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Buying and Selling Houses in Ireland: Behavioural Economic Evidence for Reform

Pete Lunn, Adam Joachim Shier, Cameron Belton and Féidhlim McGowan

Behavioural Research Unit, ESRI

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Corresponding author: pete.lunn@esri.ie

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Abstract

This paper applies behavioural economics to Ireland's housing transaction system, identifying how systemic features may contribute to biased decision making and price volatility. It draws on international comparisons and highlights eight cognitive biases that affect buyers and sellers including ambiguity aversion, herding, extrapolation bias, present bias, anchoring, loss aversion, sunk cost fallacy and auction fever. The paper argues that features of Ireland's system likely exacerbate cognitive biases leading to stress, financial risk and market instability. It considers reforms that would increase transparency, aiming to make transactions fairer, easier and less prone to volatility, while respecting property rights.

Introduction

Buying a house is, by some distance, the largest financial transaction that most individuals are likely to undertake. As anyone who has gone through the process knows, it is both time-consuming and stressful. Decisions have long-term financial consequences for individuals and families, as well as impacts on day-to-day quality of life. There are consequences for sellers too, many of whom are attempting to combine buying and selling at the same time. Even sellers who are not also buying may face financial and time constraints associated with realising their asset.

From a broad psychological perspective, there are several important aspects of the housing market that are likely to have impacts on the experiences of buyers and sellers. Firstly, this market is unique. It has its own rules, customs and practices, which govern the description of the asset, the posting of asking prices and systems for making bids and accepting offers. These vary between countries and, to some extent, between different segments of the market. Thus, previous experience as a consumer in other markets is of limited benefit; first-time buyers have no choice other than to learn a new set of concepts and procedures. Secondly, this market has multiple intermediaries, including estate agents, mortgage and insurance providers, surveyors, valuers and lawyers. The upshot is that transaction costs are high; hundreds and thousands of Euro can be foregone in pursuit of sales that, ultimately, fail to be transacted. Thirdly, there is little opportunity to gain experience in the market, because the number of transactions across a lifetime is likely to be low. Combining these three observations, expressed in simple terms, the housing market is a complex game with life-changing outcomes played by inexperienced players. In any such game, there are likely to be winners and losers. Some players will make good decisions, others will make bad ones and there is plenty of scope for any individual player to be the beneficiary, or victim, of luck.

Outcomes in the housing market are not only felt at the individual level, however. Movements in house prices have implications for the macroeconomy, given the centrality of mortgages to family finances and the economic importance of the building sector. History has taught us that prices can be volatile and that substantial movements can be calamitous, not least in Ireland.

Given this importance of the housing market, both for individuals and the wider economy, it seems right to ask whether the system for transacting houses is a good one. In order to do this, we need to take a stance regarding what the properties of a good system are. For the remainder of this paper, we assume that a good system would be one that makes buying and selling as fair and as easy as possible, within the constraints of respecting and enforcing property rights, while minimising any potential for wider economic damage. There will necessarily be trade-offs involved, where these multiple aims compete. However, there may also be circumstances where the system can be changed to further one or more of these aims with minimal or no cost to another.

This latter logic supports the central motivation for this paper. The system for transacting houses in Ireland has remained largely unchanged for many decades. Yet during this period, and especially since the 1990s, there have been great strides in our understanding of how people make economic decisions. Behavioural economics, the application of psychological insights to economic analysis, has expanded as a subdiscipline. Over the past ten to fifteen years, behavioural economics and, more broadly, behavioural science have been applied successfully across multiple areas of public policy. This work continues to expand globally and has included many instances where market design and regulation have been informed by scientific insights and empirical observations. There is now a body of evidence about human decision-making that can be considered alongside any market and regulatory system. As far as we can see, the housing market in Ireland has not previously been analysed through the lens of behavioural economics. This is what the current paper sets out to do.

At the outset, one straightforward possibility is that there may be aspects of the system that, when compared against existing evidence, are likely to affect the quality of decisions made by buyers or sellers. Evidence from behavioural economics shows how certain features of the context in which a decision is made can sometimes increase the likelihood that a decision-maker makes an error. This might, for example, involve a buyer overvaluing a certain property, or a seller underestimating the chance that a sale falls through. A system that reduces these kind of mistakes is unlikely to have negative consequences for property rights or for the wider economy; a system that reduces such errors would be a better system.

Even where we can identify such a situation, however, there may be no obvious policy or regulatory solution that changes the context for the better. Consequently, in addition to examining the Irish system, for comparison we briefly outline systems for transacting houses in other common-law countries. If there are alternative systems that both already exist and are more closely aligned with behavioural evidence about supporting good decisions, it seems sensible to consider them.

The remainder of the paper proceeds as follows. We describe the system for transacting houses in Ireland, together with a set of international comparisons. Our primary focus is on houses transacted with a typical bidding process, i.e., existing homes as opposed to new builds sold at a set price, as these represent the majority of transactions[1] and the process itself appears particularly vulnerable to the influence of behavioural biases. We then describe relevant evidence from behavioural economics that might interact with elements of the system. Lastly, we consider the policy implications of this evidence by discussing three areas for potential reform.

Transactions in Ireland's housing market

This section provides background to Ireland's housing market as context for the analysis that follows. It describes house price volatility over recent decades, the system for transacting houses and variations on this system operating in comparable countries.

Price volatility

Year-on-year changes in house prices in Ireland over the past half-century are charted in Figure 1. The volatility of prices is striking. Over the past 52 years, people in Ireland have had to contend with a housing market in which real prices were changing at a rate of more than 10% per year for more than one quarter of the entire period. If, instead, the same calculation is based on nominal prices, annualised changes of greater than 10% were occurring for more than half the period. When the

[1]Banking & Payments Federation Ireland, 2024, *BPFI Housing Market Monitor Q4 2023,* [online]. Available at: https://bpfi.ie/wp-content/uploads/2024/03/BPFI-Housing-Market-Monitor-Q4-2023.pdf [Accessed 24/05/2024]

same calculation is undertaken for the countries that we use as comparators below (England and Wales, Scotland, USA, Canada, Australia and New Zealand), Ireland's volatility is highest. Figure 2 presents quarter-on-quarter changes in the Central Statistics Office (CSO) house-price index over the past 20 years. At this finer time-scale, the extent of price volatility is arguably even more evident. Over this period, the house-price index changed by over 5% in a single quarter in more than 1-in-6 of the quarters.

