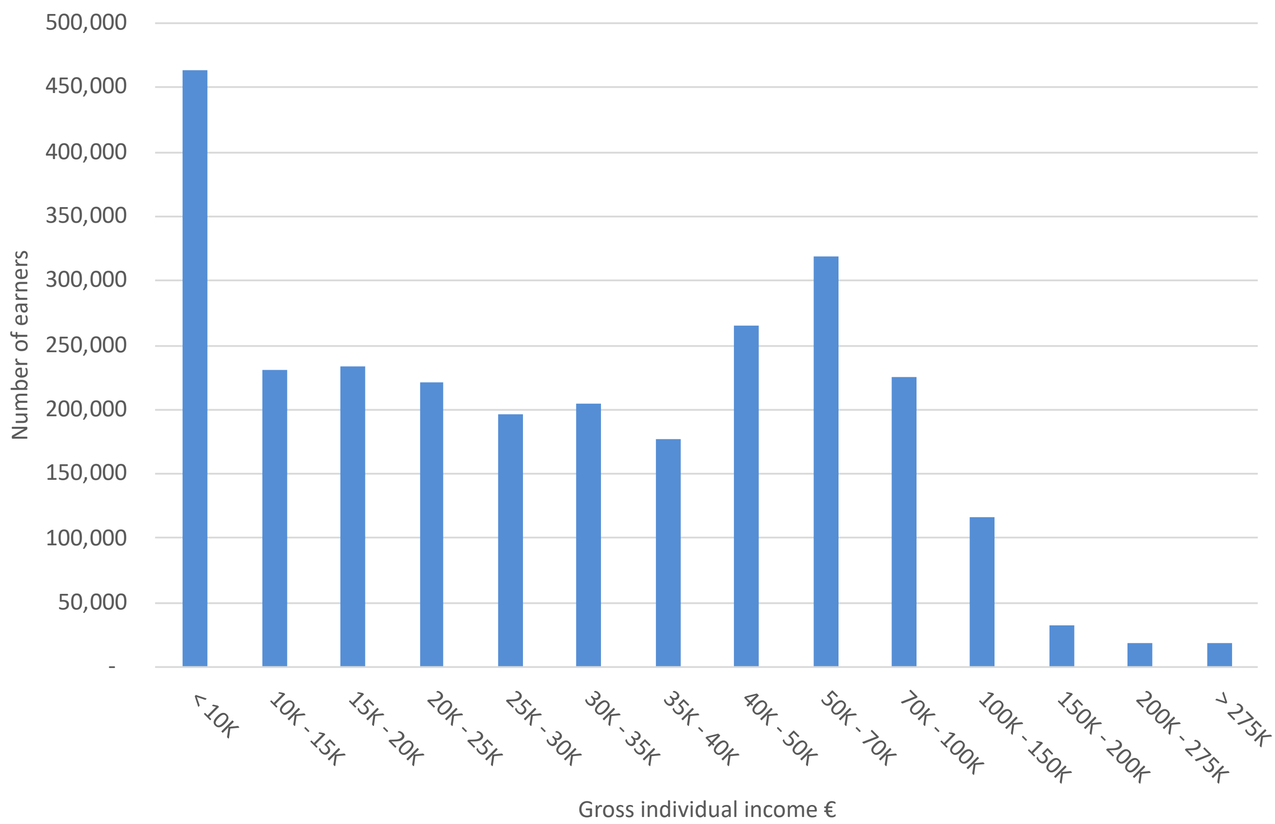


Figure 1 - Income Distribution in Ireland[4]

This data highlights the relative low level of individual income with 67.5% of earners taking home under €35K each year.

Household Disposable Income Levels

While one approach to determining household gross income levels' is to agglomerate individualised data we view that it is more useful to examine gross household income data when considering affordability.

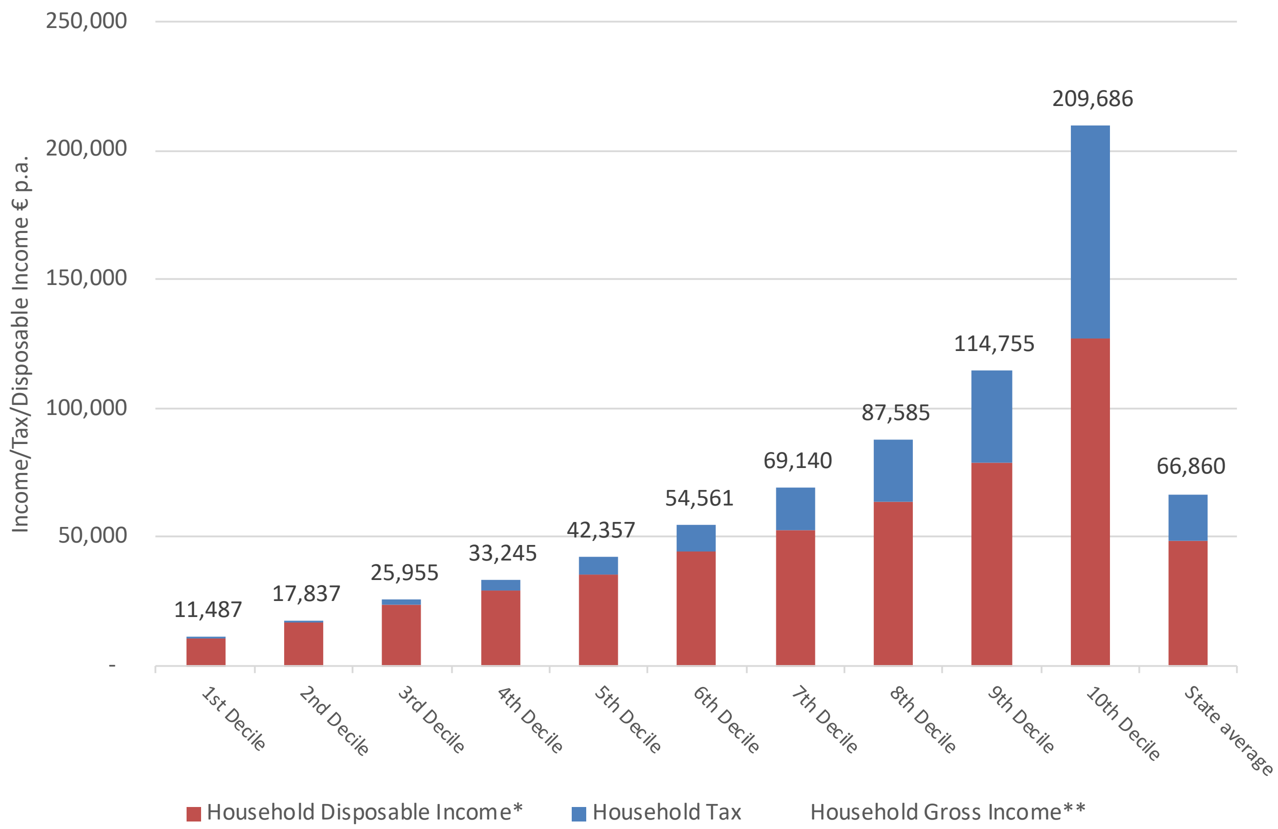
In 2016 the Central Bank[5] modelled the rental market, savings and the accumulation of mortgage deposits in addition to NERI work on disposable income[6] and noted the following:

[4] Source: Tax Strategy Group Paper 2019.
[5] Central Bank. Rental markets, savings and the accumulation of mortgage deposits. C Kelly. F McCann. October 2016
[6] Disposable Income = Gross Income - Income taxes and levies - Social Insurance (PRSI) Contributions. i.e. what is in a households pocket to spend.

- 50% of households have a disposable income of less than €35,000 per annum
- The top 10% of households have a disposable income above €77,000 per annum

Following on. in 2017 the CSO produced figures[7] detailing the Republic of Ireland's household income distribution looking at disposable income. From this 2017 SILC data Keogh Consulting have uplifted the figures (assuming 3.2% p.a. income growth) and estimated that:

- 50% of households have a gross income of less than €42,357
- Average gross income in State is €66,860
- 70% of households have a gross income of less than €69,140
- Only the top 30% of households have a gross income of more than €70,000 per annum



Source: *2017 CSO SILC survey. ** 2017 CSO SILC SURVEY & Keogh Consulting Calculated Estimates.

