Estimating Cash Buyers and Transaction Volumes in the Residential Property Sector in Ireland, 2000-2014

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Abstract

This article describes data used to address the issue of the volume of transactions and cash-only sales in Ireland's residential property market over almost two decades. The approach employed here examines the proportion of total residential property sales attributable to cash buyers (or non-mortgage transactions) and provides new insights which allows for a deeper understanding of developments in the market. We find that at the pinnacle of Ireland's housing boom, there were approximately 150,000 transactions, with cash buyers accounting for 25 per cent of these sales. Since then the volume of transactions fell to a low of 21,000 in 2010 while the share of cash purchases had risen to around 60 per cent in more recent years. The increase in the share of cash buyers reflects the sharp fall in the number of mortgages drawn down while the actual number of cash-buyer transactions is not necessarily atypical of the early years of the last decade. We also find that the turnover of residential property – or total transactions as a proportion of the housing stock – has fallen sharply since the crisis and is currently low, both by historical and by international standards.

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1. Introduction

Over recent years, market estimates – and media commentary – have estimated cash buyers at approximately 50 per cent of all property transactions in the Irish residential market. Indeed, industry research suggests that cash buyers can crowd-out the traditional mortgaged purchaser: '…*faced with a choice of bids from cash and debt-financed buyers, vendors will tend to opt for the convenience and certainty of cash*' (Savills Research, 2015). This article seeks to determine whether the absolute volume of cash buyers in the Irish residential property sector is out-of-step with historic trends. We also consider whether the rise in levels of cash buyers as a proportion of all residential property transactions is directly related to the fall in overall transactions or an actual increase in the prevalence of cash sales. In order to investigate such trends, it will be necessary for us to endeavour to estimate a time-series for the overall volume of annual residential property transactions in Ireland over time. Robust data on total transactions has not previously been collated and published (DKM, 2010) prior to the introduction of the Property Price Register (PPR). These issues are addressed in detail below.

The objective of this article is to contribute to current debate around these issues by means of estimating the extent to which housing output and turnover levels may have diverged from observed historic levels. This can improve our understanding of the role of cash sales over time. We also address the impact of factors such as vacancy rates and cyclical movements in the sector on the interpretation of the available data. Section 2 discusses the meaning and definition of the term 'cash buyer' and reviews recent market estimates; Section 3 outlines certain inherent data limitations and our methodology in estimating both sales' volumes in the residential property sector and the prevalence of cash buyers; Section 4 summarises our findings on the role of cash buyers over the past decade and puts these in the context of the extant housing demand and supply dynamics; and Section 5 concludes.

2. What is a Cash Buyer?

The term 'cash buyer' in the property market specifically relates to the cash-only purchase of a residential property (or a transaction undertaken as a '*non-mortgage based transaction*' (DKM, 2010)). For the purposes of this article, cash sales are defined as all residential property transactions where there is no recourse to household mortgage finance from an Irish-resident bank. This cohort covers a wide range of purchasers. It does not, however, imply that these purchasers will always do so without recourse to leverage. The term 'cash buyer' can potentially include older households opting to downsize (i.e. using the proceeds of a home sale to purchase a smaller dwelling). It can also include private investors using property as an alternative to low-yield deposits. In the current climate, this might include those in receipt of pension lump sums – including those exiting the civil and public service under the series of Incentivised Schemes for Early Retirement introduced over recent years – plus those accessing withdrawals of Additional Voluntary Contributions (AVCs)[2].

Such individual household cash buyers are complemented by institutional investors such as the growing indigenous Real Estate Investment Trust (REIT) sector and international investors. Social and voluntary housing providers – such as Approved Housing Bodies, for instance – have also been active in the marketplace. The latter do so via borrowed funding provided through the Housing Finance Agency and/or other sources (but without accessing household mortgage credit). In the case of the REITs, although these were primarily financed via equity at the outset this is changing and bank credit is increasingly playing a role. In other words, these can also be leveraged purchasers.

Whilst the scale of interest in Irish property investment displayed by international investors (including acquisitions by speculative international asset management groups, etc.) is clearly quite high, it is also true that

2 The Finance Act, 2013 permits a once-off withdrawal of up to 30 per cent with respect to Occupational Pensions and PRSAs, albeit that the authors understand that the figures involved are relatively small.

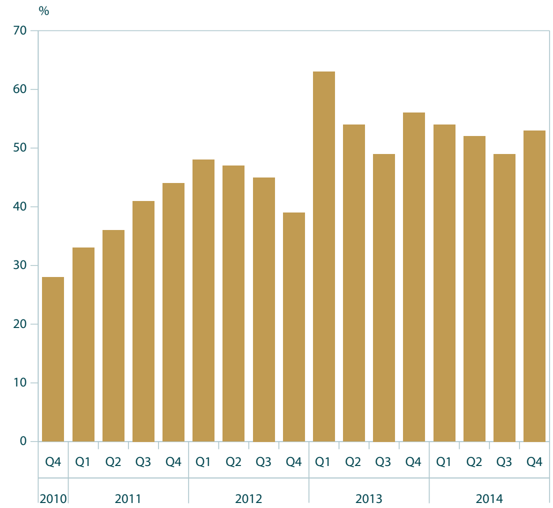
cash sales are not a new or solely recent phenomenon. In the aftermath of Budget 2013, for instance, existing property industry companies in Ireland had the opportunity to establish REITs (similar to the experience in the UK post-2007) (Coates and Moloney, 2016) and some such companies have developed from groups with longstanding investment histories in Ireland. Similarly, the propensity for inter-generational transfers between parents and first-time buyers (FTBs) or for individual households to downsize and/or hold multiple properties is not new and will have been a feature of the market for many years.

