NBER WORKING PAPER SERIES

# NAR SETTLEMENT, HOUSE PRICES, AND CONSUMER WELFARE

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Working Paper 32855
http://www.nber.org/papers/w32855

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
August 2024, Revised October 2025

We thank seminar participants at the Federal Housing Finance Agency, the Richmond Fed Real Estate Commissions and Market Frictions Conference, and NBER Summer Institute Real Estate meeting for helpful comments and suggestions. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

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JEL No. G0, G2, G50, L0, R20

## ABSTRACT

Motivated by the recent National Association of Realtors (NAR) settlement, we examine how reduced real estate agent commissions affect home prices, housing turnover, and consumer welfare. Using a calibrated dynamic structural search model, we show that by reducing future transaction costs, lower commissions raise the value of housing as a durable asset and tend to increase house prices. While reduced fees generally improve consumer welfare, most gains accrue to current homeowners, with limited benefits for prospective buyers. Higher prices may also crowd out financially constrained households, suggesting that lower agent fees are unlikely to significantly improve housing affordability and access. Our findings underscore the importance of accounting for market dynamics, consumer heterogeneity, and general equilibrium effects. They also shed light on the redistributive implications of technological innovations—such as those leveraging AI—that reduce transaction costs. Finally, our analysis suggests that static IO-style models may be ill-suited to studying transaction costs in durable goods markets, where dynamic considerations and repeated resale are central, as this can lead to misestimated magnitudes and even incorrect signs of key effects.

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## I. Introduction

Real estate commissions have been a longstanding point of contention in the U.S. residential housing market. Despite significant technological advancements that have reduced the costs of home search and matching—such as online platforms like Zillow—real estate agents continue to charge substantial commission fees that have remained largely unchanged. In a typical housing transaction, commissions range from 5-6% of the sale price, with the fee usually split between the buyer's agent and the seller's agent, yet the entire cost falls on the home seller. Notably, real estate commissions in the U.S. are among the highest in the world, more than double the average in other developed economies.[1]

A series of recent court decisions, culminating in the National Association of Realtors (NAR) settlement, seeks to disrupt the existing equilibrium by implementing measures designed to reduce agent fees. Effective August 17, 2024, these rulings have the potential to significantly impact a wide range of stakeholders, including consumers, real estate agents, and the broader economy. They have also sparked extensive debate among media commentators, consumer advocates, and the real estate industry. In addition, a growing wave of new technologies, such as advanced data analytics and digital platforms, can further disrupt traditional real estate practices and drive down transaction costs more broadly.

Although the full impact of these changes has yet to unfold, in this paper we explore their potential consequences. Specifically, we examine the equilibrium effects on house prices and consumer welfare, assuming that these regulatory changes and technological innovations result in reduced agent fees or transaction costs more broadly. To do this, we calibrate a dynamic structural search model of the housing market to analyze the economic forces driving the relationship between agent commissions and housing market equilibrium. In our primary counterfactual analysis, we focus on the assumption that the settlement will lead to a reduction in agent fees, particularly on the buyer's side.

Our model, based on Buchak et al. (2022), operates in continuous time. Initially, a homeowner is matched with a house, receiving a flow benefit, which reflects the net consumption value after

[1] According to KBW Research, the average commission for real estate agents is about 5.4% of the home acquisition price, compared to an average of 2.7% outside the U.S.

costs. At any given time, there is a probability that the homeowner becomes unmatched from the current house and begins the process of moving. Due to balance sheet constraints, owning two homes simultaneously is prohibitively expensive, requiring the homeowner to sell the current house before purchasing a new one. Once a suitable new house is found and bought, the homeowner is matched with this new property. Transactions occur within a standard search market, where sellers list their homes and are randomly matched with buyers. In the baseline analysis, sellers pay a fixed percentage of the sale price to a real estate agent, who otherwise remains passive.

We analyze two primary counterfactual scenarios. In the first, we assume the current arrangement persists, where the seller pays both the buyer's and seller's agent fees. However, we assume that these fees will decrease due to heightened competition and transparency in the real estate agent market. In the second scenario, we explore a "decoupling" arrangement, where the buyer and seller each cover their respective agent fees. We then assess how these reductions in agent fees influence the housing market equilibrium.

In our main analysis, we assume that changes in real estate agents' fees do not alter the fundamental parameters of the house-selling process. As a result, our primary counterfactuals likely represent an upper bound on the potential benefits to consumers, assuming that reduced agents' fees do not negatively affect the underlying dynamics of house matching. However, it is possible that well-compensated agents could enhance the selling process, for example, by increasing the rate of buyer-seller matches. In an extended version of the model, we account for the possibility that variations in agents' fees may influence the quality of the search process.

Our analysis generates several findings. First, we show that, contrary to popular assertions by some media commentators and consumer advocates, a reduction in agent fees generally leads to an increase in house prices.[2] Consider the current market setting where the seller pays both the buyer's and seller's agent fees, which are now reduced due to greater competition and transparency in the real estate market. Reducing fees from the 6% baseline to 5% results in a 1.25% increase in home prices. At a 4% fee, home prices rise by 2.5%, and with a 3% fee, the increase is 4%.

[2] See. for example, https://www.cnn.com/2024/03/16/business/real-estate-commission-settlement-slash-prices/index.html; https://www.businessinsider.com/nar-settlement-antitrust-lawsuits-agent-commissions-affect-home-prices-2024-3?op=1; https://www.vox.com/money/24106230/nar-realtors-settlement-real-estate-house-prices.

We observe similar patterns in the "decoupling" scenario, where buyers and sellers each pay their respective agents. This counterfactual involves two opposing effects: decoupling generally lowers home prices, while a reduction in agent fees tends to raise them. First, simply shifting the buyer's agent fee from the seller to the buyer—without changing the fee amount—reduces home prices by approximately 2.5%, as buyers are compensated for their added cost through a lower purchase price. However, despite this effect, a reduction in the buyer's agent once again leads to higher home prices. If the seller's agent fee remains fixed at 3%, reducing the buyer's agent fee from 3% to 1% results in about a 2% increase in home prices relative to the original 6% seller-paid all fees benchmark. Eliminating the buyer's agent fee altogether (0%) leads to a larger price increase of around 3.5%. In sum, even under decoupling, significant reductions in agent fees are associated with higher home prices.

To understand the economics of this price effects we show that reducing real estate agent fees affects home prices through two distinct mechanisms. The first is the direct passthrough effect: when transaction costs fall, sellers retain a larger share of the sale proceeds. With the original listing price now delivering higher net returns, sellers are incentivized to lower prices to increase the probability of sale. This effect is analogous to what is commonly observed in standard consumer good models, where lower transaction costs (or taxes) can be associated with lower prices. In our setting, the extent of this price adjustment depends on the relative responsiveness of buyers and sellers—driven by search frictions and how quickly buyers and sellers are matched.

The second mechanism is the valuation effect, which captures how changes in transaction fees influence the perceived value of the home to both buyers and sellers. Lower fees make the asset more attractive by increasing its resale value and reducing future transaction costs.[3] This added value raises sellers' willingness to hold out for higher prices strengthens demand, as buyers are more eager to purchase homes that are now less costly to trade. The result is increased competitive pressure on the demand side, allowing sellers to command higher prices. In our model counterfactuals, this effect is clearly visible: fee reductions are associated with higher home prices,

[3] One might consider a reduction in real estate agent fees to have a similar effect as a reduction in property taxes, as both can lower the user cost of homeownership and potentially increase home values (e.g., see Poterba 1991 for a discussion of the impact of taxes on home values).

shorter time on the market, and a decline in the seller-to-buyer ratio—consistent with more efficient market conditions and heightened buyer competition.

Next, we analyze how lowering real estate agent fees affects consumer welfare for both current homeowners and prospective buyers. Under the counterfactual where the seller pays all fees, consumer welfare increases steadily as fees decline: rising to 1.75% at a 5% fee, 3.25% at a 4% fee, 4% at a 3% fee, and up to 9.5% at a 0% fee, all relative to the baseline 6% fee. However, these average gains mask important differences between buyers and sellers. Current home sellers benefit most immediately from lower fees and higher sale prices. Although these gains are partially offset by higher purchase prices for their next home, they are balanced by lower future transaction costs and higher expected resale values. Existing matched homeowners also benefit from increased home values and reduced costs associated with future sales, as the asset they already own appreciates in value.

In contrast, under the free-entry condition, the buyer's value function remains unchanged, so the welfare gains only accrue to current homeowners and unmatched sellers. Even in the absence of free buyer entry, prospective buyers tend to benefit far less from fee reductions than existing homeowners. We find broadly similar patterns when examining the effects of lower agent fees in the "decoupling" fee scenario, where buyers and sellers each pay their respective agents.

The divergence in welfare effects between buyers and sellers can be explained as follows. Consider the scenario where the seller continues to cover all fees. For a prospective homebuyer, moving from a higher-fee to a lower-fee environment offers benefits such as reduced future transaction costs and potential increases in the resale value of their home. However, these advantages are offset by the immediate drawback of higher home prices. In contrast, a current home seller immediately reaps the benefits of lower fees and higher sale prices. While these gains are somewhat diminished by the higher cost of acquiring their next home, they still benefit from lower future transaction costs and an anticipated higher resale value. The difference in the timing and magnitude of these benefits explains the significant disparity in welfare effects between home sellers and prospective buyers.

Overall, our analysis suggests that a reduction in agent fees can lead to higher house prices and increased consumer welfare due to lower transaction costs, with most benefits accruing to existing homeowners. However, these advantages may diminish for financially constrained homebuyers, who, all else equal, could face greater difficulty qualifying for credit as home prices rise. Indeed, in the extension of our model to financially constrained buyers we show that in equilibrium, rising prices can crowd out prospective buyers who rely heavily on debt financing. Therefore, even if the NAR settlement results in a significant decrease in agent fees, it is unlikely to substantially improve housing affordability for prospective buyers.

Finally, our main analysis assumed that the level of real estate agents' fees did not influence the fundamental parameters of the house-selling process. As mentioned earlier, our primary counterfactuals can be viewed as a potential upper bound on the benefits to consumers, given that a reduction in agents' fees does not negatively impact the underlying dynamics of house matching. However, it's possible that well-compensated agents could enhance the selling process, for example, by increasing the rate of buyer-seller matches.

