Barriers to Consumer Negotiation and the Limits of Policy: Evidence from the NAR Settlement

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Abstract

The 2024 National Association of Realtors (NAR) settlement aimed to decouple buyer and seller agent fees by shifting bargaining to buyers. We show that the policy failed to reduce commissions because barriers to negotiation, not addressed by the settlement, suppress buyer bargaining. In survey experiments, reframing commissions in dollars or as buyer-paid sharply increased stated negotiation, confirming denominator-neglect and incidence biases. Using MLS and survey data, we find no meaningful change in average commission rates or fee decoupling post-settlement. Moreover, solo buyers–the extreme case of negotiation by forgoing representation–pay 1.8–2.2% less, effectively capturing the buyer's agent fee.

Keywords: Real Estate Commissions, Bargaining, Network Effects, Housing Search, FinTech.

JEL classification: L1, L4, L8, R3, G5

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1 Introduction

Most modern consumer protection regimes assume many consumers face barriers to negotiation, so they adopt guardrail policies (defaults, standardization, caps, and cooling-off rules) to reduce reliance on individual bargaining. A canonical guardrail is auto enrollment in 401(k)s under the Pension Protection Act of 2006, where defaults move outcomes without active choice (e.g. Madrian and Shea, 2001; Carroll, Choi, Laibson, Madrian, and Metrick, 2009). In contrast, *consumer bargaining policies* expect competitive pressure from cross-dealer shopping or retention discounts, as in auto retail, telecom, and insurance (e.g. Zettelmeyer, Morton, and Silva-Risso, 2006; Grubb, 2015; Financial Conduct Authority, 2021). Theory indicates that guardrail policies work best when barriers to negotiation and attention are material, while consumer bargaining policies work best when information is simple, switching is easy, and outside options are strong. We apply this policy-design trade-off framework to examine the 2024 NAR settlement, a policy with large economic stakes: U.S. residential brokerage fees average 5–6% of the transaction price, totaling about $180 billion annually across more than 1.5 million agents, or roughly 0.6% of the 2024 U.S. nominal GDP of $29.18 trillion.

Effective August 17, 2024, the NAR settlement is a canonical example of a consumer bargaining policy, since it places greater emphasis on buyers and their agents in commission negotiations. Before these changes, only a minority of states required a Representation Agreement (RA) for buyers, and many large MLSs did not require such agreements before touring MLS-listed homes. The RA must specify the agent's services and exact compensation, which cannot exceed the amount stated in the agreement. In addition, MLS listing input forms previously included a standard buyer-broker compensation field completed by the listing broker pursuant to the seller's listing agreement. Under the new rules, MLS listings cannot advertise that the seller will pay the buyer's agent. These changes create the possibility of decoupling buyer and seller agent fees by requiring that compensation be negotiated directly between buyers and their agents, rather than set implicitly through MLS offers. At the same time, the settlement diminishes steering by banning MLS offers of compensation as well as the practice of presenting buyer properties based on seller offers, both of which previously gave buyer agents incentives to direct clients toward higher-paying listings (Barwick, Pathak, and Wong, 2017).

The policy-design trade-off implies that the effectiveness of the NAR settlement depends on whether structural and behavioral deterrents to negotiation remain in place. If such deterrents

persist, the settlement will not alter outcomes in practice. If buyers are able to overcome these barriers, however, negotiation should lead to lower transaction costs. This logic yields three hypotheses: (H1) significant barriers to buyer–agent fee negotiation remain even after the settlement; (H2) as a corollary, the persistence of these barriers implies that the settlement has little or no effect on buyer–agent fee outcomes; and (H3) in the limited cases where buyers succeed in negotiating despite these barriers, they pay lower costs relative to buyers who do not negotiate.