Figure 2 - Estimated Household Income Distribution[8]

<u>Based on this level of income how much can a household save? – Savings Rate</u>

First time buyer (FTB) Households will save from disposable income to accumulate a deposit. For the period 1999 – 2019 the average savings rate for all households in Ireland was 8.6% of disposable personal income with this being estimated at 11.40 % in Q1 2019[9].

However, the calculations presented here assume that an FTB household will save at an accelerated rate (above the 11.4% noted above) to put aside a deposit. In order to get to an estimate of possible savings capacity the maximum savings rate has been estimated (based on the methodology indicated in a recent

[7] Source: CSO 2017 SILC Survey
[8] Source: CSO 2017 SILC Survey. Keogh Consulting Calculations.
[9] Source: http://www.tradingeconomics.com/ireland/personal-savings

Central Bank Publication[10]) for a range of gross household income levels assuming rental of a 2-bed apartment by a household with no children while saving to buy a home. It is assumed that all households start from zero savings.

FTB Household Income[11]	Estimate of Household Tax Paid[12]	Estimate of Disposable Income	Assumed Non-rent spend[13]	Assumed Annual Rent Payments[14]	Estimated Max Annual Saving	
42,357	2,246	40,111	19,494	16,392	4,225	5th decile
48,459	2,764	45,694	19,494	16,392	9,808	
54,561	4,295	50,265	19,494	16,392	14,380	
66,860	7,801	59,059	19,494	16,392	23,173	Mean
69,140	8,450	60,689	19,494	16,392	24,804	
78,363	12,631	65,731	19,494	16,392	29,845	
87,585	17,104	70,480	19,494	16,392	34,595	8th decile
114,755	30,282	84,473	19,494	16,392	48,587	
162,221	54,122	108,098	19,494	16,392	72,212	
209,686	78,804	130,881	19,494	16,392	94,995	10th decile

Table 1 - Estimated Household Savings Rate For Differing Income Levels

Using this estimate of savings rate the expected Time to Save (TTS) over a range of gross household income levels (*Figure 3 – Annual Household Income Estimated v Time To Save (TTS) For* a) has been calculated. These calculations are based on funding available under current CB rules, and the Government 'Help To Buy' scheme and the estimated price of a basic 1,100 sq ft semi-detached house, €364,600.

[10] Central Bank. Rental markets, savings and the accumulation of mortgage deposits. C Kelly. F McCann. October 2016
[11] SILC data uplifted to 2019 estimate. Source Keogh Consulting Calculations
[12] Keogh Consulting calculation using tax calculation sheet which assumes that the income of the household is evenly split across the two household members.
[13] Kelly & McCann refer to work carried out by the Insolvency Service of Ireland in arriving at a figure of €1,783.94 for monthly household expenditure. Uplifted to 2019 based on inflation adjustment.
[14] Source: Daft.ie Quarterly Report. Q2 2019.

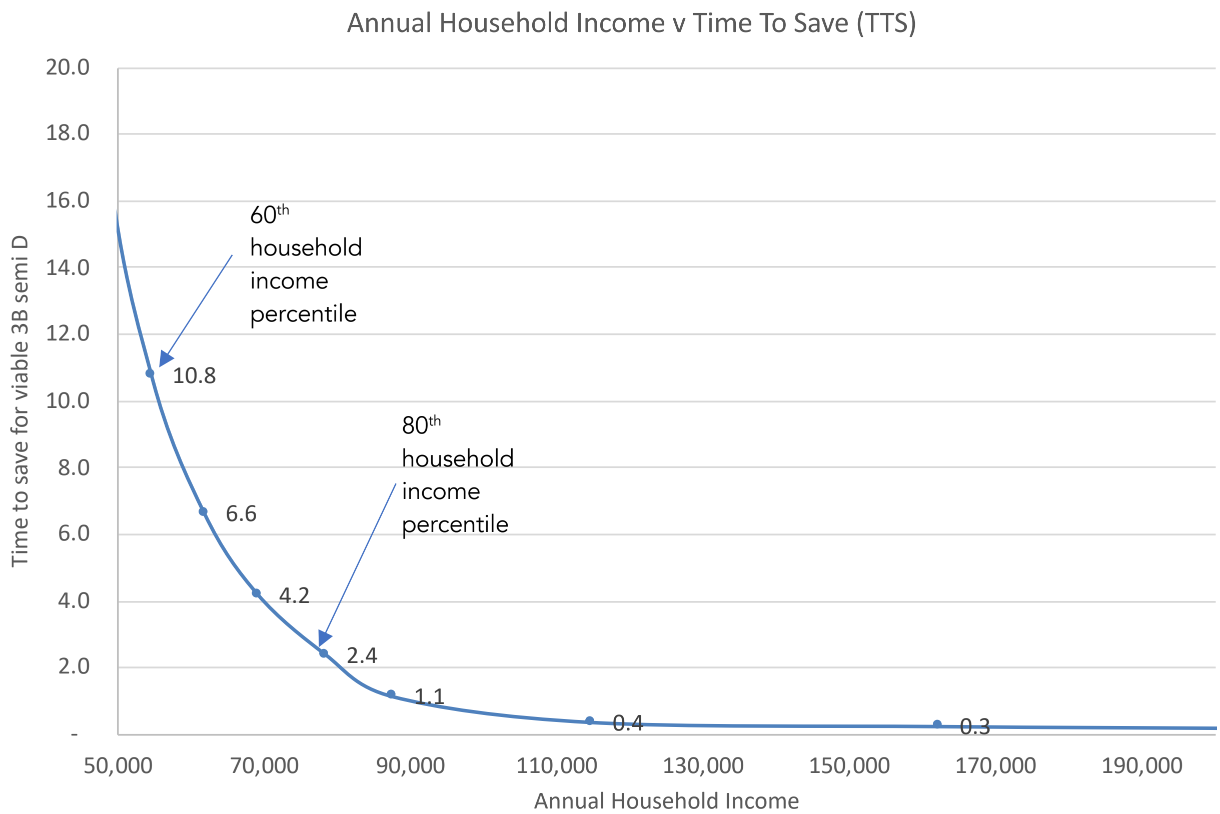


Figure 3 – Annual Household Income Estimated v Time To Save (TTS) For a 1,100 sq ft semi-detached house

From this analysis, at household income levels below €70,000 the estimated TTS is above 4 years – this is a long time to save for a home and it could be argued that this duration makes it difficult for prospective buyers at this income level to do so.

What is the estimated affordability (not viability) limit given these income levels?

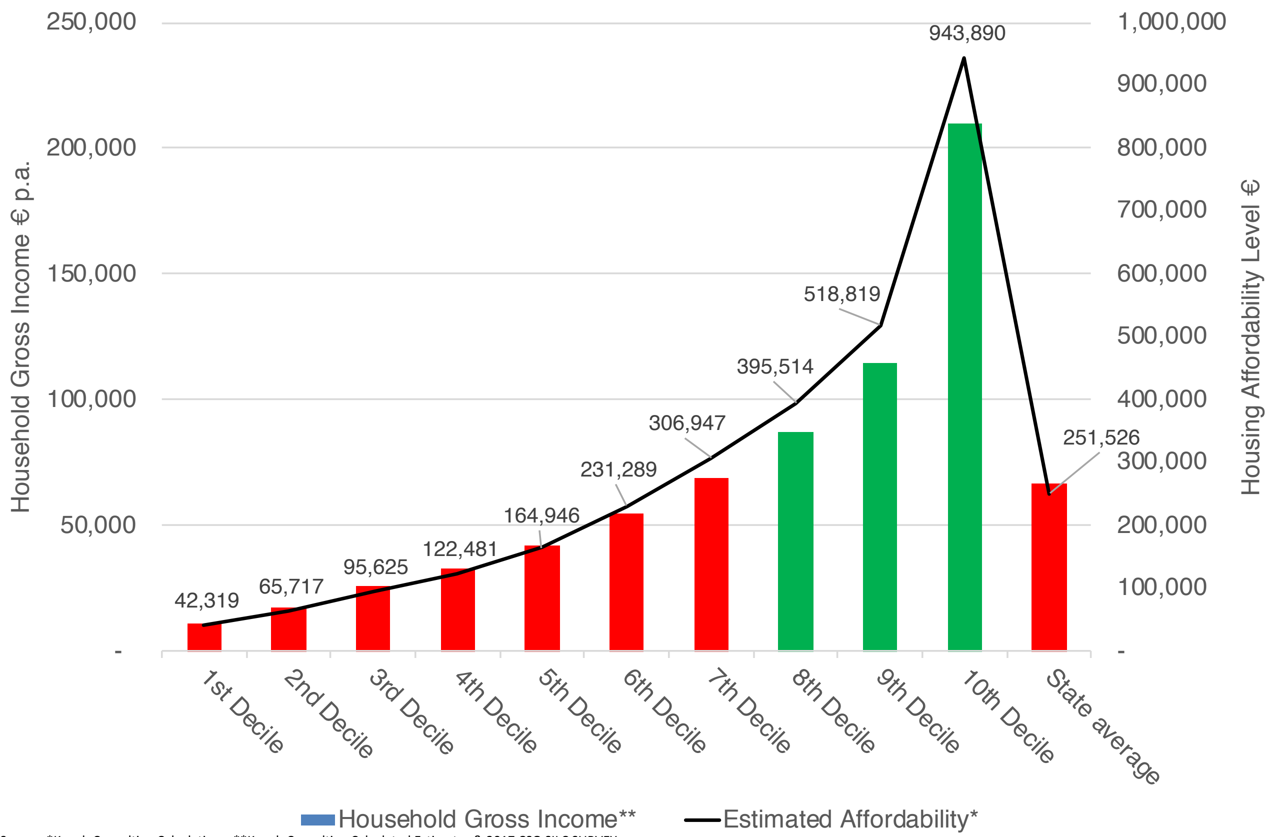
A housebuilder needs to build homes that are affordable for purchasers so that a FTB household can buy the home through obtaining a loan within the limits imposed by the Central Bank lending rules and does not take too long to save to accumulate a deposit (assumed at 2 years).