To explore this potential effect, we extended our model to account for the possibility that agents' compensation could influence the match rate between buyers and sellers. As anticipated, our findings suggest that as agents' skill and effort improve with higher fees, the welfare benefits of eliminating agents diminish. However, substantial consumer benefits from reduced fees persist, unless agents are exceptionally more efficient in facilitating home sales or offer significant other unmodeled advantages to homeowners. For example, to make consumers better off with agents charging a 6% fee compared to a no-agent scenario, agents would need to facilitate matches at more than ten times the current rate. In practical terms, agents charging 6% would need to convert 10 showings into more than 100 showings to provide comparable consumer benefits.

Our analysis contributes to research on frictions and transaction costs in matching households to houses. We build on quantitative housing search and matching models (Wheaton 1990; Genesove and Mayer 1997; Genesove and Han 2012; Ngai and Tenreyro 2014; Landvoigt, Piazzesi, and Schneider 2015; Guren 2018; Anenberg and Bayer 2020; Piazzesi, Schneider, and Stroebel 2020; Guren and McQuade 2020; Rekkas, Wright, and Zhu 2020; Andersen et al. 2022; Agarwal et al. 2024). Within this literature, we are closely related to work on how intermediaries shape housing-market equilibrium, particularly real estate agents (Levitt and Syverson 2008; Hendel, Nevo, and Ortalo-Magné 2009; Barwick and Pathak 2015; Barwick, Pathak, and Wong 2017; Gilbukh and Goldsmith-Pinkham 2024) and tech-enabled intermediaries such as iBuyers (Buchak et al. 2025). More broadly, our paper intersects with the literature on decentralized trading in asset markets (e.g., Duffie et al. 2005; Atkeson, Eisfeldt, and Weill 2015; Gavazza 2016; Weill 2020; Chodorow-Reich, Ghent, and Haddad 2021).

Our work is also related to a recent paper by Grochulski and Wang (2024) and Kim (2025), who examine the effects of real estate agent commissions on the housing market using models of home search and buying. However, their models are not fully dynamic and do not account for multiple ownership spells. This limitation may explain why, in contrast to our findings, they generally conclude that lower commissions lead to lower home prices, although our results are consistent in terms of consumer welfare. As we demonstrate, accounting for multiple ownership spells and the associated future expected costs of homeownership is crucial for accurately assessing the overall impact of changes in agent fees on house prices and consumer welfare, leading to the positive effect of reduced fees on home prices, and welfare gains primarily accruing to homeowners as opposed to buyers.

Our paper also connects to recent quantitative studies of housing and mortgage markets (e.g., Corbae and Quintin 2015; Berger et al. 2017; Favilukis, Ludvigson, and Van Nieuwerburgh 2017; Beraja et al. 2019; Greenwald 2018; Ganong and Noel 2020; Kaplan, Mitman, and Violante 2020; Buchak et al. 2020; Gorback and Keys 2020; Benetton 2021; Calder-Wang 2021; Wong 2021; DeFusco et al. 2022; Chodorow-Reich et al. 2024; Greenwald and Guren 2025; Benetton, Gavazza, Surico 2025), as well as to work on the effects of housing policy interventions (e.g., Mayer et al. 2014; Agarwal et al. 2017; Di Maggio et al. 2017; Ganong and Noel 2020).

Finally, our work has broader implications for structural analyses of consumer markets. Widely used static IO-style BLP models (Berry, Levinsohn, and Pakes, 1995) are designed for settings where consumers make one-time, static choices, abstracting from dynamics such as resale or intertemporal substitution. These models are well-suited to markets where a purchase leads to long-term ownership or consumption and resale is limited. In contrast, our analysis highlights that in markets for durable assets, such as housing, where dynamic considerations might are central and assets may be traded multiple times, static approaches can miss important effects of changes in transaction costs and other trading frictions. In such settings, ignoring these dynamics can materially affect both the magnitude and direction of estimated effects, with meaningful implications for policy and welfare analysis.

## II. US Housing Market and the NAR Settlement

### *II.A Real Estate Agents and the US Housing Market*

In the U.S. housing market, approximately 90% of transactions are facilitated by real estate agents.[4] A buyer's agent represents the interests of the individual looking to purchase a property, assisting with home searches that meet the buyer's criteria, providing market analysis, and negotiating offers. They guide buyers through the entire process, from the initial search to closing. Conversely, a seller's agent represents the property owner seeking to sell their home. Their role includes marketing the property, setting a listing price, managing offers from potential buyers, overseeing negotiations, and coordinating the sale process.

Real estate agent fees are typically structured as a commission, where agents earn a percentage of the property's sale price. Over the past several decades, this commission has traditionally been around 5-6% of the sale price, usually split between the buyer's agent and the seller's agent. For example, on a $300,000 property, a 6% commission would amount to $18,000, divided between both agents. In recent years, the total value of homes sold in the U.S. has typically ranged from approximately $1.5 to $2 trillion annually, with about 5-6 million transactions each year. This suggests that real estate agent commissions total around $100 billion annually.

In most U.S. real estate transactions, the seller is responsible for paying the real estate agent commissions. Although the seller pays the commission directly, this cost is typically factored into the overall sale price of the home. As a result, the commission impacts the seller's net proceeds, as it is deducted from the sale price before determining the final amount the seller receives.

Homes are typically listed on Multiple Listing Service (MLS) databases, which real estate professionals use to share information about properties for sale. The MLS provides agents and brokers with detailed property listings, including photos, descriptions, and pricing, helping them match buyers with suitable homes and streamline the property search process. It also fosters collaboration among real estate professionals, as agents often work together and share commissions on transactions listed in the MLS.

[4] According to the NAR 2023 Profile of Homebuyers & Sellers, 89% of buyers purchased their home through a real estate agent or broker.

The rise of online real estate platforms like Zillow.com and Realtor.com over the past couple of decades has significantly reduced the costs associated with home searching and matching for buyers. Despite these technological advancements, real estate agent commissions have remained largely unchanged (see Appendix A2). As of 2023, the average commission rate in the U.S. is about 5.5%, according to data from the National Association of Realtors. Notably, U.S. real estate commissions are among the highest in the world, more than double the average rate in other developed economies (see Appendix A3).

### *II.B The National Real Estate Association Settlement*

In the "pre-Zillow" era, the compensation structure discussed above likely reflected limited consumer information and less direct access to property data. However, in today's digital age, where consumers are more informed and capable of conducting independent research, this commission structure may appear outdated. Buyers and sellers can now handle many tasks themselves and make more informed decisions. Yet commissions remain essentially a fixed cost regardless of the level of service provided.

Motivated by these concerns, a series of recent court decisions have aimed to disrupt the existing equilibrium by increasing awareness and competition, particularly regarding buyer's agent fees, with the goal of reducing overall agent fees. These efforts culminated in the National Association of Realtors Settlement announced on March 15, 2024, which resolved litigation related to broker commissions brought on behalf of home sellers. [5] A key issue driving these actions is the practice of marketing buyer agent services as "free" to home buyers, since the seller typically covers the buyer's agent fee at closing. This arrangement can stifle competition in the buyer's agent market and obscure the true impact of these costs.

The essence of the NAR settlement is the potential for agent commissions to become more "decoupled." [6] The settlement mandates that the NAR eliminate the requirement for listing agents to offer compensation to buyer agents or other buyer representatives, although such compensation will still be allowed. Listing agents and sellers will be prohibited from including offers of compensation to buyer agents on the MLS, and MLSs must remove fields related to compensation

[5] See https://www.nar.realtor/newsroom/nar-reaches-agreement-to-resolve-nationwide-claims-brought-by-home-sellers.
[6] See https://www.nar.realtor/the-facts/nar-settlement-faqs for details.

information. Moreover, offering or accepting compensation to buyer brokers will no longer be a condition for MLS membership and participation.

Buyer's agents will now be required to enter into a written agreement with prospective homebuyers before showing any properties. The NAR settlement mandates that buyer's agents disclose their compensation in this agreement, with the disclosure being specific and not open-ended; vague language such as "whatever amount the seller is offering to the buyer" is not allowed. The agreement must clearly state that the agent will not receive compensation from any source exceeding the amount or rate specified in the agreement. Additionally, agents must inform clients that their compensation is fully negotiable and not determined by law. Finally, agents are prohibited from filtering or restricting listings based on the compensation offered.

These changes are unfolding within a broader environment of rapid technological innovation. Emerging digital tools are streamlining search, valuation, and transaction processes in the housing market, potentially reshaping traditional roles and fee structures. As these technologies mature, they may further reduce trading frictions and intensify competition, challenging the conventional agent-based model.

Overall, consumer advocates and market analysts anticipate these regulatory changes will over time raise awareness of buyer's agent fees and enhance competition among real estate agents, ultimately leading to a decline in agent fees, particularly on the buyer's side. In combination with regulatory shifts like the NAR settlement, the technological innovations could also reshape how buyers and sellers interact—compressing fees further. In line with this expectation, our counterfactual analysis will simulate the effects of a reduction in buyer's agent fees on housing market equilibrium.

## III. Equilibrium Housing Trading Framework with Dealer Intermediation

To assess the impact of agent fees, we utilize an equilibrium search and matching model applied to housing search, as in Buchak et al. (2022). We calibrate the model to the U.S. housing market and then examine the role of real estate agents' fees and their effects on house prices, consumer welfare, and housing allocation.

### *III.A Model Setting*

The model operates in continuous time. A homeowner is initially matched to a house and receives a flow benefit (consumption value net of costs). With some probability, the match dissolves and the household initiates a move. Balance-sheet constraints require selling the current home before purchasing the next. After finding and buying a suitable home, the household becomes matched again. Transactions occur in a standard search market in which sellers list properties and are randomly matched with buyers. In the baseline, the seller pays a fixed percentage of the sale price as a brokerage commission, and the agent is otherwise passive.

#### *III.A.1. Market Structure*

*Homeowners:* A homeowner occupies one of three states and transitions between them over time: $\{h, s, b\}$. State $h$ denotes a matched homeowner who is content with their current residence; $s$ denotes a *seller* who owns a house but has become dissatisfied and is in the process of selling it; $b$ denotes a *buyer* who does not currently own a house and is searching to purchase. Let $\{m_h, m_s, m_b\}$ represent the masses of homeowners in each state. Homeowners become unmatched at rate $\mu$.