We examine H1 with a survey experiment that tests whether two behavioral biases, not addressed by the settlement, affect buyers' negotiation behavior. The first is denominator neglect (e.g. Denes-Raj and Epstein, 1994), the tendency to judge ratios by the numerator alone while ignoring the denominator. This bias may deter negotiation in real estate in case buyers misperceive the magnitude of agents' fees, which are commonly expressed as a percentage of the purchase price. The second is salience and incidence (e.g. Chetty, Looney, and Kroft, 2009), the tendency to underreact to charges that are not fully salient. This bias may be important in real estate transactions because, even after the settlement, sellers can offer to pay the buyer's agent fee outside the MLS system, which may lead buyers to forgo negotiating these costs. Moreover, current mortgage financing rules do not allow the direct financing of buyer purchase expenses. Hence, they are financed as seller concessions, which reinforces the perception that sellers are paying these expenses even though the actual economic incidence is unclear. For instance, sellers may set the asking price to account for paying the buyer purchase expenses, in which case the economic burden falls on buyers when they pay the asking price.

We then examine H2 by analyzing the dynamics of quantity and pricing of real estate commissions following the NAR settlement. On quantity, we analyze changes in real estate intermediation after the settlement by testing whether buyers became more likely to forgo formal representation. We then examine whether commission rates changed conditional on hiring an agent, and whether buyers shifted toward discount brokers. We employ both an event-study specification and a difference-in-differences (DiD) regression. In the event-study, we examine changes in each outcome variable around the August 17, 2024, settlement date and use dynamic effects to verify pre-trends and the timing of any shifts. In the DiD specification, we interact a post-settlement dummy with an indicator for states without RA requirements pre-NAR (No-RA states). Following our pre-analysis plan, we control for CBSA-by-house-price-bin fixed effects, week fixed effects, city fixed effects, property type, and zip-code–level income.

We examine H3 by analyzing the outcomes of transactions involving buyers who do negotiate

as well as buyers who are not represented by agents. Solo buyers represent the extreme case of negotiation because, by choosing to proceed without an agent, they bypass standard commission arrangements and directly negotiate the terms of their transaction. The welfare effects of an increase in unrepresented buyers is ambiguous. One possibility regarding solo buyers is that they end up over-paying for properties, while another is that unrepresented buyers capture some of the commission savings from not having a buyer's agent. We conduct a preliminary analysis on how much unrepresented buyers pay at closing by running hedonic regressions of log sale price on an indicator for buyer representation, adding controls for square footage, age, lot size, bedroom/bath counts, neighborhood fixed effects, measures of house quality from the MLS listing text, and time dummies.

To perform our empirical analysis, we construct three novel datasets. The first dataset comes from the Rice University Homebuyer Survey Experiment, conducted between July 14 and July 22, 2025. This survey gathered responses from 1,600 real estate owners on hypothetical negotiation scenarios and their own home purchase experiences. The second consists of transaction-level MLS data scraped from Redfin's public listings. We collect closed sales across the top 30 Core-Based Statistical Areas (CBSAs) covered by Redfin from March 1, 2024, to March 31, 2025. For each sale, we record a range of transaction characteristics and agent identities, from which we compute prior transaction counts and agent experience. The scraped listings data also include the listing text. The third dataset comes from the Rice University Real Estate Commission Survey, conducted between August 1, 2024, and January 21, 2025, and covering 6,826 transactions completed between March 1, 2024, and November 30, 2024. This survey of buyer and seller agents includes questions on buyer and seller commission rates, whether the buyer negotiated with the buyer's agent, and the extent to which the buyer's agent paid rebates to the buyer. A key advantage of the survey over MLS data is that it captures information on buyer-agent rebates and negotiation behavior, which are typically unobservable in standard transaction records.

Our findings indicate that denominator and incidence biases are important deterrents to real estate buyers' negotiation, supporting H1. To examine the behavioral frictions underlying the lack of negotiation, we conducted a randomized controlled trial through the Rice University Homebuyer Survey Experiment, presenting homebuyers with alternative scenarios that deviate from real-world conditions. When fees were presented as a percentage of the sales price and assumed to be paid by the seller, only 8% of respondents said they would negotiate under the baseline scenario approximating the real-world environment. When we randomly framed the commission in dollar

amounts rather than percentages—percentages being the typical real-world presentation—17% of respondents said they would negotiate. The increase from 8% to 17% suggests that denominator-neglect bias plays an important role in reducing buyer negotiation. More strikingly, when we randomly framed the fees as explicitly paid by the buyer (and financeable in the mortgage) rather than as something paid by the seller, 27% of respondents said they would negotiate, highlighting the strong deterrent effect of incidence bias. Finally, in a scenario without either denominator-neglect or incidence bias, 37% of respondents indicated they would negotiate their agent's fee when buying a home, suggesting that these biases compound.