2.1 Recent market estimates

It is clear that cash buyers – from individual investors to downsizing households to private property investment companies – are not a new phenomenon but have been a longstanding feature of the market. Nonetheless, the proportion of total residential property sales attributable to cash buyers appears to have grown and has been a recurrent theme in public discourse in recent years with a number of market estimates tending to put the proportion of cash buyers at close to 50 per cent (or more) over recent quarters (Savills Research, 2015; FCAM, 2015). In the case of Savills Research, the published estimates on the proportion of cash-only housing transactions have ranged from 28 per cent in Q4 2010 to a high of 63 per cent in Q1 2013 before easing back to 53 per cent in Q4 2014 as cash buyers began to account for *'a declining proportion of total market transactions'* (Chart 1). The results of the annual survey of members of the Society of Chartered Surveyors in Ireland (SCSI) found that respondents attributed 50 per cent of all residential property transactions to cash buyers in 2013 and 40 per cent in 2014 (SCSI, various years).

These estimates, however, tend to combine in-house research with an approach that typically compares the total volume of transactions in a given period with the volume of mortgages drawn down[3] (excluding equity release and

Chart 1: Selected market estimates – cash-only housing transactions as a proportion of total transactions



Cash-only housing transactions as a proportion of total transactions

Source: Savills World Research, Ireland Residential - Residential Property Q1 2015.

top-up mortgages). The residual is treated as a derived estimate of cash sales. For instance, Sherry FitzGerald (2015) previously found that there were more than 13,000 cash sales (or greater than 50 per cent of the total) in the nine-month period to September 2014. This largely reflected the differential between PPR-recorded transactions (27,000) and mortgages drawn down (13,200). A similar type of methodology has been adopted by other commentators with First Citizen Asset Management (FCAM) estimating that there were more than 10,000 cash sales (or 50 per cent) for H1 2015 compared to 21,400 transactions and more than 10,700 mortgages drawn down. As a result, the appropriate equation can be broadly represented as follows:

Total transactions (PPR) – mortgages drawn down (BPFI) = cash buyers

Finally, recent research in the UK has estimated that cash purchases accounted for 38 per cent of that housing market in Q1 2015 (compared

3 These volumes includes FTBs, mover-purchasers and buy-to-let mortgages. Data is sourced from the Banking and Payments Federation of Ireland (BPFI).

with 36 per cent in 2014). The proportion of cash purchases in the UK has followed a broadly upward trajectory since 2006 when the equivalent estimate was closer to 25 per cent (Nationwide, 2015; 2016). The authors of said research attributed the growth in the proportion of cash transactions to a variety of factors. These included tighter credit conditions and unemployment as these constraints would have much less impact on cash buyers. Other factors include the flow of cash into assets such as property – on foot of the low interest rate environment – plus older households moving to another, smaller property without the need for a mortgage, and parents purchasing homes outright for young FTBs. Many of these same factors will likely apply in Ireland also. For instance, Savills Research (2016) found that FTBs accounted for 15 per cent of cash sales in Ireland by late 2014: '*cash gifts and loans from "The Bank of Mum and Dad"…have emerged as a funding source for FTBs*'.

2.2 Overview of residential property transactions since 2010

The residential PPR is the principal source of data on residential property purchases in Ireland. The PPR is produced by the Property Services Regulatory Authority (PSRA)[4] and includes the date of sale, price and address of all residential properties purchased in Ireland since the 1st January 2010, as declared to the Revenue Commissioners for stamp duty purposes. The data contained therein may be subject to a time-lag or delay in reporting actual transactions. The PPR database currently shows approximately 21,000 recorded residential property transactions for 2010. This rose in subsequent years with approximately 30,000 and 43,000 transactions recorded for 2013 and 2014, respectively.[5]

The PPR database contains a given number of data points (or rows) in each year reflecting each property transaction recorded on the Revenue Commissioners' e-Stamping system.[6] Each row, however, does not necessarily equate to a single transacted residential property but may represent multiple properties. In other words, there is scope for a greater number of underlying individual residential properties to be transacted than that suggested by the headline statistics. In order to explore this in greater detail, we examined a specific sub-sample of those transactions where the sale price was shown as €2 million or more. We did so for each year between 2010 and 2014 in order to better estimate the number of individual residential properties transacted per annum. This approach will necessarily still under-estimate the true volume of total properties transacted – as it does not address multiple properties on a return with a sales value below €2 million – but it will nonetheless give a useful estimate for the purposes of this research.

For instance, in 2012 this database contained approximately 25,000 rows but on closer examination, these data represented more than 25,000 individual properties transacted. For 2013, this database contained approximately 30,000 rows but on closer inspection, we estimate that 84 of these rows actually represented a further 2,500 individual residential properties (whether individual apartments or houses) such that the underlying number of transacted units was closer to 32,500. In that year, these rows included such multi-unit developments as Sandford Lodge, the Gasworks, and Clancy Quay in Dublin. In each case, these simply appear as a single record on the PPR database. The underlying number of transacted units was closer to 45,000 in 2014, or 1,500 more than the PPR[7] (Chart 2).