Based on uplifted CSO data and these calculations (*Table 2 – Estimated Home Affordability Limits Based on Central Bank Lending* Rules) a FTB household with mean income level of €66.9K has an affordability limit of €267.7K, with a FTB household in 75th percentile having earnings of €78.4K and an affordability limit of €349.2K.

Gross Household Income[15]	Adjusted Affordability Limit[16]	Maximum Loan as per CB rules	Required Deposit	Own Funds – 2 years savings	Help to Buy
42,357	164,935	148,249	16,472	1,672	7,891
48,459	198,646	169,607	18,845	5,676	9,225
54,561	230,333	190,965	21,218	9,681	10,560
66,860	293,357	234,010	26,001	17,752	13,251
69,140	305,043	241,992	26,888	19,248	13,749
78,363	349,198	274,270	30,474	25,301	15,767
87,585	392,769	306,548	34,061	31,353	17,784
114,755	518,819	401,644	44,627	52,911	20,000
162,221	732,196	567,772	63,086	94,443	20,000
209,686	943,890	733,899	81,544	135,975	20,000

Table 2 – Estimated Home Affordability Limits Based on Central Bank Lending Rules

[15] Keogh Consulting calculations based on uplift to 2019 of 2017 CSO SILC data
[16] Based on a 2-income household saving for 2 years to purchase a 2-bed property while renting a 2-bed property



Source: *Keogh Consulting Calculations. **Keogh Consulting Calculated Estimates & 2017 CSO SILC SURVEY .

Figure 4 - Estimated Household Gross Income v Affordability

Thus, it can be seen that for the majority of households a viable housing unit (see Table 3 – Estimated Price Build-up – Houses, apartment & co-living unit. Q3 2019 in next section of report) is not within their affordability level with a household having to be above the 70th percentile to purchase a viable unit[17].

[17] 1,100 sq. ft semi-detached house priced at €364,600

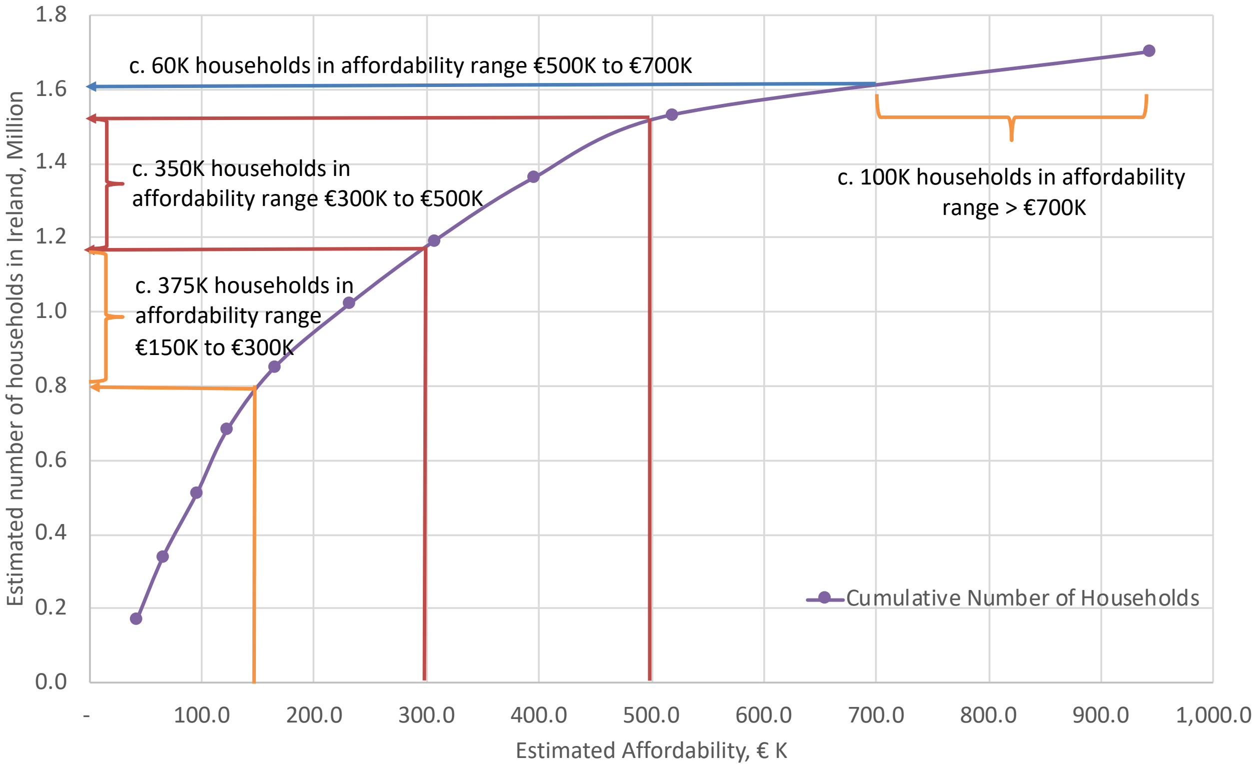


Figure 5 - Housing market affordability band sizes at differing affordability levels[18]

[18] Source: Keogh Consulting calculations based on CSO SILC data 2017.

Viability? Can a home be built to meet this price target?

Experience of residential new build projects in the Greater Dublin area would indicate that the average construction cost[19] (incl. builders profit excl. VAT) for mid-range[20] urban apartment developments is around €2,270 per sq. m. in H2 2019. Uplifting benchmark data from research produced by a range of sources, including SCSI[21], DOELG[22], market commentary, Part V agreements etc. would confirm the order of magnitude of this assumption. For a semi-detached house the average construction cost (incl. builders profit excl. VAT & site development) is around €1,450 per sq. m.

Construction cost is of course one element of the overall price of delivery – to this base cost must be added site purchase, allowances for Part V costs, planning contributions, bank finance, design and VAT where applicable.

	A	B	C
	3 bed semi-detached. 1,100 sq ft	Apartment average size 91 sq m	91 sq m unit in Build to Rent[23]
Construction Cost	€148,200	€206,400	€232,900
Development Contribution	€13,800	€12,900	€13,300
Part V Cost (est.)	€5,000	€5,000	€5,000
Design	€11,900	€16,500	€18,600
Site Development Works	€23,800	€13,000	€13,000
Site Purchase (incl. Stamp)	€50,000	€50,000	€50,000
Development Finance	€6,600	€18,500	€21,100
Marketing, Legal etc.	€9,600	€12,200	€4,400
Construction Contingency	€10,400	€18,200	€20,600
	€279,300	€352,700	€378,900
Risk, Profit, Overhead	€41,900	€52,900	€56,800
Sale Price (ex VAT)	€321,200	€405,600	€435,700
VAT	€43,400	€54,700	€58,800
Breakeven Sales Price (incl VAT)	**€364,600**	**€460,300**	**€494,500**
Q1 2018 Comparable Sale Price	€344,800	€421,900	€452,100
Increase since Q1 2018	5.7%	9.1%	9.4%
Estimated sales value Q2 2019	€364,600	€460,300	€534,400

Table 3 – Estimated Price Build-up – Houses, apartment & co-living unit. Q3 2019

Based on the house sales price, a household income above c. €93.8k will be required to purchase a 3-bed house at this price level with a household income of c. €118.4k required to purchase a 2-bed apartment at this price level. This high household income requirement creates demand risk for a developer which impacts on the overall viability of a scheme and a decision to start.