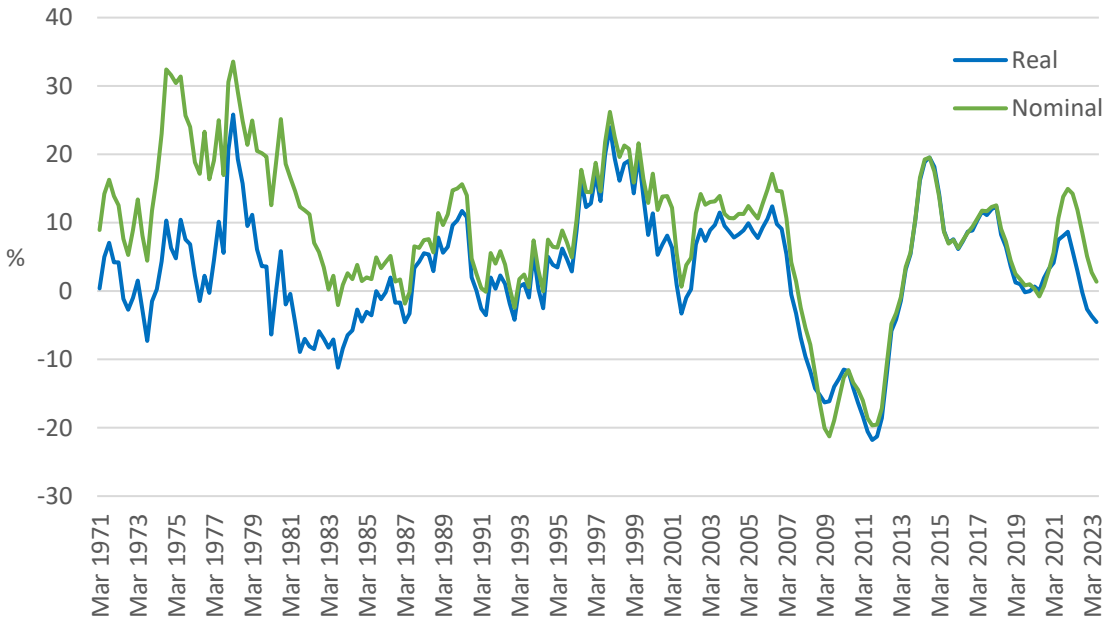

Figure 1. Year-on-year changes in Irish residential property prices, 1971-2023.

Source: Bank for International Settlements (BIS), based on data from the CSO and the Department of Housing, Local Government and Heritage.

To understand these figures better, Ireland's market patterns can be considered in an international context. McQuinn (2017) compared OECD members' percentage changes in nominal house prices across three time periods—1995 to 2007 (pre-global financial crisis), 2007 to 2013 (nadir of the crisis) and 2013 to 2017 (post-crisis recovery). Across all three periods, Irish prices led the way in magnitude of change, growing 474% in period 1, falling 53% in period 2 and once again growing by 52% in period 3. Equivalent figures for the UK were 222%, -8% and 28%. An alternative comparison is with Spain, a market which, like Ireland's, mixed a highly elastic housing supply with particularly liberal lending, especially in the years preceding the crash (Duca et al., 2021). Despite these similarities, Spanish prices were much less volatile, changing by 199%, -26% and 2% respectively.

There are, of course, many factors that can affect supply and demand in the housing market. Yet it is extremely difficult to explain price movements of this size and rapidity within a simple supply and demand framework. International analysis suggests that econometric models derived from standard supply and demand do not fit easily with the volatile nature of historical house price series (Akerlof and Shiller, 2009: 149-156). The data are at least consistent, therefore, with other factors playing a role in amplifying price movements.

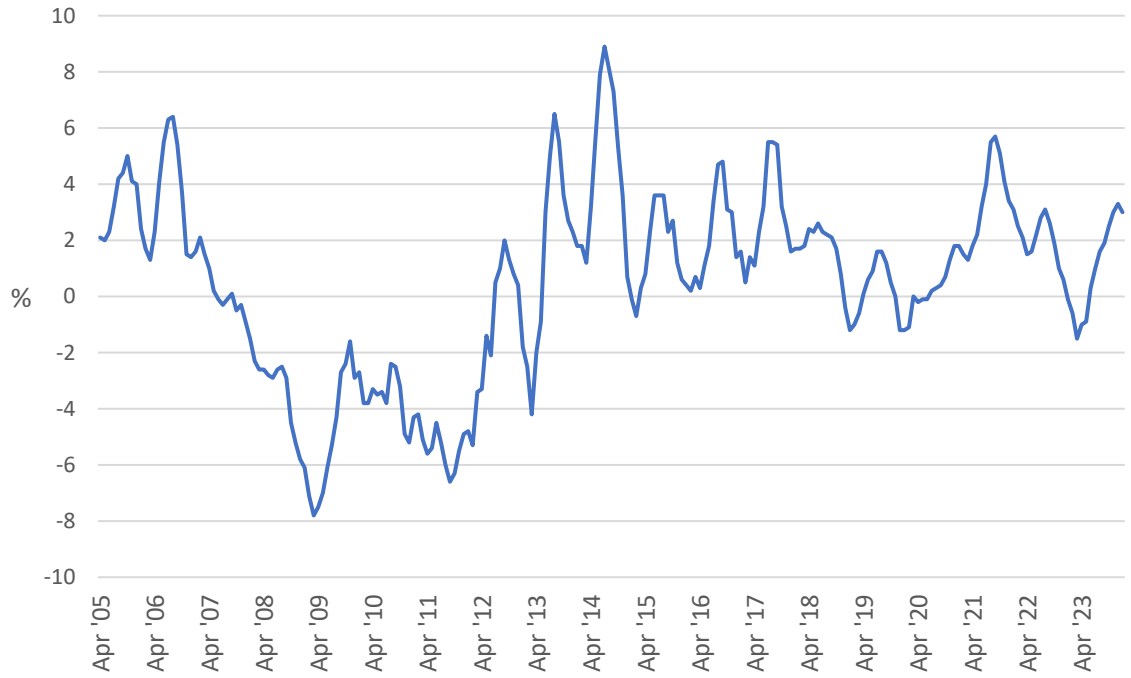

Figure 2. Quarter-on-quarter changes in Irish residential property prices, 2005-2024.

Source: Central Statistics Office (CSO) Residential Property Price Index.

The system for transacting houses in Ireland

Obtaining Finance

For most individuals and couples (i.e. excluding 'cash buyers'),[2] the first step will entail getting approval in principle for a mortgage to cover the cost of the transaction. Following Ireland's housing bubble and subsequent crash, the size of this loan was subjected to new Central Bank of Ireland rules: first-time buyers were limited to borrowing a maximum of 4 times gross income (3.5 for subsequent buyers) with a minimum 10% deposit. Borrowers still decide on a number of loan dimensions that can affect the financial cost and affordability of the mortgage, including whether to get a fixed or variable rate of interest and the term (number of years over which to repay).[3] A combination of these rules and decisions generates a maximum amount that a buyer can realistically pay for a house. Obtaining mortgage approval before embarking on the next stage of the transaction process is important not only in helping buyers to understand what they can afford, but also because selling agents generally

[2] CSO data indicates that in 2021, almost 63% of residential property purchases in Ireland were mortgage-financed. https://www.cso.ie/en/releasesandpublications/fp/fp-cropp/characteristicsofresidentialpropertypurchasers-estimatesofmortgageandnon-mortgagetransactions2021/

[3] The majority of lenders in Ireland cap repayment age on home loans at 70 years (with two exceptions that cap at 80), so an applicant aged 50 can choose a maximum term of 20 (30) years, for example. (https://www.irishtimes.com/business/2024/05/22/ics-mortgages-to-cut-rates-and-lend-up-to-age-80-in-bid-to-rebuild-market-share/#:~:text=ICS%20has%20also%20now%20moved,including%20rental%20and%20pension%20income).

require some proof of funding. However, this is not a legal requirement and may simply be a letter of mortgage approval in principle with the amount redacted. It is therefore possible for prospective buyers to make bids on houses that exceed their present approval limit.