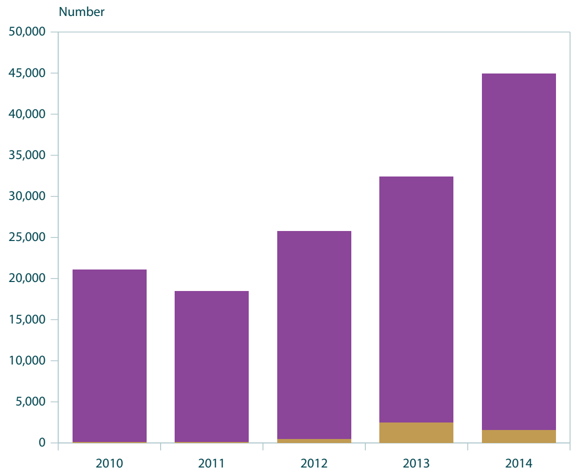
4 This register is produced pursuant to Section 86 of the Property Services (Regulation) Act 2011. Data includes some non-market prices and records which do not include VAT at 13.5 per cent. The PSRA does not edit this data and it recognises that errors may occur when the data is being filed.

5 Data for each year may change over time as the database is updated with new records.

6 e-Stamping is Revenue's on-line pay and file system allowing users to file stamp duty returns electronically, to make on-line payments and to receive a stamping certificate.

7 Moreover, the number of new completions on the PPR (i.e. where the property is a new property, the price shown is exclusive of VAT at 13.5 per cent) is approximately 50 per cent lower than the number of recorded new house completions in the *Housing Statistics* for 2013 and 2014. Some portion of this may feasibly relate to timing differences in the submission of stamp duty returns or to the connection of unsold but completed housing units to the electricity network (see Section 3.3 below). In a small number of cases, the relevant PPR rows contain a number of records where the sale price was shown as €2 million or more and many of these will contain multiple properties. This, again, suggests that the true volume of transactions is underestimated by headline PPR statistics.

Chart 2: Trends in Property Price Register (PPR) annual transaction records and an estimate of the underlying volume of properties transacted



Source: PPR database and authors' own calculations.

Note: PPR data extracted: 04/05/2016 (latest update: 27/04/2016). The PPR data is dynamic and subject to change as new records are added (at least until many months after a particular period). The estimate of the actual volume of underlying residential properties transacted refers to authors' own calculations and will likely still underestimate the true volumes.

3. Data Limitations and Methodology

The purpose of this section is to outline the approach adopted by the authors in endeavouring to construct a time-series estimating the total volume of residential property transactions (i.e. sales) in Ireland over recent years and to estimate the volume of cash-only sales contained therein. In the first instance, we show that the methodology presented in Section 2 can be replicated for the period since the introduction of the PPR in 2010 to produce comparable estimates for the period 2010-2014 and the methodological amendments deemed useful to improve these estimates. Secondly, we demonstrate why such an approach is not applicable for the period pre-2010 and explore the alternative approach used here.

3.1 Deriving estimates for the period 2010-2014

It is feasible to replicate the methodology outlined in Section 2.1 above to produce comparable estimates for the period 2010-2014. In doing so, we can use these same sources (i.e. recorded transactions and mortgages drawn down) to produce robust estimates of both the volume of residential property transactions and the volume of cash-only sales. We have, however, adopted a number of minor modifications. In the first instance, we have amended the volume of transactions to reflect the concerns which surfaced in Section 2 above with regard to the potential for multiple housing units to be captured in a single record on the PPR. Secondly, we have also made some further minor modifications to address specific constraints with regard to factors such as site-only sales where the latter are not necessarily captured in the PPR database.

3.2 Deriving estimates for the period 2000-2009

It is more challenging to derive similar estimates for the period prior to the introduction of the PPR as there is no comparable database for all residential property transactions pre-2010. One option explored here was to use data – made available by the Office of the Revenue Commissioners – on the total number of stamp duty returns (SDRs) over the period 2000-2009. This, however, did not prove feasible as there was a divergence between these figures and other useful metrics such as residential mortgages drawn down and completions of new private dwellings. This is discussed in greater detail in the Annex.

Whilst these data series on residential property transactions were not suitable for our purposes here, there have been previous endeavours to produce estimates with regard to the metrics that interest us pre-2010. The Department of the Environment, Community and Local Government has published an annual Review

Chart 3: Comparative data metrics (transactions, stamping and mortgage lending)

Source: DKM (2005, 2006).
Note: See Annex.

and Outlook for the Construction Industry (ROCI) for many years[8]. These reports previously included estimates for the total number of residential property transactions and the proportion of purchases financed without a mortgage. The methodology used was predicated upon a comparison of the number of mortgage loans paid out for new houses with the number of new private houses built in order to derive an indicator of the number of new homes financed without a mortgage. The report then assumes the same proportion of second-hand homes was financed without a mortgage in order to estimate the total number of residential property transactions.[9]

These reports had estimated that some 152,000 residential transactions (Chart 3) were completed in 2004 with cash buyers accounting for 38 per cent of new homes. For 2005, the results were 167,000 residential transactions with cash buyers at 33 per cent of transactions. In retrospect, there are a number of potential limitations to the original ROCI methodology and we have adopted a modified approach to address these. These amendments are outlined below.