[19] Q2 2018 including parking excluding siteworks
[20] Mid range urban development not greater than 6 floors. Excluding basement & site development.
[21] SCSI. The Real Costs of new Apartment Delivery. October 2017.
[22] www.housing.gov.ie April 2018
[23] An allowance of €15K is made for furnishing each unit. Amenity areas are included in the gross allowance for each unit

It is to be noted that a housing development will require a considerably larger site than an apartment development.

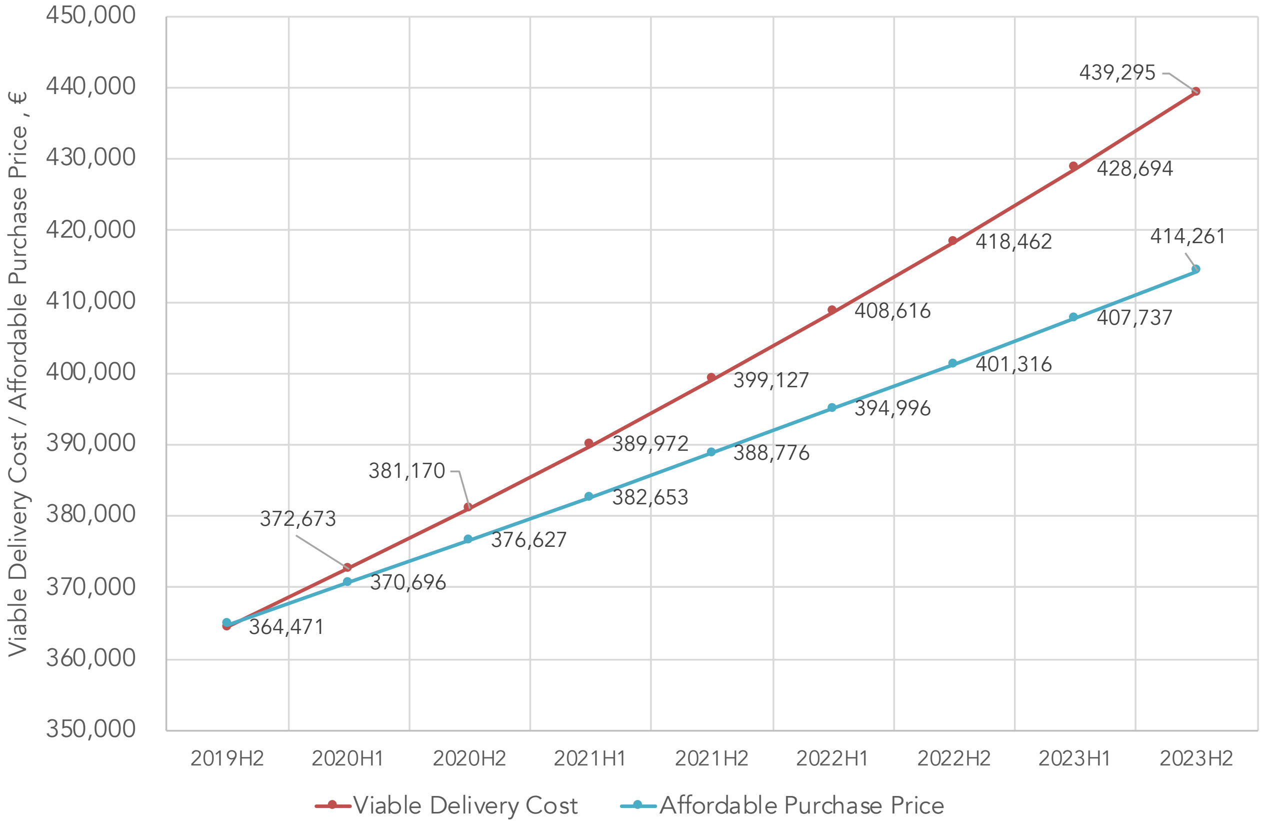


Figure 6 – Forecast trend in affordability and viability over time[24]

Given the high levels of construction cost inflation being currently experienced in the mid-term the viable price of delivery is outpacing the rise in affordability implied by household income growth.

The analysis following (Table 4 - Sensitivity Analysis - Apartment Sales Price & Construction Rate v Pre-Tax Profit per Unit) illustrates that it is difficult for a developer to make a return on apartment delivery that covers the risk inherent in a construction and development project at this sales price level given the sensitivity of overall development viability to construction cost.

[24] Assumes 3.2% median income growth per annum (Source: Income growth & income distribution: A long run view of Irish experience. ESRI. July 2018.) & 6.5% mid-term tender inflation.

		Construction Costs (€ per sq m)					
		-10%	-5%	2,270	+5%	+10%	+15%
Sale Price € incl VAT 981 sq ft Apartment	365,000	(2.6)	(15.9)	(29.1)	(42.4)	(55.7)	(68.9)
	391,000	20.3	7.0	(6.3)	(19.5)	(32.8)	(46.0)
	414,000	40.0	26.7	13.5	0.2	(13.1)	(26.3)
	437,000	59.7	46.4	33.2	19.9	6.7	(6.6)
	460,000	79.4	66.2	52.9	39.6	26.4	13.1
		Profit/(Loss) Before Tax (€,000) per unit					
		at site price € 50K per site					

Table 4 - Sensitivity Analysis - Apartment Sales Price & Construction Rate v Pre-Tax Profit per Unit[25]

Given annual construction cost inflation is running at 5%+ it is clear that input prices are increasing in the market and these prices are likely to increase further when demand for the trades involved in home building increases assuming a projected increase in activity in the sector. Thus, construction cost savings that would facilitate a price reduction are probably going to be difficult to achieve in addition to the basic specification of the homes leaving little to eliminate in addition to NZEB targets coming on stream[26].

		Construction Costs (€ per sq m)					
		-10%	-5%	2,270	+5%	+10%	+15%
Sale Price € incl VAT 981 sq ft Apartment	365,000	(0.8%)	(4.7%)	(8.3%)	(11.7%)	(14.8%)	(17.7%)
	391,000	6.2%	2.1%	(1.8%)	(5.4%)	(8.7%)	(11.8%)
	414,000	12.3%	7.9%	3.8%	0.1%	(3.5%)	(6.7%)
	437,000	18.3%	13.7%	9.4%	5.5%	1.8%	(1.7%)
	460,000	24.4%	19.5%	15.0%	10.8%	7.0%	3.3%
		Profit on Development Cost					

Table 5 - "Affordable" Apartment Price[27] & Actual Construction Cost v DevCo Profit on development cost

The model assumes that 30% equity is required – at equity levels above this the overall IRR will fall.

		Construction Costs (€ per sq m)					
		-10%	-5%	2,270	+5%	+10%	+15%
Revenue (% of Viable Price)[28]	80%	(2.8%)	(17.0%)	(31.5%)	0.0%	0.0%	0.0%
	85%	19.9%	7.0%	(6.3%)	(19.8%)	0.0%	0.0%
	90%	37.1%	25.0%	12.7%	0.2%	(12.6%)	(25.6%)
	95%	52.6%	41.3%	29.8%	18.1%	6.1%	(6.1%)
	100%	66.9%	56.2%	45.3%	34.2%	22.9%	11.5%
		Before Tax IRR on Equity					

Table 6 - "Affordable" Apartment Price[29] & Actual Construction Cost v DevCo Pre Tax IRR on Equity

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[25] Based on a 6 storey 100-unit development of apartments on a 0.3HA site in the Greater Dublin region. There are higher risks in smaller scale developments given the ratio of fixed to variable costs in residential developments..

[26] The NZEB standard will apply to all new buildings occupied after the 31st December 2020.