We find five results in support of the H2 that the settlement has little or no effect on buyer-agent fee outcomes when barriers to consumer negotiation are present. First, in the Rice University Real Estate Commission survey, only about 10% of buyer's agents reported that their buyers negotiated their agent's fee, both before and after the settlement. This result is remarkably consistent with the 8% negotiation rate we find in the baseline scenario of the Rice University Homebuyer Survey Experiment.

Second, examining commission rates, we find that average commission rates remain approximately unchanged at between 2.5 to 2.6 percentage points for both buyers and sellers, despite the NAR settlement. We obtain this finding in both our Rice University Real Estate Commission Survey and in administrative data from Compass's 10-Q filings. In our survey, we estimate an event-study coefficients on buyer and seller commissions that are economically small, of approximately 0.02 percentage points and 0.035 percentage points, respectively, and statistically insignificant off a 2.5 to 2.6 percentage point mean. We also calculate based on the national brokerage Compass' 10-Q filings that buyers and sellers pay an average commission rate of roughly 2.6 percentage points per side, with no significant change following the NAR settlement until the latest filing covering the quarter ending on March 31, 2025.

Third, we document a limited change in FinTech brokerage (i.e. RedFin) and discount brokerage (i.e. brokerages advertising flat fee, reduced fee, or rebates) market shares after NAR settlement in our MLS data, which is consistent with limited changes in aggregate commission rates. Specifically, our event-study reveals only a 0.15 percentage point uptick in seller use of FinTech brokerages, off a 1 percent baseline, and a 0.30 percentage point rise for buyers, off a 1.2 percent baseline. In terms of discount brokerages, we find that sellers' use of discount brokerages edges up just 0.09 percentage points from a 0.3 percent base while buyer use of discount brokerages is statistically insignificant and economically near-zero. Moreover, the DiD estimates (post-policy × No-RA) are

all close to zero. These results suggest that households did not increase their use of FinTech and discount brokerages post-NAR.

Forth, further consistent with the lack of negotiation, we find continued lack of de-coupling between the commission rate the seller initially offers and the commission rates received by buyers, suggesting that buyers agents are likely to "take what the seller offers" both before and after the NAR settlement. This lack of de-coupling can be seen in that 86% of sellers continued to offer a set commission rate after the settlement, rather than advertising that they consider all offers without a specific rate. Furthermore, the correlation between the commission rate the seller offers and the commission rate the buyer receives remains unchanged after the settlement.

Lastly, we find that the NAR settlement induces a modest increase in the number of transactions completed by buyers who forgo formal representation. Examining this outcome, in our event-study specification, we find a roughly 1.7 percentage point upward shift in the overall share of unrepresented buyers, timed exactly with the settlement. In our difference-in-differences regression, the post-policy × No-RA coefficient is about 1.9 percentage point and is statistically significant, indicating a larger shift to unrepresented buyers in states that did not require RAs before the NAR settlement. Therefore, we find that some buyers respond to RA requirements by foregoing representation and thereby paying less in buyers' commission fees.

In support to H3, our results also show that buyers who negotiate with their agents, as well as unrepresented buyers, pay less than represented buyers both pre-and-post NAR. Buyers who negotiate with their agents pay approximately 25bps lower commission rates. Furthermore, our hedonic models show that, conditional on home characteristics and neighborhood, solo buyers pay approximately 1.8–2.2 percent less than represented buyers both pre-and-post NAR, which adds to the evidence that unrepresented buyers capture some of the commission savings of not having a buyer's agent (e.g. Elder, Zumpano, and Baryla, 2000).