3.3 Data amendments for the period 2000-2009

In modifying the original ROCI approach, we endeavoured to address three specific considerations. Firstly, non-prime mortgages (i.e. sub-prime mortgages) are not included in mortgage loan drawdown figures used to extrapolate the volume of cash buyers. We have adjusted our time-series to account for these. Secondly, new house completions for social housing purposes are not included in our analysis. Finally, the original methodology implicitly assumes that all new house completions[10] are bought (either with a mortgage or cash) with an assumed 100 per cent throughput in an active and functioning market. Potentially, this approach will not allow for the steep rise in unsold, vacant properties in a partly inactive or dysfunctional market. It is challenging, however, to interpret the available data and assess its implications for this research. Further detail on the amendments adopted here is provided in the Annex.

4. Results and Estimates Derived from the Model(s)

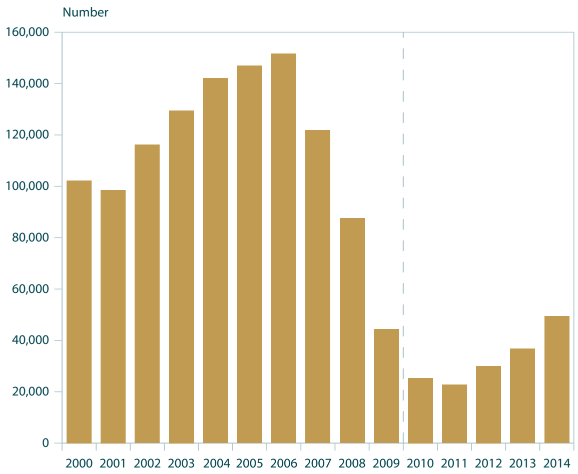
The purpose of this section is to present our estimates for the volume of annual residential property transactions in Ireland since 2000. We also present the derived estimates with regard to the volume of cash buyers in the market over time and their role as a proportion of the total market. These results were estimated using the models outlined previously and, in so doing, we have combined two approaches which merge the available data for the periods 2000-2009 and 2010-2014. We then proceed to address trends in the level of turnover of

8 The Department of the Environment, Community and Local Government was responsible for the publication of the ROCI each year up to 2003. From 2004, the Department gave editorial independence to DKM Economic Consultants. Thereafter, the ROCI was commissioned and funded by the Department albeit that the report was independent.

9 Total transactions are then calculated as the total number of new house completions (all sectors) plus the estimated number of second-hand houses transacted (with and without mortgage finance).

10 Electricity connections are used as the proxy for new house completions in the *Housing Statistics*. The official statistics, therefore, record each completion when the meter is installed and goes live (but not necessarily in the year when the unit is completed). There are a number of reasons as to why vacant housing units would come to be connected prior to a sale. For instance, unsold units could be connected on foot of the updated Building Regulations (2008). It is not possible to quantify the number of units in this category.

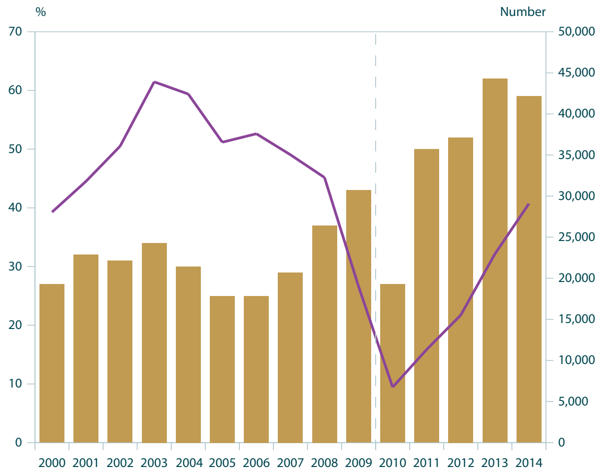
Chart 4: Estimated volume of total residential property transactions



Source: PPR database (2010-2014 only) and authors' own calculations (using amended ROCI model).

Notes: (i) Time series merges methodologies and datasets for 2000-2009 and 2010-2014 (denoted by vertical line).
(ii) Nominal figure for additional transactions included with regard to site-only sales (2010-2014).

Chart 5: Estimated proportion and volume of cash buyers



Source: PPR database (2010-2014 only) and authors' own calculations (using amended ROCI model).

Note: Time series merges methodologies and datasets for 2000-2009 and 2010-2014 (denoted by vertical line).

residential property in Ireland and outline some thoughts on the role of cash buyers as the cyclical patterns of demand play out over time.

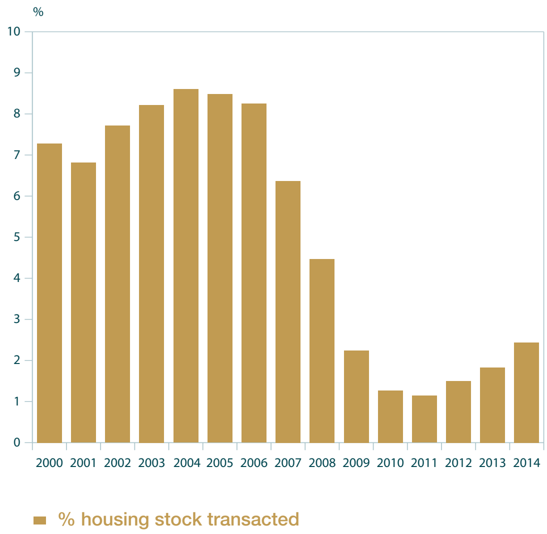
4.1 Estimated transactions and the prevalence of cash buyers