All agents discount the future at a rate $\rho$. A matched homeowner (state $h$) owns a house that delivers flow utility $u_h + \tilde{\epsilon}_i$. The term $u_h$ is the common utility component across homeowners, such as housing services and amenities net of holding costs, while $\tilde{\epsilon}_i$ captures idiosyncratic taste for the specific property (e.g., build, location, school district). When the match dissolves, the household becomes a seller (state *s*) and receives a flow utility $u_s$, reflecting mismatch (e.g., a new job that lengthens the commute). An unmatched buyer (state *b*) receive a flow utility $u_b$.

*Listings and Matching:* Selling households list their homes and meet buyers at random. Aggregate matches per unit time follow a Cobb–Douglas matching function:

$$M(m_s,\ m_b) = A m_s^{\theta} m_b^{1-\theta}, \tag{1}$$

where $m_s$ and $m_b$ are the mass of sellers and buyers, respectively. The individual seller and buyer match rates are then given by:

$$\lambda_s = M/m_s, \tag{2}$$

$$\lambda_b = M/m_b. \tag{3}$$

The parameter $A$ indexes the overall efficiency of the matching process: a higher $A$ means the market is better at matching buyers and sellers, i.e., it yields more matches for given $m_s$ and $m_b$. The parameter $\theta \in (0,1)$ is the elasticity with respect to sellers; together with *(1- θ)* it implies constant returns and governs how market tightness affects buyer vs. seller arrival rates.

*III.A.2. Individual Agents' Problems*

The agents maximize their expected utility. Let $\{v_h, v_s, v_b\}$ represent the value functions of matched households, sellers, and buyers, respectively.

*Matched homeowners* take no actions. They receive a flow utility $u_h + \tilde{\epsilon}_i$ from their current house and the continuation value of remaining in the house, which depends on the likelihood of becoming unmatched, $\mu$. The value function for a matched homeowner $i$ is as follows:

$$\rho v_h^i = u_h + \tilde{\epsilon}_i + \mu(v_s - v_h^i), \tag{4}$$

where $\rho$ is the subjective discount rate, $\mu$ is the unmatching rate, and $v_s$ represents the value of being a seller. The value a matched homeowner derives from their house can be expressed as the sum of a common component, $v_h$, which reflects how the average homeowner values their house, and the idiosyncratic home valuation, $\epsilon_i$, where $v_h^i = \frac{u_h + \mu\, v_s}{\rho+\mu} + \frac{\tilde{\epsilon}_i}{\rho+\mu} \equiv v_h + \epsilon_i$ and $\epsilon_i \equiv \frac{\tilde{\epsilon}_i}{\rho+\mu}$ is the capitalized idiosyncratic flow utility from the house. We assume $\tilde{\epsilon}_i \sim \mathrm{E}(\tilde{\epsilon}_i)$ is distributed type-1 extreme value distribution with scale parameter $\tilde{\sigma}$; equivalently, $\epsilon_i \sim \mathrm{E}(\epsilon_i)$ is distributed type-1 extreme value distribution with scale parameter $\sigma \equiv \tilde{\sigma}/(\rho + \mu)$.

*Selling homeowners* choose a listing price to maximize expected discounted utility, trading off a higher conditional price against a lower acceptance probability. Given a listing price $p$, a matched buyer accepts the offer with an endogenous probability $\pi(p)$. The acceptance probability is non-degenerate (and thus sellers possess market power) because houses are horizontally differentiated. After selling at price $p$, and brokerage commission rate $\phi$ (a fraction of the sale price), the seller receives the price net of the broker's fee, $(1-\phi)p$, and transitions from a seller to a buyer, yielding a continuation gain $v_b - v_s$. Encounters with potential buyers arrive at a rate $\lambda_s$. The value function for a seller can thus be expressed as:

$$\rho v_s = u_s + \lambda_s \max_p\{\pi(p)[(1-\phi)p + v_b - v_s]\} \quad (5)$$

Buyers, both former owners who have sold and first-time entrants (e.g., renters, in-migrants), search for a home. Upon matching with a seller, their idiosyncratic taste draw $\epsilon_i$ is realized, and they must choose whether to accept the offer or continue searching. The buyer accepts price $p$ iff $v_h + \epsilon_i - p \geq v_b$, i.e., the value of owning the matched house exceeds the continuation value of remaining a buyer. The buyer's value function is given by:

$$\rho v_b = u_b + \lambda_b \mathrm{E}_\epsilon[\max\{v_h + \epsilon_i - p,\ v_b\} - v_b] \quad (6)$$

In most of our analysis we will impose buyer free entry, so the buyer value satisfies $v_b = c$ in equilibrium. This reflects a large pool of potential entrants (renters, in-migrants). Here, *c* captures both the reservation value of alternative housing options, such as renting, and any fixed or psychological costs associated with entering the housing market. We examine alternative assumptions about entry and outside options in Appendix A.4.

*III.A.3. Population Dynamics*

The mass of matched homeowners falls at the exogenous unmatching rate and rises with the endogenous flow of successful matches:

$$\frac{dm_h}{dt} = -\mu m_h + M(m_s, m_b)\pi(p) \quad (7)$$

The mass of sellers rises as matches dissolve and falls when listings sell and sellers transition to buyers:

$$\frac{dm_s}{dt} = \mu m_h - M(m_s, m_b)\pi(p) \quad (8)$$

We normalize the mass of matched homeowners to one and impose buyer free entry at fixed reservation value *c*.

*III.A.4. Equilibrium*

An equilibrium consists of value functions $(v_h, v_s, v_b)$, a listing price $p$, and masses $(m_h, m_s, m_b)$ such that:

1) Value functions and listing price equations are satisfied (equations (4)-(6))

2) The seller's pricing problem (equation (5) is solved, and buyers follow the acceptance rule implied by (6)
3) The laws of motion (equations (7)-(8)) hold; we normalize $m_h$ to one and impose free entry for buyers so that $v_b = c$.

We focus on the steady state, where (7) and (8) are equal to zero.

**III.B Model Calibration**

*III.B.1 Data*

We calibrate the model, broadly following Buchak et al. (2025), using a mix of normalizations, literature targets, and a simulation-based method of moments. The calibration draws on data from HUD, public Zillow releases, and NAR surveys.

*III.B.2 Normalizations and Externally Calibrated Parameters*

Table 1 outlines our main parameters, with Panel B presenting the externally calibrated values. Following Guren (2018), we set the discount rate $\rho$ to 0.05. According to NAR estimates, the median tenure in a home is 13 years,[7] which corresponds to an annual moving rate (unmatching) of roughly $\mu = 1/13 = 0.077$. We normalize the seller utility flow, $u_s$, to zero so buyer and matched-homeowner flows are measured relative to sellers. From Anenberg and Bayer (2020), we set the seller's technological share in the matching function ($\theta$) to 0.16. We normalize the mass of matched homeowners to 1; with constant returns in matching, other masses are measured relative to this numéraire. We normalize the buyer entry cost $c$ to zero. For counterfactuals with financially constrained buyers, we increase effective price sensitivity to reflect higher borrowing costs, setting the surcharge to 5.36%, the capitalized average cost of supplemental mortgage insurance (see Section V.A). The baseline combined brokerage fee is 6%, paid by the seller.

*III.B.3 Parameters Calibrated to the Data: Identification*

Four parameters remain to be calibrated: the matched flow utility, $u_h$, the unmatched buyer flow utility, $u_b$ and the matching productivity parameter, $A$, and the variance of the T1EV shock over idiosyncratic house preferences, $\sigma$. We calibrate these parameters by using the simulated method

[7] https://www.nar.realtor/research-and-statistics/research-reports/social-benefits-of-homeownership-and-stable-housing

of moments, targeting four key moments: observed house prices (HUD), time on market (Zillow), the seller-to-buyer ratio (Redfin), and the average number of homes viewed per buyer during search (NAR surveys).

Intuitively, a higher $u_h$ (relative to $u_s$ and $u_b$) raises prices because buyers are willing to pay more to transition into a well-matched home; the price level therefore disciplines these parameters. $u_b$ and $\sigma$ jointly impact buyer patience and market tightness. If $u_b$ is low (a weak outside option), waiting is costly, so buyers accept sooner, reducing the number of viewings and the buyer-to-seller ratio. By contrast, a larger $\sigma$ (greater dispersion in idiosyncratic tastes) increase the option value of search, encouraging more viewings and a higher buyer-seller ratio. The matching efficiency level, $A$, sets market speed: higher $A$ yields more meetings and, holding other factors fixed, shorter time on market. As shown in Table 1 Panel A, the SMM exactly matches the target moments, with the implied parameters reported in Panel C.

## IV. Counterfactual Analysis

In this section, we use our calibrated model to perform a series of counterfactual analyses to assess the impact of changes in real estate agents' fees on house prices and consumer welfare. In our baseline counterfactuals, we assume that changes in agent fees do not directly affect the parameters of the search process ($A$, $\theta$), which represent the underlying market liquidity or the matching skill of real estate agents. Therefore, our counterfactuals may represent an upper bound on the potential benefits to consumers, as a reduction in agents' fees could also alter the parameters of the matching function. Nonetheless, even with this assumption, changes in agent fees are expected to have significant effects on equilibrium outcomes, including the speed of matches, home prices, and the redistributive effects between prospective buyers and home sellers, which we explore further below.

We analyze two primary counterfactual scenarios. In the first, we assume the current arrangement persists, where the seller pays both the buyer's and seller's agent fees. However, we assume that these fees will decrease due to heightened competition and transparency in the real estate agent market. In the second scenario, we explore a "decoupling" arrangement, where the buyer and seller each cover their respective agent fees. We then assess how these reductions in agent fees influence the housing market equilibrium.

### *IV.A Seller Pays all Fees Setting with Lower Agent Fees*

We begin by examining the existing market scenario where the seller continues to pay both the buyer's and seller's agent fees, now reduced due to increased competition and transparency in the real estate buyer's agent market. In our baseline scenario, we assume combined agent fees of 6%, which is close to the current market average of about 5.5% (as of 2023). We then explore the impact of reducing these fees in 1% increments, ranging from 6% to 0%. The 0% case represents an extreme scenario where agents are fully disintermediated by low-cost technological solutions. A more plausible post-settlement range for combined agent fees is between 3% and 4%, which aligns with fee levels observed in other developed countries. For instance, the 4% fee scenario could be interpreted as the seller's agent fees remaining at 3%, while the buyer's agent fees drop to 1% due to enhanced competition and transparency.