[27] The "Affordable" Home Price is assumed to be the price that a household with 2 salaries at the average salary level can pay based on the central bank mortgage lending rules.

[28] Assumes 15% markup on total development costs to cover risk, profit & overheads

[29] As per 27

From Figure 7 - Breakeven Analysis for Development it can be seen that the breakeven point on the model development is on the sale of the 58th unit. A 10% increase in construction costs will push breakeven out to the 70th unit.

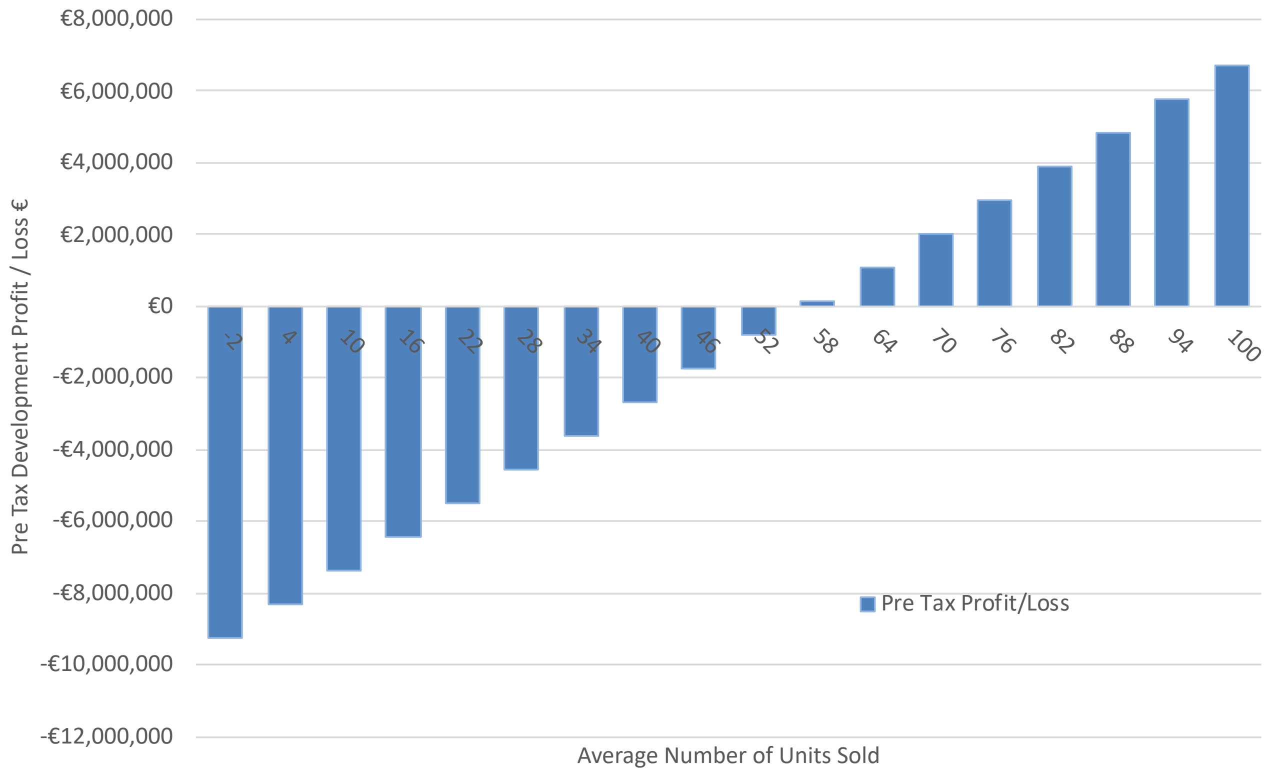

Figure 7 - Breakeven Analysis for Development

Commercial viability for apartment development for private purchasers is still marginal given difficulties regarding affordability for the purchasers (leading to low private demand) and sensitivity of breakeven to input costs. Thus, there is considerable financial risk in developing housing of this type at this price level given the riskiness of the returns involved, current levels of construction tender inflation and the total market size. These market conditions are resulting in large scale apartment schemes being progressed[30] with the objective of selling on to institutional buyers as rental properties.

[30] Sunday Times, 18th August 2019. "Investors move in on capital's apartments"

Impact of adjustment of the Central Bank lending rules and the VAT rate

Our analysis of the impact of a) adjusting the CB income multiplier, and, b) a reduction of the VAT rate on the sale of new homes on overall affordability of purchase of a 1,100 sq. ft standard house[31] at a range of gross income levels is outlined in the following tables: Table 7 - Impact on affordability of change in VAT rate, Table 8 - Impact on affordability of change in CB income multiplier, and, Table 9 - Impact of change of CB multiplier & change in VAT rate on viable house affordability for average income household.

In each case of the analysis the affordability gap is defined as:

Affordability gap = Price of viable house - maximum loan available plus 2 years saving

The analysis highlights the following findings:

1. Change in VAT
   i. At household income levels below €78,365 a reduction in VAT alone will not bring a viable house to an affordable level.
   ii. At this household income level the VAT rate would need to be reduced below 9.5% to make a viable unit affordable at this gross income level.
2. Change in CB Income Multiplier
   i. At household income levels below €69,140 an increase in the CB multiplier alone will not bring a viable unit to an affordable level.
   ii. At this household income level the CB multiplier would need to be above 4.3x income to make a viable unit affordable at this gross income level.
3. Change in VAT & CB Income Multiplier
   i. At the national average household income level, €66,860[32], VAT would have to be reduced to less than 4.5% and the CB income multiplier increased to over 4.0x to make a viable house affordable for an average household. The same outcome could be achieved with a reduction in delivery cost of €29.7K or c. 9.5% of the base (ex VAT) delivery cost with VAT remaining at 13.5%.
   ii. At the 80th percentile income level, €87,585, a VAT rate of 4.5% and a CB income multiplier of 3.9x will make a viable apartment affordable for a household (or other combinations as indicated).
   iii. Our estimate is that an additional 217.5K households could be brought into the affordability net with a combination of reduced VAT & increase in CB loan multiplier (Figure 8 - Increase in number of households in affordability net with combination of decrease in VAT and increase in CB multiplier).
4. Monthly Mortgage Payment v Monthly Rental Payment
   i. With 4.5x CB multiplier and a 3.0% VAT rate on new homes a mortgage of €300.9K could be obtained to purchase a €330.8K house by a household with the mean gross income. Monthly payments on this mortgage with a 30 year loan would approximately cost €1,192 (25 years €1,348). This is to be compared with estimated monthly rental payments assumed in the analysis of €1,366 per month. Thus a saving of €174 could be achieved by purchasing over renting.

[31] As a 1,100 sq ft house can be built at a lower cost than an equivalent apartment.
[32] Source: CSO 2017 SILC gross mean household income (€63,022) uplifted by 3.1% income growth p.a. to 2019 estimate

Delivery costs are high for a multitude of factors – changing VAT and CB income multiplier has a positive impact only within a narrow range of gross household incomes. Thus, with an estimate of over 1.1 million[33] households (60%) remaining at or below the average household income level it is clear that additional measures targeting these households needs to be devised in order to provide affordable housing.