Bidding on Houses

Ireland typically transacts houses under an 'open offer' framework. Prospective buyers are presented with an asking price which provides guidance regarding which houses on the market are within their price range and what sort of bids the seller might be willing to entertain. Sellers generally receive bids via an estate agent, who charges fees to manage the viewing and bidding process. Sellers are free to consider multiple offers and to engage in communication and multiple rounds of negotiation with various bidders. This will often involve encouraging upward revisions until a satisfactory bid is received and accepted. Sellers (or their agent) may communicate the details of rival bids to prospective buyers, who then know the bid amount needed to become the highest bidder and, therefore, be in pole position to be the ultimate purchaser. In this sense, the open offer framework has similarities with an auction, albeit that buyers receive all their information about other players in the auction from the one agent, generally over a number of days or weeks. In recent years, many agents have begun to use online systems to collect and display bids, which in the past were handled by telephone.

Finalising the Sale

Once an offer is accepted, the status of the property changes from 'for sale' to 'sale agreed'. Buyers generally pay a booking deposit of roughly 2-4% of the total price before arranging for a professional survey (not a legal requirement, just strongly advised) to ensure that no major issues exist regarding the condition of the property. Deposits are entirely refundable should the deal fall through for any reason, prior to contracts being signed. However, while the deposit is refunded, the survey fees are not recovered and these would typically be perhaps €500-€1000. Once a property is 'sale agreed', sellers and agents are expected to cease marketing it, although this expectation is moral rather than legal; Irish property transactions do not become legally binding at this point. Instead, this occurs when a contract for sale is prepared and signed by both parties, typically four months or more after the original acceptance of the offer.[4] This drawn-out legal conveyancing period can be a stressful time. Buyers are likely to stop their search for a house, while sellers remain legally free to seek and accept other offers, or to withdraw the property from the market, nullifying prior agreements.

As is clear from the data on price volatility, should the sale fall through, market conditions may have changed substantially in the meantime, imposing large foregone costs on buyers or sellers. Houses that were previously affordable for buyers may no longer be affordable. Potential prices for sellers may have risen or fallen.

Housing transactions in comparable countries

We compare specific features of Ireland's property market with those of other common law countries: England and Wales, Scotland, USA, Canada, Australia and New Zealand. These countries are selected because they possess standardised housing transaction systems, have social and cultural

[4] Legal Services Regulatory Authority, 2022, *Views on solicitors services during conveyancing process*, [online]. Available at: <https://www.lsra.ie/wp-content/uploads/2024/04/LSRA-IPSOS-Consumer-Survey-Conveyancing.pdf> [Accessed 24/05/2024]

closeness to Ireland, and operate under a common law system.[5,6] Furthermore, the transaction systems in each country generally consist of the same touchpoints.

When examined in more detail, however, qualitative differences among the chosen systems are apparent. In particular, we highlight two interrelated sources of variation: the offer stage and the point at which a sale agreement becomes legally binding. In the following paragraphs, we provide a brief overview. A summary of the systems and the similarities and differences between them is provided in Table 1.

Open offer

The 'open offer' process that dominates Irish housing transactions is also the basis for the systems in England, Wales, Australia, and the USA. The processes in each country are fundamentally quite similar, although minor, potentially consequential differences do exist. For instance, unlike Ireland, buyers in the in the USA will generally employ an agent with market expertise to represent their interests in the process. Further variation appears in the system for paying (and refunding) deposits: whereas Irish buyers (and those in USA and Australia) will generally pay a refundable deposit upon agreeing in principle to purchase a house, and a larger deposit upon finalisation, buyers in England and Wales will generally be required to pay a deposit at the time of exchanging contracts only.

Sealed bidding

In contrast, most housing transactions in Scotland are undertaken via a 'sealed bidding' process. Prospective buyers instruct a solicitor to declare a 'note of interest' to the seller's estate agent on the property of interest. When more than one note of interest is received, a seller fixes a closing date by which all bids must be received. A prospective buyer then submits a bid—equal to or above an 'offers over' price listed by the seller—with all conditions included. At the closing date the seller considers all offers and may choose the best of these, but is not obligated to do so, and may instead choose to interact directly with a specific buyer. A sale is not legally binding upon offer acceptance, but only when the final contract of sale has been signed. However, the implications of reneging between acceptance and conclusion are significant enough to discourage either party from doing so. Solicitors act as estate agents in Scotland, and so are bound by Law Society guidelines which instruct that, while any offers made must still be presented to a seller, should a seller accept this new offer, the solicitor must decline to continue to act on behalf of that seller. Such a guideline offers large disincentives for sellers (in the form of increased time, effort and costs in finding a new solicitor). Similarly, a solicitor representing a prospective purchaser who reneges on an offer without legitimate reasons, such as an unsatisfactory survey, is obliged to withdraw their services. Perhaps owing to these disincentives, booking deposits are much rarer in Scotland than other jurisdictions, with deposits normally exchanged in full upon signing of final contracts. Finally, another feature of the Scottish transaction system makes buyer reneging particularly unlikely: the Home Report. This is a legal requirement of sellers to prepare for potential buyers a detailed report that includes the condition of the property, its energy efficiency and other general information. As such, buyers in Scotland can enter the sealed-bid process with some confidence regarding the possibility of unforeseen condition issues. A similar system also operated briefly in England and Wales (see footnote 12).

[5] Scotland is exceptional in that its legal system is a hybrid of civil and common law.

[6] The appendix also provides a brief overview of the typical process for transacting houses in Spain—a fellow EU member state and a jurisdiction with added relevance, given the aforementioned similarities between its market conditions and Ireland's.

Offer to purchase

Under the Canadian system for housing transactions, a buyer will typically make an 'offer to purchase' on a prospective property. This is a form of contract in which all stipulations of the offer—such as it being conditional on the results of a pre-purchase inspection—are laid out and signed by the buyer. This offer is typically accompanied by a small 'earnest money deposit' in order to signify intent to purchase, with the remainder of the down-payment paid upon legal completion of the sale. Earnest money is refunded if the offer is unsuccessful, however it may be forfeited if an accepted offer is reneged upon for reasons not stipulated in the offer contract. If the seller does approve of an offer and its conditions, they can immediately counter-sign, at which point the offer is made contractually binding. Alternatively, they may submit a signed counter-offer for the buyer. Rounds of negotiations may continue in this way, but once an offer or counter-offer is signed and counter-signed by both parties, the offer is made contractually binding.