Figure 1, Panel (a), illustrates the relative change in equilibrium home prices as a percentage, with the x-axis representing the combined agent fees. The 6% fee level serves as our baseline scenario, where the change in house prices is set to 0% by construction.

We observe that a decrease in agent fees leads to a significant increase in home prices. Reducing the fees to 5% results in a 1.25% increase in home prices relative to the 6% fee benchmark. With a 4% fee, home prices rise by 2.5%. At a 3% fee, the increase reaches 4%. Finally, at the extreme 0% fee level, home prices increase by 9%.

Panel (b) illustrates how payments made by and to the transacting parties change in percentage terms relative to the 6% fee baseline as the combined agents' fees vary. The figure shows that as the fee decreases, the amount received by the seller, net of fees, increases. This effect is partly mechanical, as the seller pays a smaller fraction of the transaction price in fees. However, a significant portion of this effect is due to the equilibrium impact on house prices discussed earlier. Consequently, as fees decrease, the buyer's payment—reflected in the house price—also rises. Additionally, the amount received by real estate agents decreases. This decrease is not perfectly linear, as the reduction in the fee percentage is partially offset by the increase in house prices.

Next, we examine the impact of lowering agent fees on consumer welfare related to current or expected homeownership. Panel (c) of Figure 1 shows the average change in consumer welfare. As observed, there is a consistent increase in average consumer welfare as real estate agents' fees are reduced. Specifically, as fees decrease, consumer welfare rises progressively: to 1.75% at a 5% fee, 3.25% at a 4% fee, 4% at a 3% fee, and up to 9.5% at a 0% fee, all relative to the baseline 6% fee.

These average effects conceal important differences between buyers and sellers. Current home sellers quickly benefit from lower fees and higher sale prices. While these gains are partially offset by the higher cost of purchasing their next home, they are typically balanced by lower future transaction costs and higher expected resale values. Existing matched homeowners also benefit from the increase in the resale value of their homes and the reduction in future transaction costs. The direct benefit to current sellers is the largest (e.g., a 16% increase in welfare at 0% fees relative to a 9.5% increase overall) as they benefit almost immediately from the change.

Under the free-entry condition, the buyer's value function remains unchanged, so all welfare gains accrue to existing homeowners and to unmatched sellers attempting to sell their homes. There are, however, significant differences in buyer-seller market dynamics as a result of the fee changes, as shown in Panel (d). In particular, to keep buyers indifferent, more buyers enter the market, and the seller-to-buyer ratio decreases by roughly 10% in the case of 0% fees. With more buyers, houses transact more quickly, and the days to sale decreases by roughly 8%. The average number of buyer viewings also modestly decreases, as more buyers in the market means they face greater competition in purchasing homes. These changes, which appear to hurt buyers, are of course exactly offset in equilibrium by the fact that buyers are acquiring a more valuable asset, that is, a house which they will not have to pay an agent to sell when they eventually move.

Finally, as we will discuss in Section V.B, even without the free-entry condition, the price effects remain the same. Moreover, even without free entry of buyers, they will the typically benefit much less from the reduced fees than the existing homeowners.

### *IV.B "Decoupled" Fee Setting with Lower Buyer's Agent Fees*

To assess the robustness of these results, we next consider an alternative counterfactual scenario where the NAR settlement and associated changes lead to the decoupling of fees, with both buyers and sellers paying their respective agents' fees. In this scenario, we assume the seller continues to pay the seller's agent fee of 3%, while we vary the buyer's agent fee, now paid directly by the buyer, from an initial 3% down to 0%.

Figure 2, Panel (a), illustrates the relative change in equilibrium home prices as a percentage, with the x-axis representing the buyer's agent fees relative to the combined 6% fee level traditionally paid by the seller. We note that this counterfactual involves two opposing effects: decoupling generally lowers home prices, while a reduction in agent fees tends to raise them. We observe that simply decoupling the fees (e.g., reducing the buyer's agent fee to 3%) results in a decrease in home prices by approximately 2.5%. This outcome is intuitive, as when the buyer pays their agent's fees instead of the seller, the buyer is effectively compensated for this additional expense through a lower home price.

However, a reduction in the buyer's agent fees once again leads to higher home prices. As the fee decreases further to 1%, home prices rise more significantly by 2%. At a 0% fee, where the buyer's agent fee is entirely eliminated, home prices see the largest increase of 3.5%. This trend indicates that as the buyer's agent fee decreases, home prices tend to rise. Panel (b) illustrates how net payments to and from the various parties change with fees, showing a similar dynamic as in the previous counterfactual.

Next, we examine the impact of lowering agent fees on consumer welfare related to current or expected homeownership. [8] Figure 2, panel (c), shows the average change in consumer welfare. At a 2% fee, average consumer welfare increases by approximately 2%. As the fee decreases to 1%, consumer welfare rises by 3%. When the fee is eliminated entirely, reducing it to 0%, consumer welfare increases by just over 4 %.

As seen in our previous counterfactual analysis these gains exclusively benefit current homeowners and especially unmatched homeowners trying to sell their homes. When the fee is reduced to 2%, the seller's value rises by nearly 3%. At a 1% fee, the seller's value grows to 5.5%. With a 0% fee, where the buyer's agent fee is eliminated, the seller's value reaches nearly 8%.

Overall, both this analysis and our previous counterfactuals suggest that, regardless of whether buyers or sellers pay the buyer's agent fees, reducing these fees can lead to higher home prices

[8] It is important to note that shifting from a 6% seller-paid fee to a 3%-3% seller/buyer fee structure is not entirely equivalent holding prices fixed. Under a 6% seller fee, for the seller to net $100, the house price must be $106.4, which is what the buyer pays. In contrast, with a 3% seller fee and a 3% buyer fee, for the seller to receive $100, the house price needs to be $103.1, with the buyer paying a total of $106.2. This geometric averaging results in the buyer paying slightly less overall, while the brokers receive $6.2 instead of $6.4.

and improved consumer welfare. However, these benefits can predominantly accrue to current homeowners.

### *IV.C What Determines the Passthrough of Agent Fees to Home Prices*

The above counterfactuals illustrate that, contrary to popular assertions by some media commentators and consumer advocates, reducing agent fees can lead to higher house prices. The intuition behind this result is as follows: One might initially assume that a reduction in transaction costs would lower prices, with some of the savings passed on to the buyer. However, this static reasoning overlooks the dynamic nature of the housing market. A reduction in agent fees lowers future transaction costs, thereby increasing the value of housing as a durable asset and, all else equal, increasing demand for homes. In other words, reducing agent fees has a similar effect to lowering real estate taxes, which generally results in higher home values due to reduced ownership costs.

To make this intuition more formal we focus on a setting where the seller pays all fees and the price setting problem embedded in the equation (5):

$$\max_p \pi(p)[(1-\phi)p + v_b - v_s]$$

which implies that

$$p = -\frac{\pi(p)}{\pi'(p)} + \frac{v_s - v_b}{1-\phi}$$

Under our assumption that idiosyncratic house flow utility has a Type-1 extreme value distribution, above equation becomes

$$p = \frac{1}{1-\pi(p)} + \frac{v_s - v_b}{1-\phi}$$

The above equation implies that

$$\frac{\partial p}{\partial \phi} = \left(\frac{1-\pi}{1-\phi}\right)\left(\underbrace{\frac{v_s - v_b}{1-\phi}}_{Direct\ passthrough\ effect} + \underbrace{\frac{\partial(v_s - v_b)}{\partial \phi}}_{Valuation\ effect}\right) \tag{10}$$

The first term inside the parentheses, $(v_s - v_b)/(1-\phi)$, is the **direct passthrough effect**: a decrease (increase) in agent fees decreases (increases) home prices (since $v_s > v_b = c$). Recall that the optimal listing price reflects a trade-off between the proceeds from the sale and the speed of sale. Holding the value functions and the initial listing price fixed, a reduction in the fee increases the seller's net proceeds conditional on a sale. This implies that the original listing price is no longer optimal, and the seller will be willing to lower it to increase the likelihood of a successful sale. This is a standard pass-through effect, as commonly observed in static models where assets are traded only once: a decline in transaction costs leads to a decline in prices. The magnitude of this effect depends on the relative elasticities of demand and supply—in our context, determined by the fundamentals of the search process.

However, there's also a second, more subtle effect, $\partial(v_s - v_b)/\partial\phi$, which captures the **valuation effect**: how the higher fee impacts the buyer's and seller's valuation. In the model with free buyer entry, the buyer's value function remains unaffected by fee changes, so the overall sign of this effect is negative: lower fees tend to increase home prices, while higher fees reduce them. Intuitively, a decrease (increase) in fees raises (lowers) the seller's value function, since the asset becomes more valuable to the seller due to lower transaction costs associated with selling it. As we discuss in Section V.B, even without free entry, the term $\partial(v_s - v_b)/\partial\phi$ is typically negative since sellers value function typically decreases (increases) more when fees increase (decrease) compared to the buyer's value function. This implies that, in general, this second valuation effect tends to increase home prices as fees decrease.

To understand the economic intuition behind this effect let's first ignore this second effect. So, suppose the real estate agents' fees get reduced leading to lower home prices (direct passthrough effect). All else equal reduction in home prices and agent fees makes homeownership more attractive also because lower future resale fees increase the asset value of the home by making it cheaper—and effectively easier—to sell in the future, all else equal. However, under free entry, this cannot persist in equilibrium. If buyers expect higher utility from entering the market, more of them will do so until equilibrium is restored—i.e., until the buyer's value equals their reservation value. The resulting increase in demand for these now more attractive homes leads to upward pressure on prices. In our search model, greater demand due to more buyers entering raises the probability that a seller encounters a buyer with a high idiosyncratic valuation faster. This pushes sellers to charge higher prices.