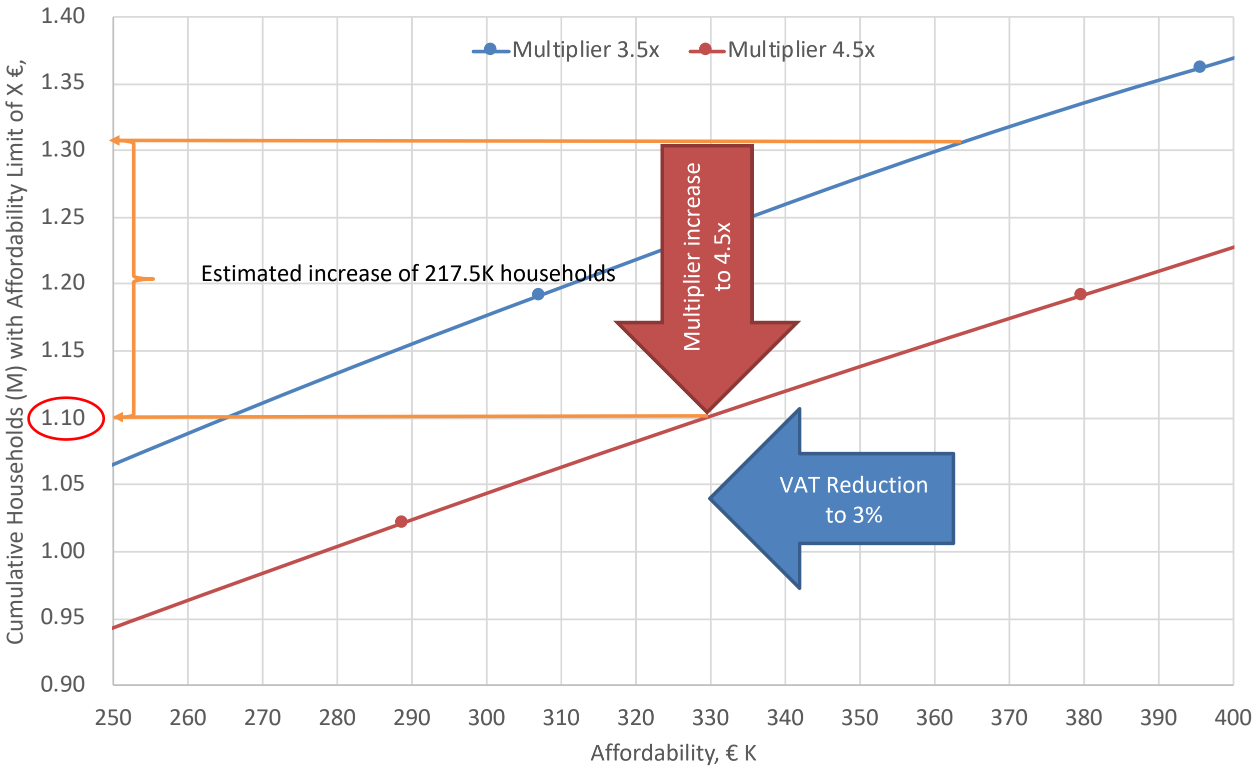

Figure 8 - Increase in number of households in affordability net with combination of decrease in VAT and increase in CB multiplier[34]

[33] Source: CSO 2016 Census

[34] Note: Not all households in the affordability net will be prospective purchasers. From the 2016 CSO census for all households 68% own home outright or own with a loan, and, 27% either rent privately or from local authority/AHB.

		Affordability Gap / (Surplus) with 3.5x Household Income Multiplier										
FTB Household Income	42,357	156,184	160,519	164,854	169,190	173,525	177,860	182,195	186,530	190,865	195,200	199,535
	48,459	122,474	126,809	131,144	135,479	139,814	144,149	148,484	152,820	157,155	161,490	165,825
	54,561	90,787	95,122	99,457	103,792	108,127	112,462	116,797	121,133	125,468	129,803	134,138
	66,860	27,763	32,098	36,433	40,768	45,103	49,438	53,773	58,109	62,444	66,779	71,114
	69,140	16,077	20,412	24,747	29,082	33,417	37,752	42,087	46,423	50,758	55,093	59,428
	78,363	(28,078)	(23,743)	(19,408)	(15,072)	(10,737)	(6,402)	(2,067)	2,268	6,603	10,938	15,273
	87,585	(71,649)	(67,313)	(62,978)	(58,643)	(54,308)	(49,973)	(45,638)	(41,303)	(36,968)	(32,633)	(28,297)
	114,755	(197,699)	(193,364)	(189,029)	(184,694)	(180,359)	(176,024)	(171,688)	(167,353)	(163,018)	(158,683)	(154,348)
	162,221	(411,076)	(406,741)	(402,406)	(398,071)	(393,736)	(389,401)	(385,065)	(380,730)	(376,395)	(372,060)	(367,725)
	209,686	(622,770)	(618,435)	(614,100)	(609,765)	(605,430)	(601,095)	(596,759)	(592,424)	(588,089)	(583,754)	(579,419)
		0.0%	1.4%	2.7%	4.1%	5.4%	6.8%	8.1%	9.5%	10.8%	12.2%	13.5%
		VAT Rate on New Home Sales										

Table 7 - Impact on affordability of change in VAT rate

		Affordability Gap / (Surplus) to Viable Unit with 13.5% VAT on New Residential Units										
Gross Household Income	42,357	199,535	195,064	190,593	186,122	181,651	177,180	172,709	168,238	163,767	159,296	154,825
	48,459	165,825	160,710	155,595	150,480	145,364	140,249	135,134	130,019	124,904	119,789	114,674
	54,561	134,138	128,379	122,619	116,860	111,101	105,342	99,582	93,823	88,064	82,305	76,545
	66,860	71,114	64,056	56,999	49,942	42,884	35,827	28,769	21,712	14,654	7,597	539
	69,140	59,428	52,130	44,832	37,533	30,235	22,937	15,639	8,341	1,043	(6,256)	(13,554)
	78,363	15,273	7,002	(1,270)	(9,542)	(17,813)	(26,085)	(34,356)	(42,628)	(50,900)	(59,171)	(67,443)
	87,585	(28,297)	(37,543)	(46,788)	(56,033)	(65,278)	(74,523)	(83,768)	(92,577)	(101,335)	(110,094)	(118,852)
	114,755	(154,348)	(165,824)	(177,299)	(188,775)	(200,250)	(211,726)	(223,201)	(234,677)	(246,152)	(257,628)	(269,103)
	162,221	(367,725)	(383,947)	(400,169)	(416,391)	(432,613)	(448,835)	(465,057)	(481,279)	(497,501)	(513,723)	(529,945)
	209,686	(579,419)	(600,388)	(621,356)	(642,325)	(663,293)	(684,262)	(705,230)	(726,199)	(747,167)	(768,136)	(789,104)
		3.50x	3.60x	3.70x	3.80x	3.90x	4.00x	4.10x	4.20x	4.30x	4.40x	4.50x
		Central Bank Household Income Multiplier										

Table 8 - Impact on affordability of change in CB income multiplier

		Affordability Gap / (Surplus) to Viable Unit (base €364,471 incl. 13.5% VAT) for mean household income of €66,860 & delivery cost										
VAT on New Residential Homes	13.5%	71,114	64,056	56,999	49,942	42,884	35,827	28,769	21,712	14,654	7,597	539
	12.0%	66,297	59,240	52,182	45,125	38,067	31,010	23,952	16,895	9,838	2,780	(4,277)
	10.5%	61,480	54,423	47,365	40,308	33,251	26,193	19,136	12,078	5,021	(2,037)	(9,094)
	9.0%	56,664	49,606	42,549	35,491	28,434	21,376	14,319	7,261	204	(6,853)	(13,911)
	7.5%	51,847	44,789	37,732	30,674	23,617	16,560	9,502	2,445	(4,613)	(11,670)	(18,728)
	6.0%	47,030	39,972	32,915	25,858	18,800	11,743	4,685	(2,372)	(9,430)	(16,487)	(23,545)
	4.5%	42,213	35,156	28,098	21,041	13,983	6,926	(132)	(7,189)	(14,246)	(21,304)	(28,361)
	3.0%	37,396	30,339	23,281	16,224	9,167	2,109	(4,948)	(12,006)	(19,063)	(26,121)	(33,178)
	1.5%	32,580	25,522	18,465	11,407	4,350	(2,708)	(9,765)	(16,823)	(23,880)	(30,937)	(37,995)
	0.0%	27,763	20,705	13,648	6,590	(467)	(7,524)	(14,582)	(21,639)	(28,697)	(35,754)	(42,812)
		3.50x	3.60x	3.70x	3.80x	3.90x	4.00x	4.10x	4.20x	4.30x	4.40x	4.50x
		Central Bank Household Income Multiplier										

Table 9 - Impact of change of CB multiplier & change in VAT rate on viable house affordability for average income household