Our paper contributes to the behavioral economics literature in two ways. First, our findings add to the evidence that behavioral biases, such as the salience-and-incidence bias, affect economic outcomes. Chetty et al. (2009) show that consumers underreact to taxes that are not salient: in a grocery store field experiment and with alcohol tax data, they find that taxes included in posted prices reduce demand much more than sales taxes added at the register. Similarly, our findings indicate that these biases affect the propensity to negotiate even when the costs at stake are large, such as real estate agent fees. Second, (Chetty, 2015) argues that public policy should account for behavioral biases, since they shape how people respond to incentives. In the case of the NAR

settlement, nudges such as anchors and framing could have helped homebuyers recognize the dollar amount and incidence of commission fees (Thaler and Sunstein, 2008). Explicit requirements for sellers to "consider all offers" rather than advertise a maximum commission rate that they would cover would also reduce incidence bias and potentially lead to more buyer negotiation of commission rates.

We contribute to the literature by showing that the NAR settlement had only a modest effect on commissions.[1] While Barwick et al. (2017) show that properties offering lower commissions sell more slowly—evidence of steering—our findings suggest that steering alone does not explain persistently high and uniform commissions. Instead, a combination of mechanisms, including behavioral biases, likely sustains these outcomes, implying that policies addressing frictions beyond steering may be more effective (Barwick and Wong, 2019). Our results contrast with Kim (2025), who estimate that fully decoupling buyers' agent fees from sellers' asking prices would reduce commissions by 53 percent, to about 3 percent. Kim (2025)'s estimates are consistent with the U.K., where buyers rarely use separate agents and commissions are typically 1–2 percent (Delcoure and Miller, 2002). Kim's and our findings are reconcilable: Kim (2025) notes that unmodeled frictions may matter, and our evidence indicates that behavioral biases, such as incidence bias, hinder full decoupling. Together, the two sets of results suggest that the NAR settlement did not achieve full decoupling.

Another strand of literature studies the effect of real estate commission rates on house prices and consumer welfare. In particular, motivated by the NAR settlement, Buchak, Matvos, Piskorski, and Seru (2024) estimates a model of house prices and consumer welfare based on the assumption that the NAR settlement will reduce realtor commission rates, and finds that such a reduction would lead to higher house prices and adverse distributional outcomes. We do not rule out such an eventual reduction in commission rates, but our results suggest that incidence bias remains strong after the settlement. Other models of real estate intermediation motivated by the NAR settlement include Gabrovski, Kospentaris, and Ortego-Marti (2024) and Grochulski and Wang (2024). More broadly, Hsieh and Moretti (2003) and Han and Hong (2011) examines the cost of free entry in the real estate brokerage industry. Gilbukh and Goldsmith-Pinkham (2024) studies the entry of real estate agents over the housing cycle and how they affect intermediation quality, whereas Cunningham, Gerardi, and Shen (2024) studies the dispersion of realtor value added in the market.

[1] There is anecdotal evidence suggesting that buyers' agent commissions may have increased after the settlement. See this discussion and this comment on Reddit. Our results suggest that such anecdotes were not systematic.

The paper is organized as follows. Section 2 describes the 2024 NAR Settlement in detail. Section 3 presents our data. Section 4 outlines our empirical methodology. Section 5 reports the results examining H1. Section 6 discusses the empirical results for H2, and Section 7 presents those for H3. Section 8 concludes.

2 The 2024 NAR Settlement

The 2024 settlement between the NAR and a group of home sellers followed years of litigation initiated by two high-profile class-action lawsuits—*Moehrl v. NAR* and *Sitzer/Burnett v. NAR*—which challenged the structure of commission payments and alleged that the NAR's policies enabled anticompetitive behavior. At the core of the dispute was the claim that NAR's rules promoted "steering," a practice in which buyer agents purportedly guided clients away from listings offering lower commissions. The legal proceedings culminated in a jury verdict in October 2023, where NAR, HomeServices of America, and Keller Williams were found liable and ordered to pay $1.78 billion in damages—an amount that could be tripled under antitrust law. In the face of mounting legal pressure and the prospect of further trials, NAR chose to settle in March 2024. The proposed $418 million settlement covers claims from Moehrl, Sitzer/Burnett, and related cases. Other brokerages like Anywhere Real Estate, RE/MAX, and Keller Williams also settled for significant sums, collectively exceeding half a billion dollars.