The modified ROCI model employed here suggests that total sales' volumes stood at close to 100,000 transactions in 2000. As the market began to overheat, these volumes continued to expand over subsequent years. By 2005, we estimate that these volumes had increased by almost 50 per cent to approximately 147,000 transactions before peaking at 151,000 transactions at the top of the market in 2006. These results are broadly consistent with the previous Department of the Environment-commissioned analyses for this period. Thereafter, there followed a sharp downward adjustment as the estimated volume of transactions reduced in later years. By 2010, there were approximately 25,000 transactions (or a reduction of 83 per cent when compared to the peak). The volume of mortgage-based transactions fell by the same magnitude. In recent years, the overall volume of transactions has begun to recover and stood at close to 50,000 transactions by 2014 (Chart 4).

Following on from these estimates of the total volume of properties transacted, we can then derive an estimate of the number, and proportion, of cash buyers over time (Chart 5). The data presented below suggests that there were approximately 28,000 cash buyer transactions in 2000. These volumes increased over the next three years before volumes fell-back after 2003. In recent years, we estimate that the volume of cash-buyer transactions was approximately 23,000 and 29,000 in 2013 and 2014, respectively. In other words, the volume of transactions financed without a mortgage was quite close to that pertaining during 2000 and 2001.

The proportionate increase in the volume of cash-buyer transactions since 2010 is significantly higher than the equivalent increase in the volume of residential mortgages drawn down over the same period. Similarly, whilst the estimates presented here suggest that cash-buyer volumes have recovered to levels

Chart 6: Estimated annual turnover of residential properties (all transactions)



Source: Department of the Environment, Community and Local Government Housing Statistics (Estimate of Housing Stock for each year ended 31 December - 1991 to date) and authors' own calculations.

pertaining in the early 2000s, the volume of residential mortgage loan payments has not. The reduction in the volume of mortgage-based transactions is evident in the change in the proportion of cash sales over time. We estimate that cash sales accounted for approximately 30 per cent of all transactions between 2000 and 2004. These then fell-back to 25 per cent of all transactions as the market reached its peak. These estimates also suggest a further retrenchment by 2010. This may have arisen on foot of greater uncertainty as the European sovereign debt crisis began to unfold and Ireland moved into its Troika bailout programme.

In more recent years, however, cash sales have come to account for a significantly higher proportion of the total. We estimate that these accounted for 50 per cent of all transactions in 2011 and that this rose to 62 per cent and 59 per cent in 2013 and 2014, respectively.

4.2 Turnover of residential properties over time

It has previously been noted that in a functioning residential property market, approximately one in every 25 units (or 4 per cent) would be transacted in a given year (TEGoVA, 2012; GeoDirectory, various years).[11] In a recent analysis of the stock of residential properties in Ireland, GeoDirectory (2015) found that the residential property market is still performing below *'what would be deemed to be a more normal level of transactions…'* This analysis also found that there was a notable geographical variance in the turnover of residential stock with Dublin, Westmeath and Kildare experiencing the highest turnover rates. By contrast, Monaghan, Donegal and Tipperary had the lowest rates of turnover.

In the midst of Ireland's property boom, we estimate that the rate of turnover was regularly closer to a range of 8 to 9 per cent. This was approximately twice the expected – or normal – level (Chart 6) and reflects the dysfunctional nature of an overheating market at that time. This rate, however, is now closer to 2 per cent (or less than 50 per cent of the level expected in a functioning property market), albeit that we do estimate that the turnover rate in 2014 was significantly higher than in 2010.

4.3 Cyclical trends in demand and supply patterns

During the rising property market from 2003 to 2006 a surge in speculative investment and development occurred, both in high-growth areas with strong demand and also in weak locations where little demand was present. At this point in the market, financiers also became more willing to lend, both to development interests and to potential purchasers, and the supply of property rose substantially. With developments attracting sales and lettings at high profit levels, this encouraged increasing numbers of new developers, purchasers and investors to enter the market place (Williams et al, 2016). Early entrants experienced high

11 The Institute of Professional Auctioneers and Valuers is represented on TEGoVA. TEGoVA (2012) found that in a steady, normally functioning economy and property market the level of stock turnover should be between 3 and 4 per cent (of the total housing stock) per annum. GeoDirectory – established by An Post and Ordnance Survey Ireland – has commissioned a number of reports on the stock of residential properties in Ireland. GeoDirectory (2014; 2015) found that a normal level of transactions would be approximately 4 to 5 per cent of the housing stock per annum.

profits, having acquired residential units for low prices during the weak phase of the market with potential for cash purchasers to obtain properties at low prices. However, the influx of later entrants pushed up prices and reduced such opportunities for cash purchases. This increase in supply reached its peak by 2006 and 2007, leading to excess supply beyond a level appropriate to available demand. With supply levels eventually exceeding demand levels in 2006 and 2007, price stabilisation and reductions occurred.

The nature of property development activity is that once initiated, a construction project may not be abandoned without incurring substantial losses. The time span over which a project will move from inception to completion – two years or substantially longer for larger, more complex projects – makes judgments of supply/demand relationships difficult, and such occurrences of oversupply are common internationally. The result is that rather than an orderly reduction in supply which might be termed a managed reduction, a major correction or crash occurred. The result of oversupply and the absence of demand are an increase in vacancy levels. This is followed by falling prices and reduced investor demand, leading to decreased profitability. As this stage was reached, new development proposals were suspended and major reductions in development activity occurred. Little development came on-stream resulting in a major correction in market activity levels.