If this second valuation effect is strong enough, lower transaction fees may increase home prices: greater buyer entry and stronger demand allow sellers to raise prices without sacrificing liquidity. Indeed, in our counterfactuals, we observe this mechanism at play—lower fees lead to higher prices are accompanied by a significant decline in the seller-to-buyer ratio and a decrease in time on the market (Panels d of Figure 1 and 2).

*IV.C.1. Comparative Statics Analysis*

In Figure 3, we simulate comparative statics where the first static passthrough effect dominates. Panel (a) plots the house price change resulting from decreasing sell fees from 6% to 5%. The blue line shows the price effect for the baseline seller flow utility (normalized to zero). The red line shows the price effect for a higher baseline seller flow utility, set at 95% of the matched homeowner flow utility. This means that the direct effective marginal cost of selling, the difference in valuations for being a seller versus being a buyer, is much higher, and so the static effect of a fee decrease, which reduces this marginal cost, is much larger. Nevertheless, even at this level with other parameters held as estimated, the price effect is still positive. The x-axis in Panel (a) varies the technological matching parameter $A$. As $A$ decreases, because the seller is less likely to match in the future, the dynamic valuation effect becomes less important. Hence, for a high $u^s$ (which increases the static effect) and a low $A$ (which decreases the dynamic effect), the price effect of a fee decline can become negative. It is important to note that while the model can, in principle, generate such price effects, they are accompanied by clearly counterfactual predictions along other dimensions. For example, Figure 3, Panel (b) reports the time-to-sale for the above scenarios. In the comparative static where the price effect of the fee reduction is negative, the model implies a time-on-market exceeding 20 years -- orders of magnitude above the observed average of roughly 90 days. In other words, producing a negative price effect in the model requires severely distorting the underlying market dynamics.

Another important component of the dynamic effect is the moving frequency. Because the fee only has to be paid when the homeowner moves, a lower moving frequency means that a change in fees is less consequential. This can be seen in Figure 3 Panel (c), which shows the price effect of moving from a 6% to a 0% fee. For a relatively frequent moving frequencies, shown, the price effect is larger, and as the moving frequency declines to once every 25 years, the price effect falls from the 10% to 5%. Thus, the model predicts that in the cross-section, the size of the home price increase folding the reduction in fees should be larger in areas where people move relatively more frequently.

## V. Extensions and Discussion

### *V.A Financially Constrained Buyers*

While our baseline analysis shows that a reduction in agent fees tends to raise home prices and increase consumer welfare—primarily benefiting existing homeowners—these gains may not extend to all market participants. In particular, financially constrained homebuyers may face new challenges as home prices rise, especially if they must borrow at a premium to finance their purchase. This suggests that even if the NAR settlement meaningfully reduces agent fees, its effects on housing affordability for prospective buyers may be limited and even adversely affect the credit constraint buyers.

To illustrate this mechanism, we extend our model to include a representative credit-constrained new entrant, who faces a borrowing cost when entering homeownership. Specifically, this buyer must pay an effective price of $(1 + k\ )p$ rather than $p$, capturing a borrowing cost. We calibrate $k$ based on the cost of private mortgage insurance on high loan-to-value (LTV) GSE loans. In our data, the average annual insurance premium is approximately 25 basis points, which, when capitalized at a 5% discount rate, corresponds to a one-time cost of about 5.3%.

The value function for this new, credit constrained entrant is given by:

$$\rho v_b^c = u_b + \lambda_b \mathrm{E}[\max\{v_h + \epsilon_i - (1 + \kappa)p, v_b^c\} - v_b^c]$$

For tractability, in our simulations shown in Figure 4, we assume that the overall market share of new entrants is small enough that their presence does not affect the equilibrium outcomes calculated in the counterfactuals in Section IV. Our results show that as agent fee reductions increase home prices, the value function of an entering credit-constrained buyer declines by as much as 7-8%. Thus, while lower fees increase average welfare, they may simultaneously tighten access to homeownership for financially constrained individuals and crowd out perspective buyers who rely heavily on borrowing.

### *V.B Role of Entry*

While much of our analysis assumes buyer free entry for tractability, the core economic mechanisms underlying our results remain valid even when this assumption is relaxed. The key insight is that the seller's value function, $v_s$, is generally more sensitive to changes in agent fees than the buyer's value function, $v_b$. Intuitively, a change in fees directly affects the net proceeds from a sale, which has a first-order impact on the seller's surplus. In contrast, the buyer's valuation depends on a broader set of factors—such as expected future resale value and future transaction fees. As a result, even in settings where buyer entry is fixed or inelastic, a reduction in fees leads to a disproportionate increase in seller surplus relative to buyer surplus. This asymmetry means that the valuation effect given by $\frac{\partial(v_s - v_b)}{\partial \phi}$ would be generally negative, meaning this effect would tend to contribute to the increase in home prices as fee declines.

To confirm this intuition, we recalibrate the model under different buyer entry assumptions and recompute the counterfactuals. In particular, rather than allowing buyer free entry, we (1) set $u_b = u_s$ and (2) fix the number of buyers to be $\overline{m}_b$, which we then calibrate. After calibrating the model to the same set of moments we recompute the counterfactuals shown in Figure 1 Panels (a)—(d). These new results are shown in Appendix Figure A1. All of the main results survive this alternative specification nearly exactly. The main difference, shown in Panel (c), is that *buyer* welfare is now able to adjust (recall before that the equilibrium entry condition forced buyer welfare to be constant across counterfactuals). Under this new specification, buyer welfare now modestly increases as well, reflecting the fact that buyers are purchasing a more valuable asset on which they expect to pay lower transaction fees in the future. However, consistent with our main counterfactuals, vast majority of gains from reduced fees continue to accrue to homeowners.

### *V.C Agent's Productivity*

The preceding analysis assumed that the level of real estate agents' fees did not directly influence the house-selling process. It is plausible, however, that agent compensation could positively influence the selling process in many ways, for example, by increasing the rate at which buyer-seller matches are formed. As discussed earlier, our counterfactuals in Sections IV.A and IV.B can be considered a potential upper bound on the benefits to consumers, as they assume that a reduction in agents' fees does not adversely affect the underlying parameters of the matching function. In this section, we explore how significant this impact on the matching rate would need to be for homeowners to prefer hiring such agents and paying the agents' fees over alternatives.

Specifically, we simulate a series of counterfactual equilibria where there is no agent fee, and the match rate $A$ is reduced by a multiplicative factor. This captures the scenario where, in the absence of an agent, homeowners avoid fees but experience a less efficient selling process. Additionally, we simulate a series of counterfactual equilibria where the combined agent fee is 3% and the match rate is similarly reduced, reflecting the idea that less well-compensated agents may exert less effort, or only lower-quality agents may remain in the market.

The results are presented in Figure 5. Each Panel shows two curves: a blue curve comparing outcomes from moving from a counterfactual low- or no-fee broker with lower skill, to a 6% fee broker with higher skill. For each scenario, we reduce the matching technology in the no- or low-fee scenario relative to the baseline by a multiplicative factor. For example, a value of 5x on the x-axis means that the 6% broker forms matches at 5-times the rate as the counterfactual no- or low-fee broker in the counterfactual.

Panel (a) shows the change in sale price. At the baseline 1x skill improvement, i.e., well-compensated brokers have no skill advantage, moving to a 6% fee broker reduces house prices by roughly 10% or 5% when moving from a no- or low-fee broker, respectively. These values correspond to the price changes shown in earlier figures. As the high-fee broker skill increases, the price effect of employing the high-fee broker increases. Our model estimates that relative to a 3% fee broker, the 6% fee broker must form matches at roughly 4x the rate to generate the same selling price; relative to no broker, the 6% broker must form matches at roughly 8x the rate to generate the same selling price. Panel (b), which shows the payments to the seller (net of fees), the bar for broker skill is even higher: Relative to a 3% fee broker, the 6% fee broker must form matches at roughly 7x the rate, and relative to a no-fee broker, the 6% fee broker must form matches well above 12.5x the rate.

Panel (b) shows only the tradeoff on the price dimension. There is also a time-to-sale dimension: A higher skill broker that arranges more matches can reduce the time the house spends on the market, thereby allowing the seller to move faster. Panel (c) confirms this direct effect, showing that as high-fee broker skill increases, the time-to-sale decreases significantly, with up to an 80% reduction if the broker is 12.5x more skilled. Thus, it is important to weigh the dollar cost of the high-fee broker against the welfare implications of a faster sale. This net welfare effect is shown in Panel (d), which shows changes in the seller's value function. The sellers value function impounds both the net sale price benefit and the time-to-sale benefit. It shows that a low-fee or no broker dominates moving to a higher-fee/higher-skill broker unless the higher-fee broker is exceptionally skilled: The 6% fee broker must form matches at roughly 6x the rate of a 3% fee broker, or roughly 11x the rate when there are no broker fees. In practical terms, for sellers to be better off paying a 6% broker fee, those agents would need to turn 10 showings into more than 100 showings.

Overall, these counterfactuals suggest that as agents' skill and effort improve with higher fees, the welfare benefit of eliminating agents decreases. However, significant consumer benefits from reduced fees persist unless agents are exceptionally efficient in facilitating home sales or provide other unmodeled advantages to homeowners.

### *V.D Supply Response*

It is also important to note that our model does not incorporate a housing supply response. In reality, markets with relatively elastic supply may experience additional effects: as homes become more valuable due to reduction in fees, new housing construction may increase, which can put downward pressure on prices over time and expand access to homeownership. In such settings, a reduction in fees—which makes housing a more valuable asset—could trigger increased housing production, reinforcing consumer welfare gains through both lower transaction costs and expanded supply.

This suggests that the response to reduced transaction costs—such as those resulting from the NAR settlement—will likely exhibit heterogeneity across regions, depending on local housing supply conditions. Markets with flexible supply may see broader and more equitable welfare gains, while tighter markets may experience increased home prices and more concentrated benefits among existing homeowners.

## VI. Conclusion

Motivated by the recent NAR settlement and emerging technological innovations in the housing market, we examine the effects of reducing real estate agents' commissions on home prices, housing turnover, and consumer welfare. Using a dynamic structural search model of the housing market, we assess the potential impact of lower real estate agent commissions on market equilibrium. Our analysis underscores the importance of considering the dynamic nature of the housing market, consumer heterogeneity, and general equilibrium effects in understanding these outcomes. Contrary to the claims of some media commentators and consumer advocates, our findings suggest that reducing agent fees generally leads to higher home prices, as lower future transaction costs increase the value of housing as a durable asset. While lower agent fees typically enhance consumer welfare by reducing the cost of homeownership, our results indicate that most of these benefits are likely to accrue to current homeowners rather than prospective buyers.