Before the 2024 NAR settlement, real estate commission structures exhibited notable variation across states depending on the presence or absence of RAs. In states with RAs, buyers entered into formal agreements specifying their agent's services and capping compensation—typically at around 2.5–3% of the purchase price—while sellers arranged a total commission of roughly 5–6%, often offering approximately half to buyer agents via the MLS. In states without RAs, no contractual cap existed; buyer-agent compensation was determined entirely by the seller's MLS offer, maintaining the same typical split of 5–6%.[2] In both institutional contexts, if the buyer went unrepresented, outcomes hinged on the listing agreement: in many cases, the listing agent retained the full commission; in others, particularly where permitted, the seller could "save" the buyer-agent portion (around 2–3%) and negotiate a price reduction—effectively passing savings to the buyer. These structural differences shaped how much room buyers had to negotiate and how transparent the process felt from the outset Barwick et al. (2017); Barwick and Wong (2019); Monestier (2024).

[2] https://creschool.com/how-do-real-estate-commissions-work/

The first two columns of Table 1 summarize the pre-settlement differences between states with and without RAs.

[Insert Table 1 Here]

As part of the March 2024 settlement (NAR Settlement, 2024), the NAR agreed with practice changes aimed to address steering and incentivize buyers to negotiate their agent commissions directly with their agents. MLSs can no longer display buyer-agent compensation, and participation cannot be conditioned on such offers. NAR and MLSs are also barred from creating or supporting alternative platforms to facilitate commission offers, except in narrow cases where agents display only their own listings. Before touring homes, buyers must sign RAs that clearly state their agent compensation, which cannot exceed the agreed amount, and agents may not advertise their services as free unless they receive no payment. Listing brokers must obtain seller approval for any payments to buyer representatives, and both buyers and sellers must be told in writing that commissions are fully negotiable and not set by law. Agents are prohibited from filtering listings based on commission levels. The last column of Table 1 summarizes the post-settlement procedures.

Even under the revised NAR rules, buyers can offset or finance these costs with the sellers' cooperation. One common approach is through *seller concessions*, wherein the seller agrees to credit the buyer a specified amount at closing that can be used to cover the buyer-agent's commission. This may be structured by increasing the purchase price and providing a closing cost credit of the same amount, effectively allowing the buyer to finance the commission via their mortgage.[3] For instance, adding a $15,000 fee to a mortgage at a 6.5% interest rate would raise monthly payments by approximately $94, a manageable adjustment for many buyers. While steering is banned post-NAR, sellers typically have little to lose in helping buyers finance their pre-agreed upon commission fees by accepting a higher price and then returning the extra amount in seller concessions.[4]

[3] Crucially, Fannie Mae and Freddie Mac do not count customary seller-paid buyer-agent commissions toward Interested Party Contribution (IPC) limits, which allows these credits to be layered atop existing closing cost assistance without affecting the loan-to-value (LTV) of the loan. VA policy previously prohibited veteran buyers from financing real estate broker fees. However, in light of the NAR settlement, the VA changed its rules to allow buyers to finance their buyer-broker fees, beginning August 10, 2024, subject to certain safeguards.

[4] Seller concessions are a selling expense and are tax deductible, per Rocket Mortgage HERE.