		Affordability Gap/(Surplus) to Viable Unit (€460,266 incl 13.5% VAT) for household income of €87,585 & delivery cost										
VAT on New Residential Homes	13.5%	67,498	58,252	49,007	39,762	30,517	21,272	12,027	3,218	(5,540)	(14,299)	(23,057)
	12.0%	61,415	52,170	42,925	33,679	24,434	15,189	5,944	(2,864)	(11,623)	(20,382)	(29,140)
	10.5%	55,332	46,087	36,842	27,597	18,351	9,106	(139)	(8,947)	(17,706)	(26,464)	(35,223)
	9.0%	49,249	40,004	30,759	21,514	12,269	3,024	(6,222)	(15,030)	(23,789)	(32,547)	(41,306)
	7.5%	43,166	33,921	24,676	15,431	6,186	(3,059)	(12,304)	(21,113)	(29,871)	(38,630)	(47,388)
	6.0%	37,083	27,838	18,593	9,348	103	(9,142)	(18,387)	(27,196)	(35,954)	(44,713)	(53,471)
	4.5%	31,001	21,756	12,510	3,265	(5,980)	(15,225)	(24,470)	(33,279)	(42,037)	(50,796)	(59,554)
	3.0%	24,918	15,673	6,428	(2,817)	(12,063)	(21,308)	(30,553)	(39,361)	(48,120)	(56,878)	(65,637)
	1.5%	18,835	9,590	345	(8,900)	(18,145)	(27,391)	(36,636)	(45,444)	(54,203)	(62,961)	(71,720)
	0.0%	12,752	3,507	(5,738)	(14,983)	(24,228)	(33,473)	(42,718)	(51,527)	(60,286)	(69,044)	(77,803)
	0	3.50x	3.60x	3.70x	3.80x	3.90x	4.00x	4.10x	4.20x	4.30x	4.40x	4.50x
		Central Bank Household Income Multiplier										

Table 10 - Impact of change of CB multiplier & change in VAT rate on viable apartment affordability for 80th percentile income household

Impact on government receipts

This would result in a change in government receipts for a 3 bed 1,000 sq ft house as follows:

Estimated Government Receipts			
	1,100 sq ft house	VAT Reduced house	
Builders Corporation Tax	€1,100	€1,100	
Stamp Duty on Site	€1,000	€1,000	
Stamp Duty on House	€3,200	€3,200	
DevCo Corporation Tax	€5,200	€5,200	
Builders Income Tax	€26,000	€26,000	
Other Income Tax	€3,200	€3,200	
Investor CGT on Completion	€12,100	€12,100	
Development Levy & Part V	€18,800	€18,800	
VAT	€43,400	€9,600	
	€114,000	€80,200	
Help to rent cost	€(17,000)	€(17,000)	- Tax rebate
Estimated Net Government Receipts	**€97,000**	**€63,200**	

Table 11 - Estimate of change in Government Tax Take on Construction of 1,100 sq ft semi-detached house with reduction in VAT from 13.5% to 3.0%

A reduction in the VAT charge on new homes (costing €33,800 per unit) would improve the affordability of housing, however, developers must be incentivised to pass on the cost saving to the purchaser – for example through a levy or VAT refund being contingent on a sales price below a guaranteed level.

What is actually happening in the market?

Consensus forecasts indicate that demand based on new household formations lies above 30,000 units per annum. Market commentary is noting that completions, while increasing, are below this level.

	2018	2019e	2020e	2021e	2022e	2023e
Population Estimate	4,857.2	4,905.8	4,954.8	5,004.4	5,054.4	5,105.0
Indigenous net growth assumed	29.8	48.6	49.1	49.5	50.0	50.5
Net migration assumed	35.0	35.0	35.0	35.0	35.0	35.0
Headship assumed	36.36%	36.36%	36.36%	36.36%	36.36%	36.36%
Average household size	2.75	2.75	2.75	2.75	2.75	2.75
Household formation:						
Indigenous growth	10,800	17,700	17,800	18,000	18,200	18,400
Migration flows	14,000	14,000	14,000	14,000	14,000	14,000
Headship change	0	0	0	0	0	0
Sub total	**24,800**	**31,700**	**31,800**	**32,000**	**32,200**	**32,400**
Replacement of obsolete units	6,000	6,000	6,000	6,000	6,000	6,000
Estimated demand	**30,800**	**37,700**	**37,800**	**38,000**	**38,200**	**38,400**

Table 12 - Keogh Consulting model of estimated housing demand[35]

Reviewing the property price register for transactions in H2 2018 & H1 2019 (Figure 10) indicates that 4,142 homes were purchased by first time buyer owner occupiers at an average price of €347,300 (median €335,000) in this period with the majority of transactions taking place in urban areas. It would thus appear that the volume of transactions is significantly below the level of household formation estimated (noting that these figures don't take into account first time renters)

From this analysis a clear correlation can be seen between household income and house prices by county, as well as a clear relationship between house prices and the number of transactions. Regions with higher average incomes have higher prices – however the simple correlation does not apply causation, or the direction of that causation.

It does, however, support the thesis that there is finite demand for housing at a given price level and that the lower than expected level of transactions may be indicative of the fact that prospective new buyers just cannot afford what is currently on sale.

[35] Source: Keogh Consulting calculations from CSO data.

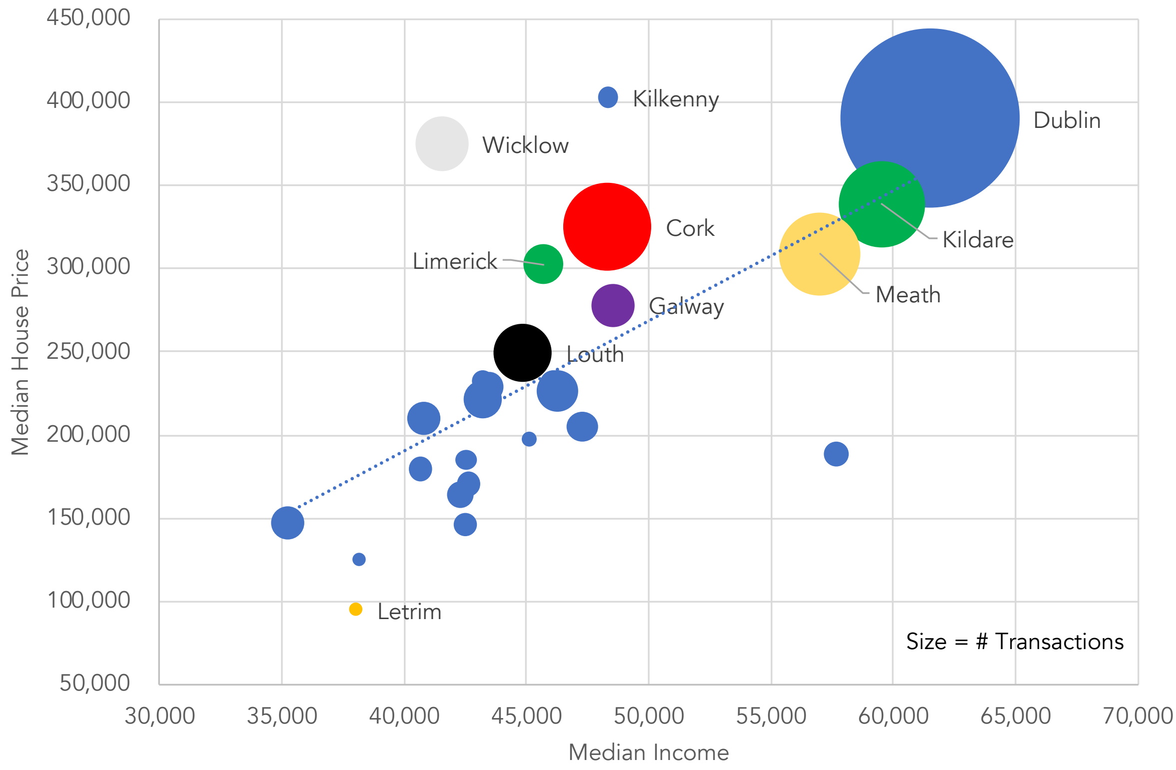

Figure 9 - Median Household Income, House Price and Transaction by County. All Transactions 12 months to June 2019[36]