These findings have several implications. First, even if the NAR settlement or subsequent technological innovations in the housing market lead to a significant decrease in agent fees, our analysis suggests that it is unlikely to substantially improve affordability for prospective buyers. As we show the benefits of reduced real estate commissions may diminish further for financially constrained homebuyers, who may find it more difficult to qualify for credit due to increased home prices.

Second, our primary counterfactuals can be seen as an upper bound on the potential benefits to consumers, as they assume that reducing agents' fees does not negatively impact the fundamental parameters of house matching. However, well-compensated agents may improve the selling process by, among other things, increasing the rate of successful buyer-seller matches. Our findings suggest that as agents' skills and efforts decline with lower fees, the welfare benefit of eliminating agents diminishes, as expected. Nevertheless, our analysis indicates that substantial consumer benefits from reduced fees persist, unless agents are exceptionally efficient at facilitating home sales or provide other unmodeled advantages to homeowners. Future research could further investigate the relative productivity of real estate agents in relation to their compensation structure and the specific benefits they offer to consumers. A more comprehensive analysis could then incorporate the impact of these factors on house prices and consumer welfare.

Third, our analysis highlights the redistributive effects of technological innovations in the housing market aimed at reducing transaction costs. Previous research suggests that innovations such as online lending platforms (Buchak et al. 2018) and iBuyer technology (Buchak et al. 2022) primarily offer consumers convenience and faster transactions, rather than immediate cost savings. These studies also indicate that such fintech innovations often cater to more affluent and creditworthy borrowers. Our findings align with these insights. While reduced agent fees can lower the lifetime costs of homeownership by decreasing expected transaction costs—making homeownership more convenient and less expensive—these benefits primarily accrue to existing homeowners, who tend to be more affluent on average. They do not directly address affordability issues for prospective buyers through reduced home prices.

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## Table 1: Equilibrium Housing Trading Model with iBuyers: Calibration and Fit

This table provides details of the model calibration. Panel A shows targeted moments in the data and calibrated model. Panel B shows parameters calibrated externally or as normalizations, together with their values and sources. Panel C shows parameters calibrated through the method of moments, where parameters are chosen to match the model-predicted moments to the empirical moments in the data as shown in Panel A.

**Panel A:** Moments Targeted in Calibration and Fit

| Moment | Source | Data (2018) | Model |
|---|---|---|---|
| List price ($k) | HUD | 426.8 | 426.8 |
| HH time on market (days) | Zillow Data | 83 | 83 |
| Average buyer viewings | NAR Survey | 7 | 7 |
| Seller-to-buyer ratio | Redfin Data | 1.30 | 1.30 |

**Panel B:** Parameters Calibrated Externally / Normalizations

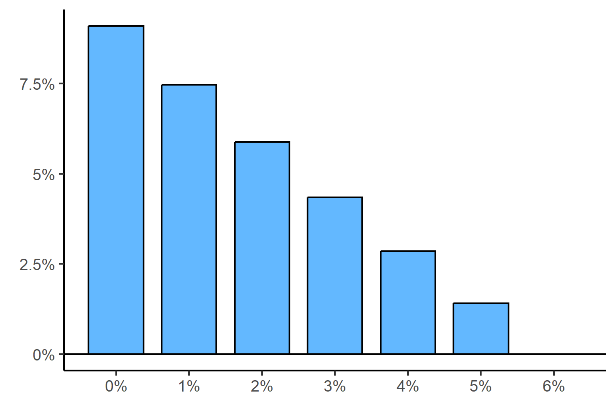
| Parameter | Description | Value | Source |
|---|---|---|---|
| $\rho$ | Discount rate | 0.050 | Guren (2018) |
| $\mu$ | Unmatching rate | 0.077 | Census |
| $u_s$ | Seller flow utility | 0 | Normalization |
| $\theta$ | Seller share in matching function | 0.16 | Anenberg & Bayer (2020) |
| $m_h$ | Mass of matched buyers | 1 | Normalization |
| $c$ | Buyer entry cost | 0 | Normalization |
| $\kappa$ | Financial constraint | 0.0536 | Capitalized MI premium |
| $\phi$ | Broker fee | 6% | Industry standard |

**Panel C:** Parameters Calibrated by Method of Moments

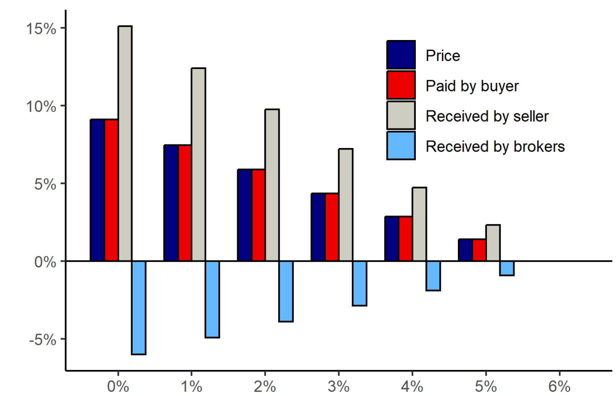
| Parameter | Description | Value |
|---|---|---|
| $u_h$ | Matched utility flow ($k/dt) | 22.72 |
| $u_b$ | Buyer utility flow ($k/dt) | -25.36 |
| $\sigma$ | T1EV shock scale parameter | 4.11 |
| $A$ | Matching technology (rate/dt) | 38.37 |

## Figure 1: The Effects of a Reduction in Agent Fees on House Prices and Consumer Welfare (Seller Pays All Fees Setting)

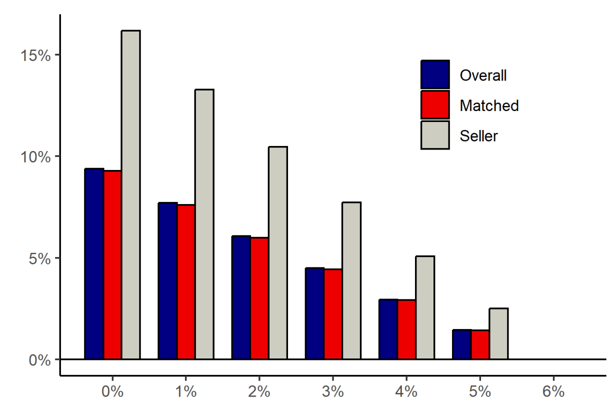
This figure illustrates changes in prices, payments, market dynamics, and value functions as the fee the seller pays is changed, relative to the 6% baseline. The 6% fee level serves as our baseline scenario, from which we examine fee reductions in 1% increments, ranging from 6% (the baseline) to 0%. In all scenarios, the seller continues to pay both the buyer's and seller's agent fees, which are reduced to the levels shown on the x-axis. Panel (a) shows the change in equilibrium house prices versus the 6% baseline. Panel (b) shows the change in payments made, with navy showing the price, red showing what is paid by the buyer, gray showing what is received by the seller, and light blue showing what the broker receives, in changes relative to the baseline in percent of the baseline house price. Panel (c) shows the changes in value functions relative to the baseline. Note that the free-entry condition makes the buyer's value function change equal to zero in all cases. Panel (d) shows market dynamics, with blue showing the change in the seller-to-buyer ratio, red showing the percent change in days to sale, and gray showing the percent change in average buyer home viewings.



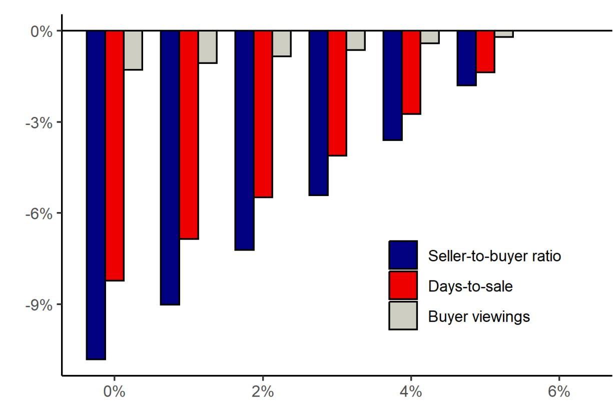

(a) House prices (% change)




(b) Payments (% change)



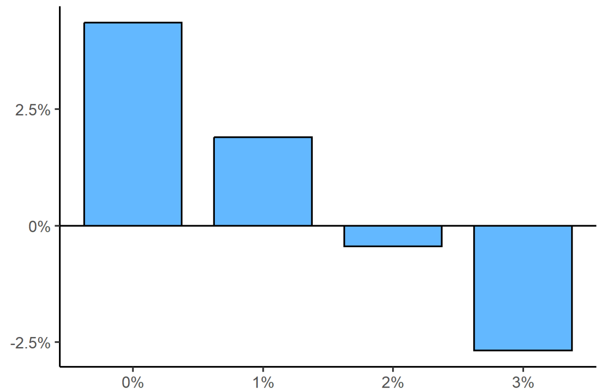

(c) Value functions (% change)



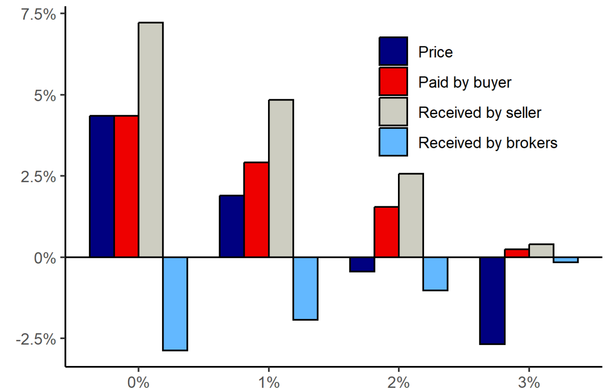

(d) Buyer-seller dynamics (% change)

## Figure 2: The Effects of a Reduction in Agent Fees on House Prices and Consumer Welfare ("Decoupled" Setting with Buyers and Sellers Paying their Own Agents Fees)