Sale by tender

In New Zealand, some house transactions take the form of a 'sale by tender', which is essentially a legally binding, more immediate version of a sealed bid process. Typically, a seller sets a deadline for submitting sealed offers (alongside refundable deposits) and once this has passed, will open and decide within five days whether to accept any offer or open negotiations. Should an offer be deemed acceptable, the seller can make this legally binding simply by counter-signing the tender. That this process can be so immediate may be, like in Scotland, due in part to legislation requiring selling agents to disclose to potential buyers any known issues with the property, including those uncovered in previous inspection reports that have since been remedied.

Relevant behavioural differences between systems

As mentioned above, the main differences between the systems surround the offer stage and the point at which the sale becomes legally binding. Before discussing the relevant phenomena from behavioural economics that might interact with transactions systems in predictable ways, we first consider these two main differences from the perspective of buyers and sellers.

One notable difference surrounds the number of times that prospective buyers are likely to make bids on a given property. Under open offer systems like Ireland's, buyers are likely to make a bid on a house and then be invited to revise it upwards, perhaps repeatedly, in response to feedback from the relevant estate agent about the amount of interest in the property and the highest current bid made by other prospective buyers. The open offer system is thus similar to an 'English auction', in which ascending bids are invited until a highest bid is reached and no buyer wishes to bid an amount above it. This means that buyers and sellers make multiple sequential decisions about the price they are willing to pay and willing to accept, which may be changed in light of new information provided by the agent. This contrasts with the sealed bid and sale by tender systems, in which the process typically involves an initial round containing a single bid from each prospective buyer, from which one buyer is selected to continue negotiations with the seller. Buyers and sellers make a single decision about the price they are willing to pay and accept, although some adjustments may be made during further bilateral negotiations. The offer to purchase system is unique in that it offers the possibility of a contractually binding counter-offer that can be made by the seller. This is similar to a 'double auction', in which both buyers and sellers can post prices that are contractually binding. From a behavioural perspective, therefore, these systems for transacting houses entail different numbers of decisions about willingness to pay and accept prices, made with access to different information about the behaviour of other market participants.

The differing points within these systems at which the sale becomes legally binding may also have implications for how buyers and sellers might consider and make decisions. The primary issue here is how much uncertainty buyers and sellers must endure and for how long. Open offer systems leave buyers and sellers in a situation where the sale is not legally binding for some time after the sale has been agreed, with little or no penalty for withdrawal. Scotland's sealed bid system reduces this uncertainty by incentivising buyers and sellers not to renege on deals, as described above. Other systems go further, regarding bids and acceptances as legally binding and hence subject to penalties if withdrawn. While the amount of uncertainty engendered by the system is bound to have direct consequences for how stressful buyers and sellers find the transaction process, it may also have indirect consequences for decisions they make.

Housing Transaction Process	Legally Binding by Country						
	Open Offer				Sealed Bid	Offer to Purchase	Sale by Tender
	Ireland	England/ Wales	USA	Australia	Scotland	Canada	New Zealand
Decision to enter market	×	×	×	×	×	×	×
Property search	×	×	×	×	×	×	×
Potential bidders view house	×	×	×	×	×	×	×
Pre-bid survey, legal checks carried out	N/A	N/A	N/A	N/A	×	N/A	N/A
Bidder makes initial bid	×	×	×	×	×	×	×
Booking deposit with offer	N/A	N/A	N/A	N/A	N/A	×	×
Negotiation between bidder and seller	×	×	×	×	×	×	×
Bid offer accepted	×	×	×	×	×	✓	✓
Contracts signed	N/A	N/A	N/A	N/A	✓	✓	✓
Booking deposit after offer	×	N/A	×	×	N/A	✓	N/A
Post-bid survey, legal checks carried out	×	×	×	×	N/A	Conditional *	Conditional *
Continued house marketing	×	×	×	×	N/A	N/A	N/A
Contracts signed	✓	✓	✓	×	N/A	N/A	N/A
Cooling – off period	N/A	N/A	N/A	×	N/A	N/A	N/A
Sale complete	✓	✓	✓	✓	✓	✓	✓

Table 1. Legally binding process of housing transactions across countries. Change in colour denotes point at which process becomes legally binding. Dashed lines indicates the four different broad stages of the process – decision to buy, search stage, offer stage, acceptance stage.

Notes:

× = the interaction in that stage between buyer and seller *is not* part of a legally binding commitment to proceed with the housing transaction.
✓= the interaction in that stage between buyer and seller *is* part of a legally binding commitment to proceed with the housing transaction.
N/A = where a stage does not feature in that process.
* = contracts are typically written to be conditional on a property successfully passing survey requirements and legal checks.

Relevant insights from behavioural economics

The previous sections considered what a good system for transacting house might seek to achieve, described the system in Ireland, and compared its main characteristics to systems elsewhere. This next section highlights relevant phenomena from behavioural economics that are known to influence financial decision-making and which may interact with systems for transacting houses in predictable ways. We organise the material according to the buyer's journey, which we separate into three stages: (i) market entry, (ii) search and offer, and (iii) post-acceptance.

Market entry

People encounter the system for transacting houses only once they become players in the market. However, behavioural phenomena that influence decisions prior to activity in the market may matter for at least two reasons. First, perceptions of how the market functions and the information that it makes available may influence both prospective buyer's and seller's decisions regarding whether to enter the market, with implications for demand and supply. Second, the decision-making process for entering the market may be relevant for understanding how people behave once they become active participants.

One simple observation is that a market that exposes participants to uncertainty and stress may be off-putting. Beginning with Ellsberg (1961), one of the most reliable findings of behavioural economics is that people generally dislike uncertainty or, more technically, that most of us are 'ambiguity averse'. Moreover, the extent of ambiguity aversion is related to our feelings of competence in whatever domain we are making a decision. For instance, we are happier to take risks in relation to familiar events than unfamiliar ones, even if the extent of perceived risk is the same (Fox and Tversky, 1995). Since prospective first-time buyers by definition have next to no familiarity, this uncertainty may deter many from entering the market. Yet sellers too have limited experience relative to most other markets they might engage with and, indeed, many will be first-time sellers. Consequently, dislike of uncertainty may effectively act like a transaction cost, reducing the volume of trade within the market. This could be a factor, for instance, in Ireland's high level of housing under-occupancy,[7] as older adults are dissuaded from downsizing. It follows that anything that can be done to reduce uncertainty in the system is likely to increase volume within the market.