At this point, cash sales can be a feature of such markets as below cost purchase opportunities come on-stream. For instance, receiver sales and auctions can often feature low-cost houses and apartments in areas of weak demand. Lower pricing levels allied with a weak lending market make the potential long-term gains for cash purchasers high. Such sales reduce surplus stocks and when the level of demand stabilises, this new demand can find supplies limited, due to the collapse of the development process.

5. Conclusions

The proportion of total residential property sales attributable to cash buyers (or non-mortgage transactions) appears to have grown and has been a recurrent theme in public discourse in recent years with a number of market estimates tending to put the proportion of cash buyers at close to 50 per cent (or more). Our objective has been to estimate the overall volume of residential property transactions in Ireland over almost two decades and to better understand the volume – and proportion – of transactions undertaken without recourse to a mortgage. Prior to the Government announcement on the establishment of a new property transactions database in 2010, there was no robust national data on housing transactions in the Irish market. Similarly, there was very little data available on non-mortgage based transactions. With the establishment of the PPR in 2010, there is now a useful database on residential properties purchased in Ireland and we have used this in our research for the period 2010-2014. In the case of earlier years, we developed an approach to overcome evident data gaps prior to the introduction of the PPR. This approach builds upon a methodology originally utilised in the Department of the Environment-commissioned analyses in 2004 and 2005.

The analysis presented here indicates that the presence of cash buyers – in both volume and proportionate terms – reduced as the market reached its peak around 2006. This dynamic is in-sync with anticipated cyclical flows within property markets as this period was characterised by the easy availability of credit and scarcer opportunities for low-cost acquisitions. There has been a marked turnaround in recent years as actual volumes have clearly increased. We estimate that the current volumes of cash-only sales are not entirely out-of-step with equivalent volumes in the early 2000s, albeit that cash buyers in prior years were operating in a more competitive, vibrant market. We also estimate that cash sales as a proportion of the total have risen steadily in recent years, reaching approximately 60 per cent of total transactions in 2013 and 2014. This again reflects the market cycle as investors have responded to the opportunities available for low-cost acquisitions (including purchases of property assets from receivers or by way of auctions). Moreover, the upward movement in the proportion of cash sales is somewhat similar to the experience in the UK over the past decade (notwithstanding the difference in magnitude).

Whereas it is clear that cash buyers have increased as a proportion of total transactions, however, this also reflects the reduction in the volume of mortgage-based transactions. The composition of the cash buyer cohort in Ireland will also have changed. Whilst it is true that cash sales have been a feature of this market for many years, in more recent times we have seen a greater role being played by institutional and international investors (including acquisitions by speculative international asset management groups). This change will also have implications for cross-border funding flows into Ireland as many property asset acquisitions will have been financed by non-resident credit institutions and investors. Finally, this has been intended to be a technical estimation of cash (or at least, non-mortgage based) transactions in the Irish residential property market over time and in the context of market norms and cycles. The authors intend to pursue further analysis in time and in so doing, to look at policy factors and future implications for housing markets.

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Annex

Deriving estimates for the period 2010-2014

In the case of these site-only sales, household mortgage finance may be drawn down to ultimately construct housing stock but we have been advised that no matching transaction will appear in the SDRs.[12] Data provided to the authors indicates that there were approximately 68,000 of these transactions between 2000 and 2009 (or 6,800 p.a.). The number of site-only transactions in 2014 was closer to 4,300 and we have included a nominal add-back to proxy these transactions for each year between 2010 and 2014.

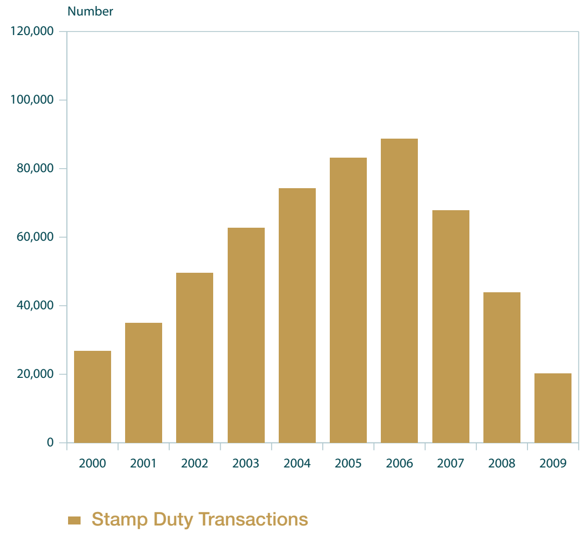
Finally, we have also included amendments to address sub-prime mortgage lending[13] and potential time-lags in the date of filing transactions with the Revenue Commissioners. The estimated results of this process are broadly consistent with those presented above. These indicate that cash buyers accounted for approximately 49 per cent of total sales in 2011, rising to 62 per cent in 2013 and 59 per cent in 2014. These results are discussed in further detail in Section 4.

Deriving estimates for the period 2000-2009

The publicly available information in respect of the total number of residential property transactions indicates that there were 44,000 such transactions in 2004. By 2005, this had increased to almost 45,000 before peaking at approximately 53,000 in 2006.[14] These figures, however, are limited to residential property transactions where stamp duty was paid. An alternative approach is to consider the total number of SDRs over this period (i.e. whether stamp duty was payable or otherwise) (Chart A1).