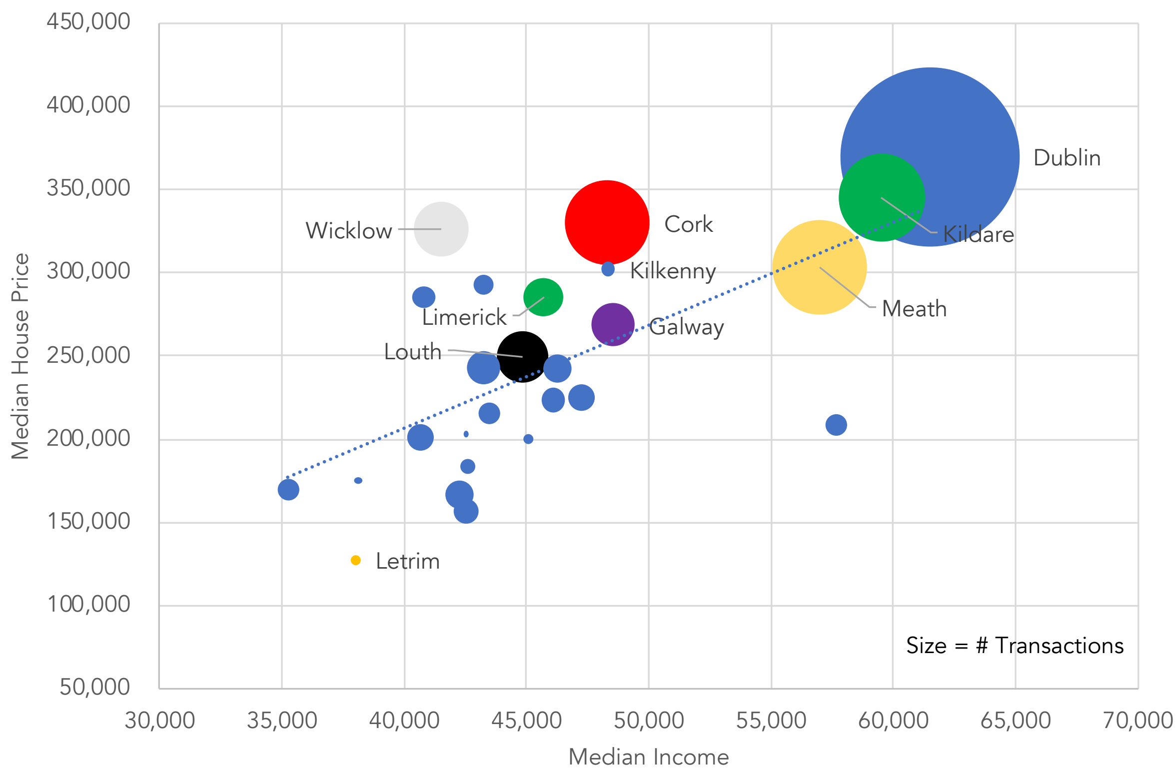

Figure 10 - Median Household Income, House Price and Transaction by County. First Time Buyer Owner Occupier 12 months to June 2019

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[36] Source: Keogh Consulting Analysis of Residential Property Price Register Transactions from 12 months to June 2019.

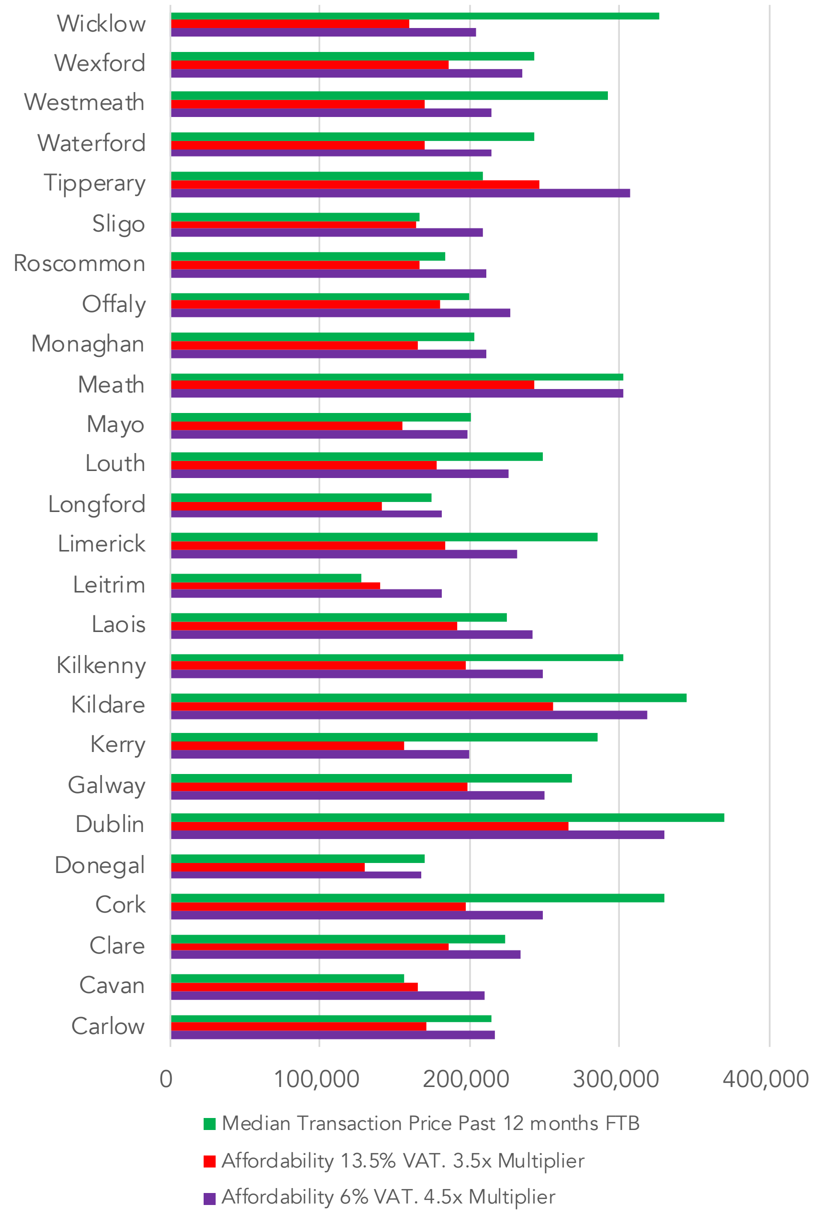

Figure 11 - Median First Time Buyer Transaction Value[37] (Past 12 months) & calculated affordability[38] with reduced VAT & increased CB income multiplier

[37] Source: Keogh Consulting Analysis of Residential Property Price Register Transactions from 12 months to June 2019. Calculations from CSO Gross Household Income Data.

[38] First time buyer with median household income saving for 2 years.

Conclusion

In summary the analysis draws the following conclusions.

- With a 4.5x income multiplier and a 3.0% VAT rate a loan costing €1,192 per month[39] could be obtained to purchase a viable 3 bed house by the average Irish household (income €66,860). This would be below the average Irish rent of €1,366 per month.
- A price target of between €230K and €395K must be achieved to allow households earning between the 60th and the 80th percentile of the national household income distribution purchase a home.
- It is critical that developers understand income levels in their target catchment area to ensure sufficient demand exists for their developments at a given price point whether selling or renting.
- A mid-range 2-bed 75 sq m apartment is currently estimated to cost €460,000 to deliver. To achieve this price apartment site cost must not exceed €50,000 per unit. This delivery cost has increased by 9.1% since Q1 2018 on account of construction cost increases.
- At a this price level (€460K) the financial viability of apartment development is difficult and there is significant risk in starting projects for a developer – cost control is key in constructing for this segment of the housing market.
- A 3 bed semi-detached house is currently estimated to cost €364,000 to deliver. To achieve this price average site cost must not exceed €50,000 per unit. This delivery cost has increased by 5.7% since Q1 2018 on account of construction cost increases.
- Calculations indicate that at household income levels below €70,000 it may now take over 4 years to save to purchase a 1,100 sq ft house costing €364,000.
- Cost inflation is outpacing income growth and this is making affordability more difficult.
- At the bottom of the household income distribution curve it is difficult to deliver given the cost structure of delivery. There are c 1.1M households below the viability threshold – there is a market failure to serve this segment and other measures will have to be taken to provide housing for this segment..
- A reduction in VAT alone will not make housing affordable for households with income below €78K .
- An increase in the CB income multiplier will not make housing affordable for households with income below €69K
- At average Ireland household income levels a reduction in VAT below 4.5% and an increase in the CB income multiplier of above 4.0x will make a viable 3 bed house affordable for the average Irish household. This combined measure could bring an estimated additional 218K households into the affordability net.
- At the 80th percentile income level, €87,585, a VAT rate of 4.5% and a CB income multiplier of 3.9x will make a viable apartment affordable for a household.

Thus, through a combination of a decrease in the VAT rate on new homes and an increase in the CB income multiplier an improvement in affordability could be achieved for differing accommodation types. These measures could partly offset some of the decreases in affordability being experienced on account of the increase in cost of delivery outpacing household income growth.

[39] Loan 30 years, 2.75% interest p.a. 2 year of saving.