There are, however, other behavioural phenomena that are likely to increase or decrease the likelihood that first-time buyers enter the market. 'Herding' occurs when the decision of a potential purchaser is influenced by the observed decisions of influential others.[8] This can reflect perceptions that other people know something that the purchaser does not, or simply a preference for conformity (Bikhchandani & Sharma, 2000). Herding behaviour helps to explain the history of mispricing and speculative bubbles in asset markets, including property, as partially or poorly informed individuals rush to capture a piece of a market (Shiller, 2005). Analyses of the Irish property bubble during the 2000s conclude that herding played an important role in the acceleration of prices and overvaluation of property (Honohan, 2008; Nyberg, 2009). The prevailing financial wisdom of the time was "to 'get on the property ladder' regardless of how much one had to stretch" (Lunn, 2013, p.570) – a view that was widespread in the media also (Mercille, 2014). Once house prices in

[7] https://www.esri.ie/system/files/publications/QEC2024SPR.pdf

[8] Multiple similar terms refer to the broader concept of 'behavioural convergence', meaning that people copy the decisions of others and prefer not to depart from the norm. These include 'information cascades', 'conformity' and 'groupthink'. These terms have subtly different connotations. Here, we use the term 'herding' because this is most commonly used in financial contexts.

Ireland began to fall, the herd changed direction rapidly. Prices collapsed. For present purposes, the phenomenon of herding matters because it indicates that the mindsets of buyers and sellers within the market are likely to depart from an individual-level cost-benefit analysis, in which buyers and sellers dispassionately weigh up the pros and cons of buying and selling at a given price. Rather, market participants are likely to be unsure of their own judgement and may be swayed by signals about, and perceptions of, the judgements and decisions of others. This may occur in respect of the purchase of an individual property, or more broadly in respect of market entry. The overall effect will be to exaggerate price movements in both directions, adding to volatility.

Extrapolation bias is a cognitive phenomenon that may also amplify both upwards and downwards price movements. Extrapolation bias refers to giving disproportionate weight to recent trends over and above relevant trends further in the past. Extrapolation bias probably stems from a logic that is reasonable in most contexts where humans need to make predictions: if you want to know how a system is likely to behave, it makes sense to look at its most recent behaviour. However, this logic will fail us if the relevant system is governed by short-term momentum and longer-term mean reversion, as is typical of asset prices (Fuster et al., 2010). Extrapolation bias may lead buyers to be more willing to enter an upswinging market and to pay higher prices, or to delay purchase during a downturn, exaggerating the short-term trend.

Lastly with respect to market entry, a reliable empirical finding that most people sharply discount future outcomes relative to present ones – they display 'present bias' (Frederick et al., 2004). This bias has been linked to multiple household financial outcomes, including household income (Tanaka et al., 2010), saving (Ashraf et al., 2006) and credit scores (Meier and Sprenger, 2011). Present bias provides behavioural evidence in support of rules that limit mortgage borrowing, because it shows how a proportion of people are inclined to overstretch themselves in pursuit of an immediate outcome, such as a much-wanted house purchase, when the cost is to be paid in years to come. This can affect both market entry and how much buyers are ultimately willing to pay.

To summarise, the behavioural phenomena described in this subsection provide important background factors for considering the system for transacting houses. Uncertainties within the system do not only add stress, but are likely to reduce the volume of market activity, including the number of sellers. Herding and extrapolation bias are likely to increase the volatility of prices, especially if buyers and sellers are lacking transparent information about true market conditions that can compete with these forces for attention. They also indicate that both buyers and sellers may be unsure of their own judgement when it comes to the personal valuation of properties. Lastly, while the purchase of a house requires a balance between present and future outcomes, many people may be vulnerable to overstretching themselves financially.

Offer stage

Deciding how much one might be willing to pay for a house is a cognitively complex business. Properties have multiple attributes that are bound to matter to homeowners, including location, size, condition, charm, type of garden, quality of neighbourhood, suitability for family structure, and so on. This complexity entails great uncertainty about what properties are truly worth. Once people must integrate and trade off information about more than two or three non-correlated attributes, valuation is extremely imprecise (Lunn et al., 2021). Yet the integration of multiple attributes is only part of the cognitive demand. House-buyers also need to consider financial factors. These include the asset value, i.e. what is likely to happen to the property's value over time, and (for most buyers) the affordability of the mortgage repayments linked to whatever price they pay. Given all of these

factors, buyers will be highly uncertain when deciding willingness to pay, leaving them open to multiple behavioural influences in addition to the herding described above.

The behavioural economics literature provides evidence that when people face uncertain judgments of value, they can be prey to 'anchoring effects', whereby a reference number that is initially put into play can exert a disproportionate influence on subsequent judgments. People will typically display what is called 'anchoring-and-adjustment' (Tversky and Kahneman, 1974), using the first number as an initial guide but then adjusting insufficiently away from it as they become aware of additional factors. This mechanism has been shown to influence financial decisions such as credit card repayments, which can be anchored by the minimum payment requirement (Stewart, 2009).

The obvious corollaries to this in the housing market are asking prices and previous sale prices (e.g. sale prices of superficially similar properties once they appear on the Property Price Register, PPR, or recent sale prices picked up conversationally). There is specific evidence that these prices can act as anchors (Simonsohn and Loewenstein, 2006; Leung and Tsang, 2013). Of course, this is not to suggest that there is anything irrational or even ill-advised about buyers using these prices as guides for what they might pay. As described above, valuing houses is hard. Rather, the point is to recognise what this implies about the decision-making process, because it shows how easily it can be swayed. For instance, there is evidence that non-local buyers originating from an area with high prices may be anchored to these prices when moving to cheaper areas, and as a result end up paying above the odds (Ihlanfeldt and Mayock, 2012; Zhou et al., 2015). This evidence suggests that there are likely to be returns for agents and sellers to push asking prices as high as possible without appearing non-credible.[9] Present legal restrictions on asking prices leave agents with a lot of flexibility.

This is only one reason why the numeric price signals that prospective buyers get exposed to are likely to be on the high side, relative to how much people, *in general*, think a house is worth. Another reason is that systems for transacting houses do not as a rule provide information about the bids made by unsuccessful would-be buyers. Typically, following a sale, information will become available in relation only to the amount that the highest bidder was willing to pay for a house, not the amount that every other interested party was willing to pay. During the bidding process, bids may have appeared on the relevant agent's online site, although the rules that govern these systems are not transparent to users. Given the incentives involved, agents are more likely to communicate how many other bidders were involved only where demand for a property is high. The upshot of how information travels through the market, therefore, is that the numeric prices that prospective buyers are exposed to will consist of asking prices that are set as high as plausible and the sale prices paid by the people who proved willing to pay the most among all interested parties. This means that prospective buyers, in general, see only high (and the highest) numeric signals of what others are willing to pay for a property. In these circumstances, given the evidence on both anchoring and herding, the offer system is likely to bias willingness to pay upwards, perhaps more so the longer a buyer is active in the market.