It is difficult to use this data as a proxy for the total transactions pre-2010 (i.e. to backcast for an earlier period). There is a divergence between these figures and other useful metrics such as residential mortgages drawn down (Chart A2) and completions of new private dwellings (Chart A3) and it is not clear how either time-series could be retrospectively, and correctly, revised to ameliorate the variation. Specifically, it is very difficult to model a retrospective comparison between the available data on residential mortgages drawn down and the above annual SDR estimates as there would appear to be a disconnect between the two over time with the former regularly exceeding the latter. In other words, such an approach would produce an unrealistic estimate (i.e. a negative derived cash buyers figure). For instance, the SDR data indicate that there were 27,000 transactions in 2000 compared with 74,000 residential mortgages. Similarly, there were 89,000 transactions in 2006 compared with 111,000 residential mortgages (when top-ups, re-mortgages and sub-prime lending are excluded)[15].

Chart A1: Trends in Stamp Duty returns



Source: Estimates generated by the Office of the Revenue Commissioners and relate to data from the pre-2010 (pre-e-Stamping) system.

Note: Data represent property transactions (not just duty paid transactions) and are likely to exclude site-only purchases. The latter may have been captured under transactions flagged as non-agricultural land.

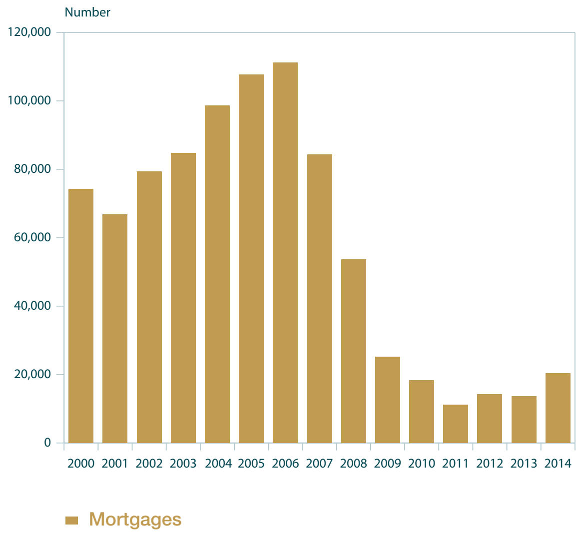
12 In such cases, it is likely that these transactions will be flagged as non-agricultural land.

13 This lending is of only marginal importance in the aftermath of the financial crisis.

14 Dáil Éireann Parliamentary Question: Ref No: 25259/10 (Tuesday 15th June 2010).

15 When top-ups and re-mortgages are included, the total for 2006 was closer to 204,000 loans. These are excluded as such lending does not give rise to another property purchase (transaction). The BPFI Mortgage Market Profile defines a top-up as *'a further mortgage advance to an existing borrower which is issued to finance expenditure other than house purchase'* and a re-mortgage as *'a loan which is issued by one lender to refinance an existing mortgage with another lender. This may or may not include further equity release'*.

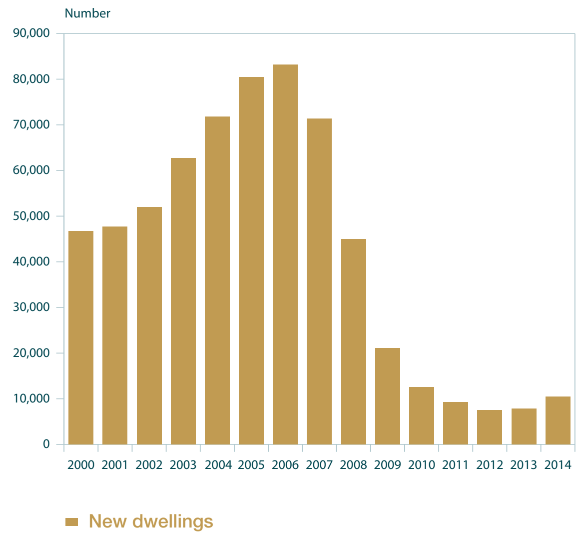
Chart A2: Trends in residential mortgages drawn down



Source: Department of the Environment, Community and Local Government Housing Statistics - series on loan payments by all agencies (banks, building societies, and local authorities).

Notes: (i) Data exclude re-mortgage and top-up lending albeit that data for 2007 onwards may not be strictly comparable with previous years as the latter can contain an unquantified element of the refinancing of existing mortgages.
(ii) Housing Statistics data series does not include sub-prime mortgage lending.
(iii) Authors considered using BPFI/PwC Mortgage Market Profile data to adjust for these factors in certain earlier years but this was not feasible.

Chart A3: Completions of new private dwellings



Source: Department of the Environment, Community and Local Government Housing Statistics - series on house completions, 1970 to date (by sector).

Notes: (i) House completions relate to the number of new dwellings connected to the electricity supply. Due to a temporary backlog in 2005, the connection of approx. 5,000 otherwise completed units was not finalised until early 2006. The figures presented here have been amended accordingly.
(ii) Data considered here only relates to new private houses as the delivery of local authority housing output does not necessarily imply an associated 'new' housing completion. For instance, completions relating to long-term voids were included here as new build completions until 2010. Similarly, units acquired under Part V of the Planning and Development Acts, 2002-2008 for rental purposes were also included here.