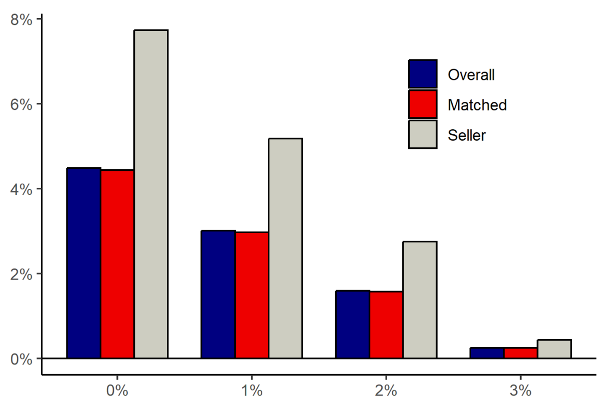
This figure illustrates changes in prices, payments, market dynamics, and value functions when buyer and seller fees are "decoupled." In these scenarios, the seller pays a 3% fee, and the buyer pays the fee indicated on the x-axis. In all cases, this is compared to the seller-pays-6% baseline. Panel (a) shows the change in equilibrium house prices versus the 6% baseline. Panel (b) shows the change in payments made, with navy showing the price, red showing what is paid by the buyer, gray showing what is received by the seller, and light blue showing what the broker receives, in changes relative to the baseline in percent of the baseline house price. Panel (c) shows the changes in value functions relative to the baseline. Note that the free-entry condition makes the buyer's value function change equal to zero in all cases. Panel (d) shows market dynamics, with blue showing the change in the seller-to-buyer ratio, red showing the percent change in days to sale, and gray showing the percent change in average buyer home viewings.



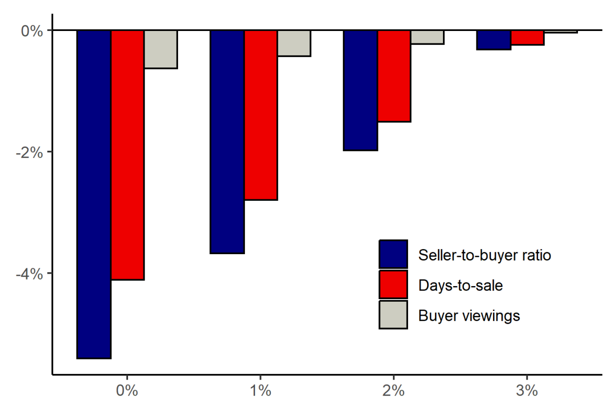

(a) House prices (% change)




(b) Payments (% change)



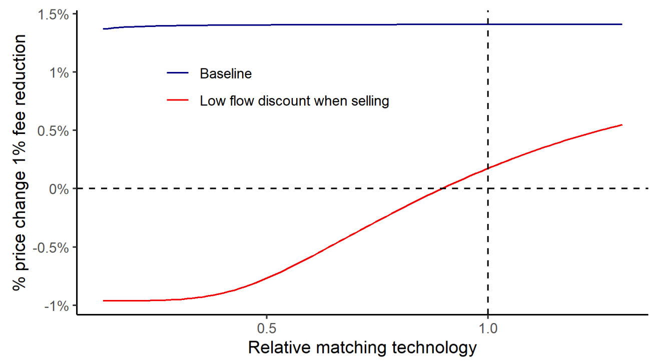

(c) Value functions (% change)



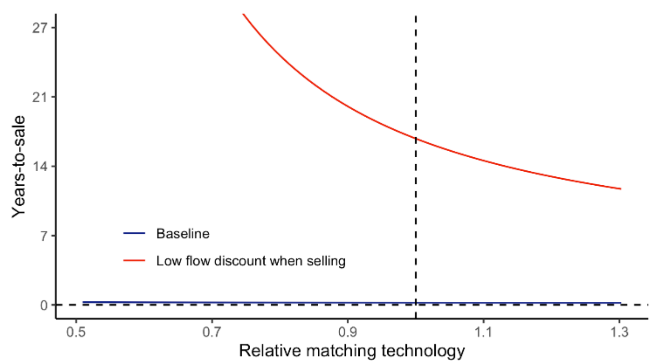

(d) Buyer-seller dynamics (% change)

## Figure 3: Dynamic versus Static Price Effects

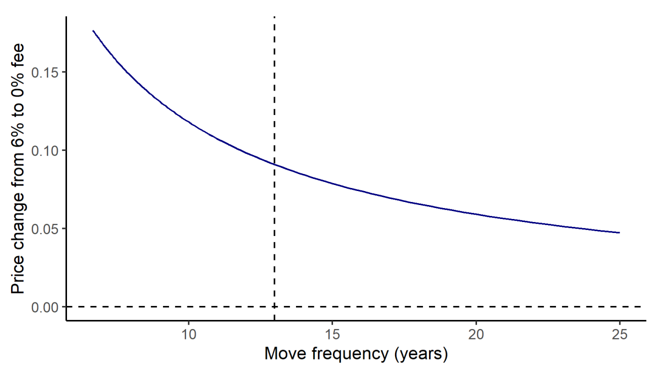
This figure explores model comparative statics around the static and dynamic price effects. Panel (a) shows the effect on house prices of reducing the 6% seller-pays-all fee to a 5% seller-pays-all fee. Panel (b) shows the *years*-on-market that corresponds to the comparative statics in Panel (a). In these panels, the blue line corresponds to the calibrated parameters, except that the matching technology parameter $\lambda$ is increased or decreased relative to the baseline value. Better matching technology makes the "dynamic" pricing effect more important. The blue line counterfactually increases the flow utility to a seller so as to increase the value function differential between buyers and sellers. This change directly effects the "static" component of the pricing decision, with a higher seller flow utility increasing the effective marginal cost of a sale, thereby making the direct static effect more important. Panel (c) varies the move frequency (corresponding to $1/\mu$), with the vertical dashed line indicating the value used in our calibration, and shows the price change from removing the agent fee.




(a) Flow utilities and matching technology: price effects



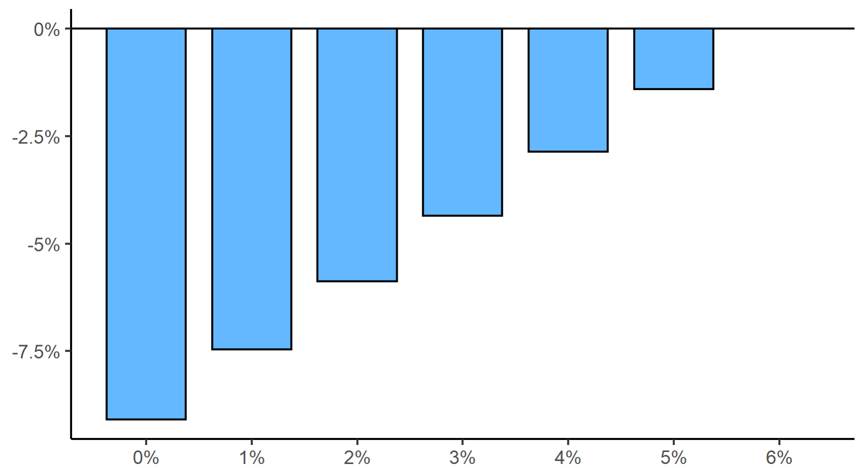

(b) Flow utilities and matching technology: time-to-sale



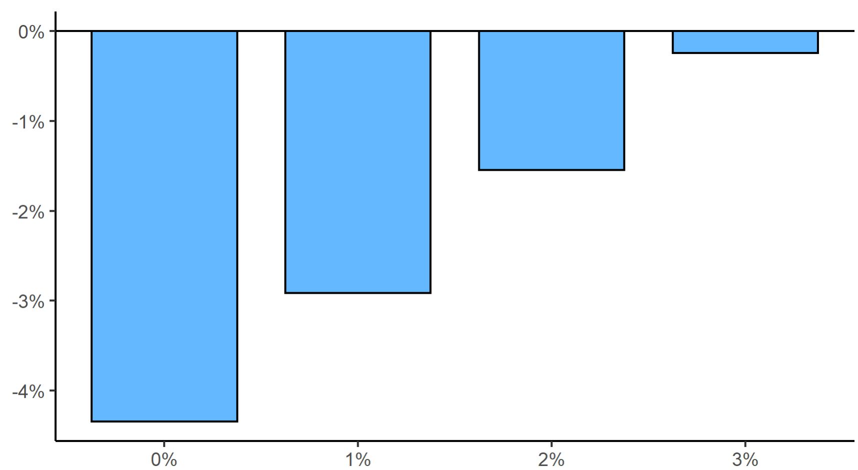

(c) Moving frequency

## Figure 4: Effects on Financially Constrained New Entrants

This figure illustrates the change in an outsider "financially constrained" buyer's value function as the market fee structure changes. Panel (a) shows the various "seller pays all" cases, and Panel (b) shows the decoupled cases, where the buyer fee varies and the seller fee is set at 3%. A "financially constrained" buyer is an outsider, of measure zero, who is presumed to lack the down-payment necessary to meet standard GSE underwriting rules, and therefore must purchase private mortgage insurance. We assume the annual PMI premium is capitalized at the time of purchase, thereby making the effective purchase price higher by a multiple $(1 + k)$, where $k$ is the capitalized payment in units of percent of home price. Once the outsider buyer enters, she follows the same path as a typical agent in the model (becoming a matched homeowner who will later become unmatched, become a seller, and so on).