The process just described is likely to be amplified by the open offer system, relative to any system that limits buyers to a single bid. This is because bidders who have not bid the highest are likely to receive information only about other bids that are higher than their own. All numeric indications of

[9] While in general it is likely that signalling high value through a high asking price is a dominant strategy, there may be circumstances where agents want to set a low asking price to entice initial interest, for example where a rapid sale is sought or a where a house has unique properties that need to be seen to be understood.

what people are willing to pay will be biased upwards, relative to the distribution of willingness to pay among prospective buyers.

One of the most consistent findings of behavioural economics is that people are 'loss averse'. When people make decisions, losses loom larger than gains of the same size and, moreover, when faced with losses, people will take risks to avoid them that they would not take when faced with equivalent gains (Kahneman and Tversky, 1979). There is good evidence that loss aversion affects the decision-making of sellers in the housing market. When property prices are falling, sellers who face selling at a price below the one they originally paid set higher asking prices than do sellers not facing a loss. This effect has been recorded across markets in the USA, (Genesove and Mayer, 2001), Europe (Andersen et al., 2022), New Zealand (Greenaway-McGrevy & Sorensen, 2021) and Hong Kong (Leung and Tsang, 2013). The upshot is a reduced volume of sales and slower price adjustment in a falling market.

It is also likely, though less certain, that loss aversion affects buyers, especially in an open offer system. This might seem strange, given that buyers are, by definition trying to gain ownership not relinquish it. However, there is evidence that loss aversion kicks-in once buyers begin a process of trying to acquire something. Feelings of loss can occur for choice options that are considered but ultimately not owned (Carmon et al., 2003). In auction settings, specifically, prospective winners may feel a sense of psychological ownership towards the good that strengthens the longer an individual spends as the highest bidder (Ariely and Simonson, 2003). Put simply, once people think there is a good chance of acquiring something, the more like a loss it feels if it ultimately goes to someone else. This is referred to as 'anticipated loss aversion' and it provides an explanation for a phenomenon that has puzzled economists for many years, namely that when people make purchases via an auction, they tend to overbid relative to how much they would pay when purchasing via another mechanism. While there are multiple competing explanations for this general finding, there is also direct evidence that aversion to losses plays a part (Delgado et al., 2008) and recent evidence that anticipated loss aversion may be the largest factor (Kim and Ratan, 2022). In what the economics literature refers to as 'first-price English auctions', people engage in multiple, ascending, competitive bids until a highest bid is made. Evidence shows that this mechanism can induce a degree of 'auction fever', whereby people overbid simply through determination to emerge as the winner (McGee, 2013). Thus, although people are known to overbid in auctions generally, they may be more inclined to do so when there is competitive repeated bidding and when they enjoy time as the highest bidder, relative to a sealed bid auction in which they make a single bid.

Overall, the evidence from behavioural economics supports the conclusion that prospective buyers during the offer stage are likely to revise upwards what they are willing to pay, in response to high price signals, and to end up bidding more than they initially intend to bid, as they experience the ups and downs of the bidding process. Furthermore, these findings specific to the offer stage may interact with factors described in the subsection on market entry. During the bidding process, prospective buyers must weigh up the prospect of acquiring the specific property they are bidding on against the more uncertain prospect of searching again to look for another one, making the more certain prospect more attractive. If prices are rising, they are likely to extrapolate the trend and expect further rises, resulting in time pressure to find a property and bid successfully. Because of the uncertainties they experience when trying to value a property, buyers may be particularly vulnerable to signals about how much the herd might be willing to pay. Because people discount future costs relative to current ones, buyers may take a risk on being able to afford higher than initially anticipated mortgage costs in order to up their bid to avoid immediate disappointment. The implication is that the system encourages buyers to stretch themselves, especially when prices are

rising. As well as adding to price volatility, this entails greater financial risk, most obviously for the buyer but also for the seller. It is a reasonable assumption that the more a buyer stretches themselves, the greater the possibility that they have to revisit their financial arrangements, perhaps applying for mortgage approval for a higher amount, leaving themselves short to cover unanticipated transaction costs or short of precautionary savings for a period of time. Even 'cash buyers' who are not financed via a mortgage may be vulnerable if they end up spending more than originally intended.

This analysis has one further implication worth considering from a policy perspective. An issue with the open offer system is that, when communicating with prospective buyers, agents and sellers have an incentive to exaggerate the interest in a given property or, worse, to engage in the practice of 'ghost bidding' – communicating fictitious rival bids to encourage buyers to up their own bid. Detail on regulations relating to ghost bidding is given in Box 1. This specific piece of malpractice may or may not occur at meaningful levels, but members of the public believe it to be a problem.[10] One reason may be that they can see that there is an incentive to engage in the practice and that it would be difficult to detect. More generally, there are incentives and opportunities to exaggerate buyer interest (e.g. by talking up how many people are viewing the property, communicating expectations of new bidders, etc.). One advantage of a sealed bid system is the removal of some of these incentives and opportunities, which arise because of the repeated bidding and duration of the process and in the open offer system.

[10] https://offr.io/media/consumer-technology-offr-set-to-transform-buying-and-selling-property/1

Box 1. Ghost Bidding

Under an open offer system like Ireland's, the possibility of 'ghost bidding' is particularly concerning in light of the findings of behavioural economics. Ghost bidding occurs when fictitious bids are reported to prospective buyers. The prevalence of the ghost bidding is unknown, since it is essentially impossible to measure An update to the Property Services (Regulation) Act 2011 (Minimum Standards) Regulations 2020, specifies:

> "15. (1) … a licensee shall disclose to a client who has engaged the licensee for the purpose of the sale of land, other than by auction, or letting of land, by the means and within such timeframe as is agreed with the client, all offers to purchase or rent the land, including any conditions attaching to the offers, and all recorded price offers on the land, unless otherwise instructed in writing by the client.
>
> (2) A licensee shall in respect of all offers to purchase land, other than by auction, or to rent land, provide written confirmation to each offer or on receipt of his or her offer.
>
> (3) A licensee shall not express or imply to any person, including a client or his or her representative, that an offer has been received unless that offer has been received by the licensee."
>
> *Note: licensee in the above refers to selling agents.

Whether this has eradicated the issue or improved public trust in the system is not known. Sanctions and prosecutions under the act are infrequent (https://www.psr.ie/sanctions-prosecutions/).

Post-acceptance

The various systems under review here can be broadly characterized at this stage as either offering immediate or delayed legal binding. In Ireland, England/Wales, Australia and USA, where contracts are not immediately binding following acceptance, there are no legal restrictions to stop buyers or sellers from pulling out of the deal during a period likely to last some months.

A particular concern is the possibility for sellers to accept a higher offer from another bidder before contracts are signed, generally referred to as 'gazumping'. The opposite occurrence, wherein a potential buyer withdraws after having an offer accepted, can also occur and is sometimes called 'gazundering'. The prevalences of these occurrences are unknown.[11] In Ireland, where price volatility is coupled with lengthy conveyancing periods, both sellers and buyers may often have incentives and opportunities to pull out of agreed sales, depending on how strongly the market is rising or falling.