Data amendments for the period 2000-2009

Firstly, any exclusion of sub-prime mortgages would potentially lead to an over-estimation of the volume of cash buyers by understating the volume of mortgage-based transactions. The supply of such specialist mortgages was relatively new in Ireland during the early part of the last decade. Only two principal companies were engaged in the provision of these mortgages by 2004, albeit that there were four new entrants in 2007 (The Competition Authority, 2007).

Contemporary estimates put the value of this new lending at €1 billion per annum in 2006 and it was estimated that this would grow to €10 billion by 2010 (Slattery, 2007). This implies that sub-prime mortgages accounted for approximately 2.5 per cent of all new mortgage lending in 2006 (€39.8 billion). It is understood, however, that a significant proportion of this lending was attributable to re-mortgages (or other products, such as lifetime mortgages, where no transaction arises). For the purposes of this research, we have adjusted our time-series to capture the relevant cohort[16] but we sought to exclude sub-prime mortgages used to re-mortgage extant debt.

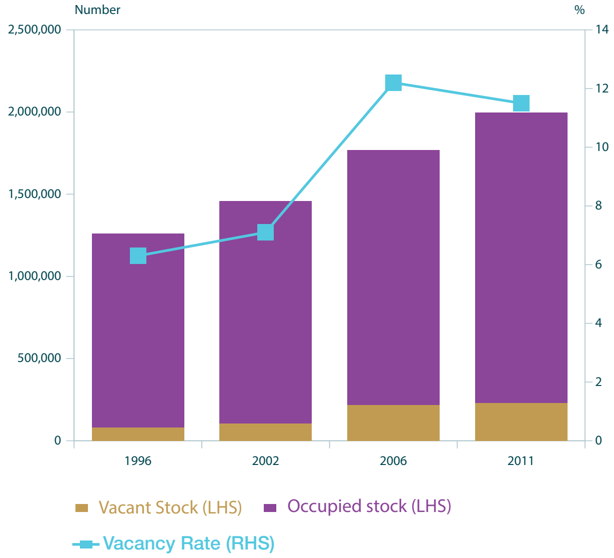
Secondly, we do not include new social housing units under the variable denoting all house completions. Such non-private housing typically accounts for a relatively minor proportion of the total – as low as 6 per cent in 2006 – but at least some proportion of these completions will not have been subject to a sale (with or without mortgage finance) as these are constructed for local authority, voluntary and cooperative rental purposes. Furthermore, in previous years completions relating to long-term voids were included as new build completions in the Department of the Environment's published statistics.

16 In the absence of definitive data, we have assumed that the same proportion of new (sub-prime) lending applied to the First-time Buyer/Mover/Residential Investment Letting purchase categories. This attributes approximately 50 per cent of sub-prime loans to the mortgagor cohort that is relevant here but, nonetheless, the absolute figures are quite small.

Finally, units can be vacant for a short period to facilitate renovations or a change in ownership (or tenancies). A typical vacancy rate in a functioning market is expected to be approximately 4.5-6 per cent (Stationery Office, 2014). With the publication of research by FitzGerald (2005) and the subsequent Census 2006 results, it became clear that a disconnect had emerged between the actual vacancy rate in Ireland and the assumed 'normal'. Heretofore, this information had not been publicly available. These results indicated that the vacancy rate had increased marginally between 1996 (6.3 per cent) and 2002 (7.1 per cent) but thereafter, it increased to 12.2 per cent by 2006. The latter implies some 217,000 vacant units[17] (or an increase of 112,000 units over just four years) (Chart A4). In interpreting the significance of the increase in the vacant stock for our work, we considered whether (and how) this was to be addressed in our estimation process.

There are two key considerations here. It is only in those cases where vacant – but completed units – were 'energised' (i.e. connected to the electricity network) that these units would appear in the new house completion statistics used here. In general terms, however, the connection is only made when a buyer moves into the property, albeit that this is not always the case (DKM, 2010). Also, it is only in cases where those same vacant units were sold that a transaction (with or without mortgage finance) occurred. Unsold vacant units do not feature here. For the purposes of this research, we have assumed that 20 per cent of the estimated increase in the vacant stock in each year related to new completions that were connected to the electricity network and that said units were unsold during the period covered here.[18]

Chart A4: Census data on the volume and proportion of habitable vacant dwellings in the Irish housing stock



Source: CSO Census (various years); FitzGerald (2005).

Notes: (i) Vacant units refers to unoccupied houses and flats/apartments but excludes temporarily unoccupied/vacant units (residents temporarily absent) and unoccupied/vacant holiday homes. The vacancy rate shown here excludes holiday homes.
(ii) Units recorded as 'Under construction' or 'Derelict' are not included here.

17 For the purposes of this research, vacant units exclude habitable dwellings classified as 'temporarily absent' or 'holiday homes'. Units classified as uninhabitable (including 'under construction') are also excluded.

18 It has previously been estimated that a significant volume of newly completed housing units remained unsold in the aftermath of the financial crisis in Ireland. Our assumption implies that the majority of the increase in the vacant stock (including new units) was not connected to the electricity network and does not flow through into the *Housing Statistics* as new house completions. It is possible, however, that some proportion of these vacant and unconnected houses were actually sold – particularly to investors – but it is very difficult to adequately estimate the incidence of these transactions. These transacted but vacant units are not included here.