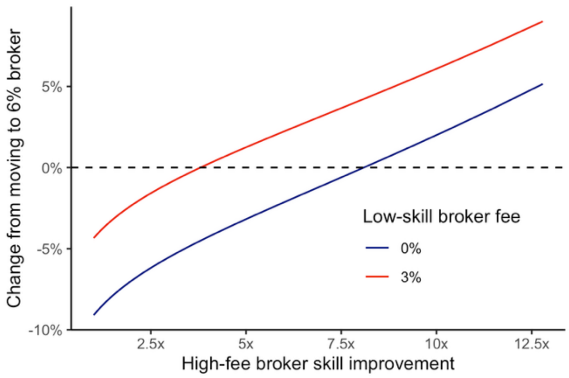

(a) Seller pays all fees



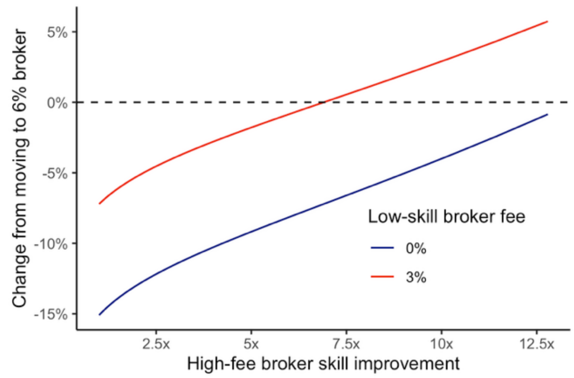

(b) Decoupled buyer/seller fees

## Figure 5: Compensating Agent Skill

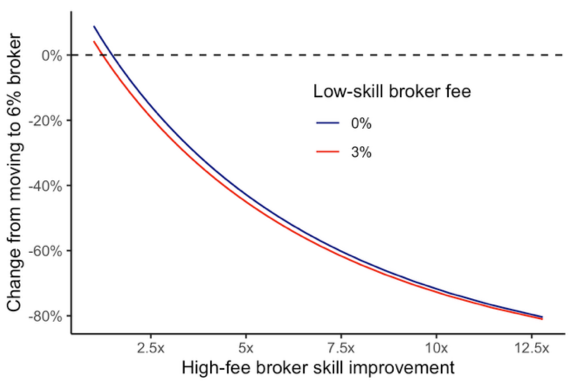
This figure illustrates a hypothetical tradeoff between agent fee and skill. Each panel shows how outcomes change for two scenarios, where the seller goes from having no-agent (0%, navy) or a "low-skill" agent (compensated at 3%, red) to a "high skill" agent, compensated at 6%. The x-axis shows the hypothetical skill differential between the no- or low-skill agent and the high-skill agent (e.g., 5x means the high-skill agent's $A$ is 5 times higher than the no- or low-skill agent's $A$. Panel (a) shows how house prices change. Panel (b) shows how payments going to the seller change. Panel (c) shows how the time-on-market changes, and panel (d) shows how the seller value function changes. For example, Panel (d) shows that the high-skill broker much be more than 10x more efficient in creating matches than the no-broker case for the seller to be better off paying him 6%.



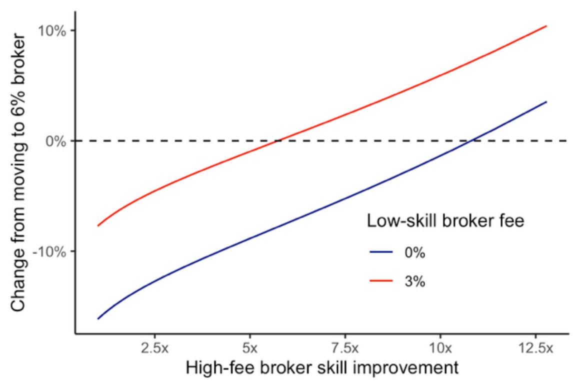

(a) Sale price




(b) Payments to seller



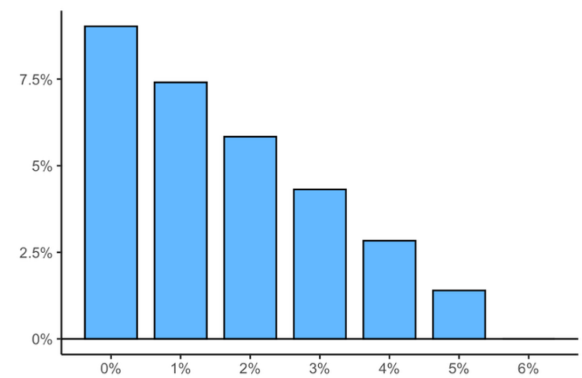

(c) Time-on-market



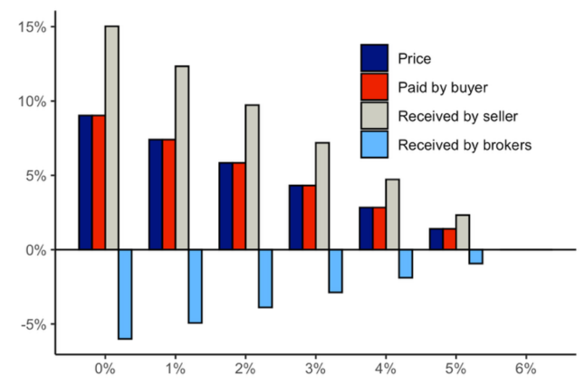

(d) Seller value function

## Figure A1: The Effects of a Reduction in Agent Fees on House Prices and Consumer Welfare with Alternate Buyer Entry Assumptions (Seller Pays All Fees Setting)

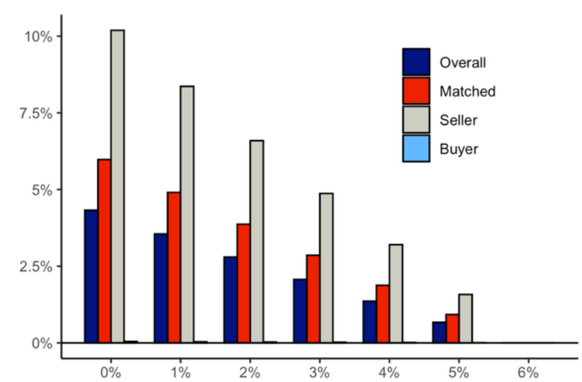
This Figure recreates Figure 1 with a alternate buyer entry assumptions. In particular, we assume that the buyer mass is fixed (at a value to be calibrated), recalibrate the model, and resimulate counterfactuals in the new equilibrium with the newly calibrated parameters. The figure illustrates changes in prices, payments, market dynamics, and value functions as the fee the seller pays is changed, relative to the 6% baseline. The 6% fee level serves as our baseline scenario, from which we examine fee reductions in 1% increments, ranging from 6% (the baseline) to 0%. In all scenarios, the seller continues to pay both the buyer's and seller's agent fees, which are reduced to the levels shown on the x-axis. Panel (a) shows the change in equilibrium house prices versus the 6% baseline. Panel (b) shows the change in payments made, with navy showing the price, red showing what is paid by the buyer, gray showing what is received by the seller, and light blue showing what the broker receives, in changes relative to the baseline in percent of the baseline house price. Panel (c) shows the changes in value functions relative to the baseline. Panel (d) shows market dynamics, with blue showing the change in the seller-to-buyer ratio, red showing the percent change in days to sale, and gray showing the percent change in average buyer home viewings.



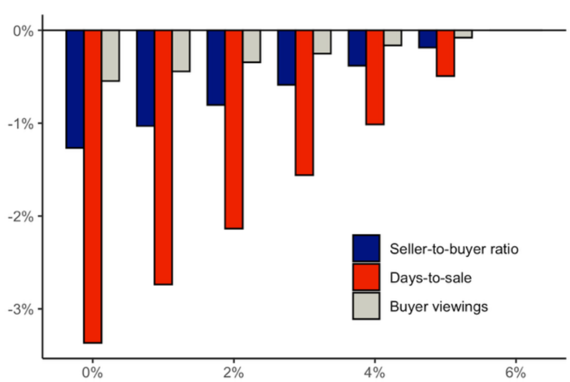

(a) House prices (% change)




(b) Payments (% change)




(c) Value functions (% change)




(d) Buyer-seller dynamics (% change)

**Figure A.2: Average Real Estate Agents' Commission in the US over Time**

This figure shows the average real estate commission rates (combined buyers and sellers agent fees) in the United States during 1992-2023. Sources: Real Trends, Medium, Premiere Property Group.

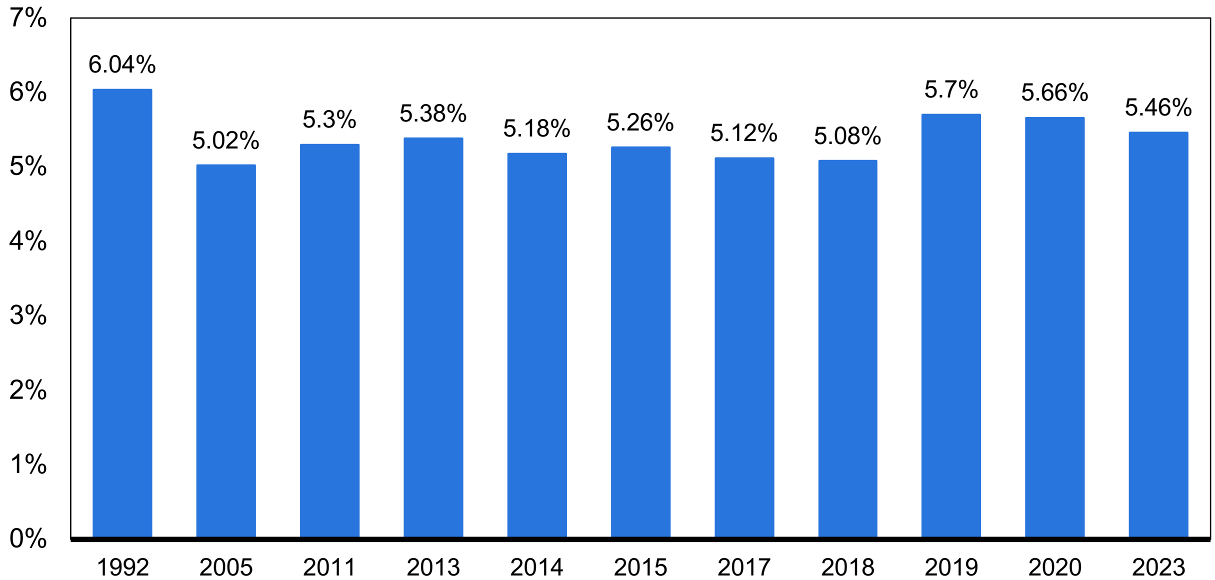


**Figure A.3: Average Real Estate Agents' Commission across Countries**

This figure shows the average real estate commission rates (combined buyers and sellers agent fees) across selected countries. The United States has the highest average commission at 5.4%, followed by Australia (3.6%), the United Kingdom (2.6%), and the Netherlands (2.0%). The non-US average stands at 2.7%. Source: National Association of Realtors and KBW Research.