Having a deal fall through is likely to be one of the most stressful experiences for market participants. However, over and above the stress and disappointment involved, there are at least two relevant findings from behavioural economics that might influence subsequent behaviour.

[11] In 2014, a time when house prices were rising rapidly, the Institute of Professional Auctioneers & Valuers (IPAV) suggested the practice was affecting more than 2% of sales. https://www.independent.ie/irish-news/estate-agents-demand-action-on-gazumping/30575211.html

The first we have already encountered: loss aversion. As stated above, as well as weighing losses more heavily than equivalent gains in their decision-making, people are also more willing to take risks to avoid losses. Thus, buyers who experience being gazumped will be more willing to stretch themselves financially to recover the losses, which might mean trying to outbid a gazumper for the specific property or, if the sale has fallen through because the house has simply been withdrawn, making larger bids for other properties.

The losses involved in these circumstances will often go beyond the loss of the purchase. There may be significant, tangible costs associated with the process after offer acceptance. Costs are likely to arise because of the engagement of surveyors, valuers, solicitors or conveyancers, and these are likely to involve both financial and time costs. This also means that prospective buyers may be prey to the 'sunk cost fallacy'. Sunk costs are irrecoverable payments that would be ignored by rational actors in a cost-benefit analysis of future decisions, yet there is widespread evidence that sunk costs actually do influence future decisions (Thaler, 1980; Garland, 1990) – people are often inclined to "throw good money after bad".

The upshot of these behavioural phenomena is that the period of delay before an agreed sale becomes legally binding is likely, in some cases, to further exaggerate buyer's willingness to pay more than they originally intended, or to stretch themselves in terms of affordability. At least, this is likely to be the case when prices are rising. When prices are falling, and especially when prices are falling sharply, the greater risk is clearly to the seller, as the buyer experiences an increasing incentive to pull out and either seek, or wait for, a better deal.

Summary of relevant behavioural effects

Table 2 provides a summary of the effects highlighted in this section.

Behavioural Effect	Definition	Relevance
1. Ambiguity Aversion	Avoiding situations or options with a high degree of uncertainty, or in which perceived competence is low.	Negative implications for housing demand or supply, reducing volumes, if buyers or sellers choose not to enter a highly changeable or uncertain market. Negative impact on decisions to keep bidding on a property or take longer to search for another.
2. Herding	Placing disproportionate weight on observable actions of others when making a decision.	Exaggeration of price volatility in rising or falling markets with lots of observed activity, increasing the likelihood of bubbles and crashes. Risk of poorly informed individual decisions.
3. Extrapolation Bias	Projecting recent trends (e.g., prices) linearly into the future.	Exaggeration of existing trends, increasing volatility. Buyers encouraged to pay more in a rising market, delaying in a falling market.
4. Present Bias	Caring disproportionately about short-term consequences relative to outcomes that occur in the future.	Buyers overstretching themselves to take on long-term financial risk, placing upward pressure on prices.
5. Anchoring Effects	Being influenced by reference numbers during decision making processes and failing to adjust sufficiently from them.	An overestimation of demand based on asking prices, highest bids or previous sale prices, as unsuccessful bids and bidders are largely unseen.
6. Loss Aversion	Weighing losses more heavily than equivalent gains; taking more risk to avoid a loss than to make an equivalent gain.	Sellers in a falling market set high asking prices to avoid losses relative to the price they paid. Buyers bid above original intentions to avoid "losing" a house to another bidder, increasing prices. Exacerbated by exaggeration of demand for s specific property or by gazumping.
7. Sunk Cost Fallacy	Allowing irrecoverable costs to influence future decisions.	Buyers or sellers who have spent time or money on a transaction that might fall through raise offers or lower prices, respectively, to save transaction and not "waste" sunk costs.
8. Auction Fever	Wanting to beat the competition and win an auction once entered.	Buyers in an ongoing bidding process encouraged to bid more than originally intended for a property, to beat fellow bidders.

Table 2: Summary of behavioural effects.

Policy implications

As the above analysis shows, when the system for transacting houses in Ireland is looked at through the lens of behavioural economics, there are reasons for concern. While there may be many other factors behind the price volatility that characterises Irish house prices, it is likely that some of this volatility is down to undesirable interactions between the system for undertaking transactions and how people make financial decisions, in light of evidence about the latter from behavioural economics.

Before considering the implications for policy, it is worth pausing to consider the strength of evidence presented here. Although many of the behavioural economic phenomena described in this paper are consistent with the observed volatility of domestic property prices, there is insufficient empirical evidence to be sure about how they play out in housing markets generally, and in the Irish housing market specifically. In other words, the arguments made here are conjectures and hypotheses that are informed by good evidence, but which have not been tested directly. We simply do not know how often the conjectured problems occur or how serious they are when they do. There may be considerable benefit to be had from high-quality behavioural research that explores the experience of buyers and sellers in Ireland, using methods able to test the relevant hypotheses.

That said, there are multiple behavioural phenomena that can reasonably be judged as likely both to be a negative influence on decision-making in the market and to increase the volatility of prices. Furthermore, there may be reforms to the system of transacting houses that would lessen or remove the potential for these phenomena to cause problems. Where reforms can be undertaken and there is no or little cost involved, for example where changes to the system are being undertaken in any case, it would seem prudent to align any reforms with existing behavioural evidence.

In light of the above evidence and considerations, we discuss three issues: (i) transparency in the bidding process; (ii) the relative merits of an open offer versus sealed bid process; (iii) delayed legal binding.

Transparency

Valuing property is difficult. Market participants, who have little or no market experience in buying or selling, are bound to feel uncertain about how much they should be willing to pay or accept for a house. They are likely, therefore, to be strongly influenced by what other people think property is worth and to be anchored to whatever numeric amounts they encounter. As the system currently stands, for buyers this translates into asking prices, feedback on bids from agents (including what they display on online systems), and, since 2010 but with some time-lag, sale prices for similar properties on the Property Price Register (PPR).

Suppose, instead, that prospective buyers and sellers were able to view the asking prices and all of the bids that had been made for similar properties. This would mean that market participants would no longer be exposed only to the valuations of the highest bidders, but to those of all bidders. They would also get insight into how many bidders there were for different houses and to the bidding process itself. Buyers and sellers would be able to see how often the sale price greatly exceeds the asking price, comparing situations where only a few prospective buyers are chasing the property versus those when many are. For inexperienced market participants, this kind of feedback could be very helpful. Making such data publicly available would also result in more research and more digestible lessons about a system that presently is a mystery to many who must engage with it. More broadly, if people are going to be anchored by prices put in play by others, it would be best if they were anchored to the most applicable ones.

Such transparency would have other benefits. If bids had to be posted publicly rather than communicated to single potential counter-bidders, it would potentially reduce the likelihood of ghost bids or, at least, increase trust in the process. More generally, it would make it harder for sellers and agents to exaggerate demand. At present, buyers must gauge the trustworthiness of claims through intuition; they have no independent way to gauge true demand for the kind of house they seek. It would also reduce the amount of uncertainty about prices across the market as a whole, perhaps making buyers less inclined to worry about what else they can get and to keep stretching themselves further on a specific property. In this context, it is worth noting that many sellers are also buyers, so

any dampening effect on prices would be broadly neutral for those trading up. More generally, the provision of more accurate data to indicate true demand would be likely to lessen the dangers that herding and extrapolation bias contribute to inaccurate price perceptions and expectations.

There would, naturally, be some costs to establishing a system like this. Currently, licensees (agents) are required to keep a private record of all bids received for a minimum of six years, as well as to provide written confirmation to bidders. This requirement would need to be extended to make the data on all bids available to a public register, which would need to be set up and maintained. However, with modern IT systems, these costs may be small compared to the personal, social and financial costs associated with decisions made by actors in Ireland's domestic property market.

Lastly, an additional form of transparency within the system might benefit both buyers and sellers, but perhaps especially the latter. While agents generally require prospective buyers to provide proof of finance, it must be doubtful whether they accurately compare all bids with the financial ceilings of the buyers who bid on properties they handle. The behavioural findings described above suggest that some prospective buyers, especially on being outbid, are likely to try to stretch themselves further, perhaps going beyond an originally planned financial ceiling. There is an argument for requiring buyers to provide proof of finance to cover any bid they make. For sellers, this would reduce the likelihood of sales falling through due to shortcomings in buyer finance. For buyers, it would reduce the chances that they bid against others who, in reality, cannot afford the numbers that they are bidding. One potential downside to such a system is that prospective buyers may understandably not wish their financial ceiling to be disclosed to others. This can be avoided if the back-up required by the system only stipulates confirmation that a buyer has financial clearance to cover a specific bid, without disclosing their maximum potential bid.

The criteria for a good system for transacting houses outlined in the introduction were for it to make buying and selling as fair and as easy as possible, within the constraints of respecting and enforcing property rights, while minimising any potential for wider economic damage. Increasing the transparency of the system appears to fit with these aims, provided the administrative burdens of recording and publishing bids and furnishing proof of finance are kept small.

Should Ireland change to a sealed bid process?

While there may be other arguments for and against, the findings of behavioural economics, on balance, appear to favour a sealed bid process over an open offer one. An open offer system in which an auction is essentially conducted over a period of days or weeks, exposes potential buyers to more biased price signals, generates stress and disappointment and is likely to push loss averse buyers into taking risks by stretching their finances beyond the level that they originally planned. It should be noted that the evidence cited above regarding how people behave in different types of auctions suggests that buyers are in any case likely to be prone to some overbidding; competitive pressure can lead people to overbid in sealed bid auctions too. However, the balance of existing evidence on behaviour in auctions coupled with the behavioural economic analysis of repeated competitive decisions suggests that overbidding will be more likely when people make repeated bids over a protracted period of time.

Again, therefore, a sealed bid process appears to be more consistent with the criteria for a good system, provided the administrative burden can be kept minimal. Furthermore, a sealed bid process may have advantages when combined with the transparency arguments of the previous subsection. By reducing the number of bids (as opposed to bidders) and the time over which they are made, a sealed bid system can reduce regulatory burden by making it easier to comply with increased transparency, ensuring that that bidders have sufficient finance in place and that all bids are properly

recorded. Depending on the precise system deployed, a sealed bid system can also have benefits with respect to the point in the process at which deals become legally binding, which we consider next.

When should deals be legally binding?

The appeal of transaction systems in which accepted offers become immediately legally binding (as in New Zealand, Canada, and practically so in Scotland) is that they incentivise genuine offers and reduce the likelihood that market participants incur unnecessary opportunity and monetary costs. This is at its most obvious when it comes to gazumping and gazundering, both of which are, in straightforward terms, unfair, as well as being costly to their victims. The effective removal of bidders who cannot, in reality, afford the bids they make, is also fairer to other buyers. For sellers, an immediately binding system would eliminate wasted time spent with potential buyers who are not sincere or do not have the required funds to follow through. A process in which deals become legally binding at an earlier stage would also reduce the chances that buyers spend substantive sums on surveys and other services associated with a specific property only for the seller to withdraw before contracts are exchanged. For the market as a whole, the reduction in uncertainty would again be beneficial.

There are of course downsides, which include costs associated with the preparatory work to be done by buyers prior to an offer being made, both financially and through time spent preparing bids for properties that are ultimately unsuccessful. These are mostly costs that successful buyers are in any case going to incur at some stage in the process, once they do manage to acquire a property. However, some costs would be incurred by people who, in the end, do not buy a house at all. Additionally, it should be noted that systems that allow immediate legal binding may include requirements on sellers, such as the Home Report in Scotland—requirements designed to offset the additional costs imposed on buyers by additional preparatory work.[12]

The Canadian system of offer to purchase is interesting to recall in this context, since it includes the possibility for sellers to make binding counter-offers. In this way, the system comes closer to what is known as a 'double auction', where both buyers and sellers post prices which become binding when they match. One of the classic findings of experimental economics is that double auctions are successful in getting markets to clear, converging to prices at which supply matches demand better than other systems of transaction (Smith et al., 1982). Allowing binding offers from both buyers and sellers within the system for transacting houses might make buying and selling easier.

Overall, moving to a system where bids were legally binding would probably be fairer, respectful of property rights, and likely to reduce price volatility, but might feel like a greater burden for some prospective buyers.

[12] One possible alternative to a system of legally binding bids is simply to try to speed up the conveyancing process. The UK's Labour Government introduced Home Information Packs (HIPs) in the late 2000s as a requirement for marketing a property in England and Wales (Wilson, 2010). The packs required an assortment of documents (Energy Performance Certificate, sale statement etc.) to be presented to potential buyers at the earliest opportunity. The aim was to reduce uncertainty and shorten the conveyancing period and, thus, likelihood of sales falling through. HIPs were short-lived, as they were scrapped by the Conservative-led coalition. It is unfortunately difficult to assess their impact empirically, as their period of use coincided with the global financial crisis, which had dramatic effects on house sales. Similar legislation in Ireland—the Seller's Legal Pack for Property Buyers' Bill 2021—awaits further consideration, having passed the second stage in the Dáil in October 2023.

Conclusion

Recent decades have seen great advances in understanding of how people make economic decisions, based on empirical studies in behavioural economics. We compared the system for transacting houses in Ireland against the available evidence. There are good reasons to believe that aspects of the system are inclined to increase price volatility generally and to produce more specific instances where either buyers or sellers experience unfairness, losses and stress. Consideration of this evidence implies that changes to the transparency of the system, to the offer process and to when deals become legally binding could make the system easier and fairer, while protecting property rights and reducing the likelihood of negative impacts on the wider economy, provided administrative burdens on market actors and agents are minimised. These benefits must be weighed against the costs of changing the system and other factors, such as legal issues, although alternative systems operate successfully in other common law countries that experience less price volatility.

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