3 Data

We use three main datasets for our analysis. The first dataset consists of transaction-level MLS data scraped from RedFin's public listings. We collect closed sales across the top 30 Core-Based Statistical Areas (CBSAs) from which RedFin collects MLS data, from March 1, 2024 to March 31, 2025. For each sale, we record sales characteristics including the sale price, transaction date, property type (single-family, condo, etc.), ZIP code, as well as details about the property (beds, baths, square footage, lot size, and the MLS description text). We also record agent identities in terms of the agent name, brokerage name, and state, from which we compute prior transaction counts and experience. On RedFin, transactions which did not involve an independent buyer's agent is recorded as having the same agent as the seller's agent, from which we create a dummy for independent representation. We plot weekly transaction volumes in this dataset in Figure 1, which shows strong seasonality in terms of summer and winter times. For all agent-brokerage pairs in our sample, we scrape data about their reported years of experience from their agent profiles on Homes.com and Zillow.

[Insert Figure 1 Here]

The second dataset we use is from the Rice University Real Estate Commission Survey, which was fielded between August 1, 2024 and January 21, 2025, covering 6,826 transactions completed between March 1, 2024 and November 31, 2024. This survey of buyer and seller agents asks questions including about buyer and seller real estate commissions, whether the buyer negotiated with the buyer's agent, the extent to which buyer's agent paid rebates to the buyer. For flat fee agents, we convert the reported commission dollar amounts to commission rates. Details of the survey are described in Appendix A. An important advantage of the survey over internal MLS data is that it collects information about buyer's agent rebates and negotiation. We use the correlation between negotiation and rebates to identify a potential channel through which commission rates remained sticky shortly following the NAR settlement.

Our third dataset is from the Rice University Homebuyer Behavior Survey, conducted between July 14 and July 22, 2025. The survey collected responses from 1,600 real estate owners regarding both hypothetical negotiation scenarios and their own past home purchase experiences. Each respondent was randomly assigned to one of four scenarios describing a home with a list price of $400,000: (i) the buyer's agent commission stated as 2.5% of the list price and paid by the

seller, (ii) the commission stated as $10,000 and paid by the seller, (iii) the commission stated as 2.5% and paid by the buyer, or (iv) the commission stated as $10,000 and paid by the buyer. This design allows us to examine how presentation in percentage versus dollar terms, and assignment of payment responsibility, shape negotiation behavior. In addition to negotiation intentions, the survey recorded respondents' reasons for not negotiating and whether they interviewed multiple agents.

Finally, we use a series of auxiliary data to conduct our empirical analyses. First, we classify FinTech brokerages as transactions handled by RedFin itself by using the brokerage name in our scraped MLS data. We also identify discount brokerages as any of 75 identified discount brokerages (excluding RedFin) operating in our 30 CBSAs listed in Houzeo or RealEstateWitch. State-level RA requirements pre-NAR are coded based on information from the South Carolina Association of Realtors.

4 Empirical Strategy

Our analysis relies on two complementary specifications, both of which are specified in our pre-analysis plan.[5] First, in an event-study specification, for a given outcome variable Y_{ist} we estimate for transaction i in city s completed on date t:

$$Y_{ist} = \alpha + \delta \, \text{Post}_t + X'_{ist}\gamma + \mu_s + \varepsilon_{ist}, \tag{1}$$

where Post_t is an indicator for the transaction being completed on or after the August 17, 2024 settlement, X_{ist} are a set of control variables which are the transaction price bucket, property type, CBSA-by-house price bin fixed effects, and zip-code income controls. The house price bins are in four categories: (i) less than or equal to $250,000, (ii) between $250,000 to $500,000, (iii) between $500,000 and $750,000, and (iv) over $750,000. Furthermore, μ_s capture city fixed effects, and ε_{ist} is an error term. The coefficient δ is our coefficient of interest, and captures the average post-event shift in the outcome variable Y_{ist} controlling for all of our covariates.

As an extension of the event-study specification, we also plot the dynamic effects version of

[5] Our pre-registration is available HERE.

Equation (1). Specifically, we plot δ_k coefficients, defined as:

$$Y_{ist} = \alpha + \sum_{k=-K}^{K} \delta_k \, \mathbf{1}\{\text{Month}_t = k\} + X'_{ist}\gamma + \mu_s + \varepsilon_{ist}, \tag{2}$$

where Equation (2) is the same as Equation (1) except the term involving the constant δ coefficient is replaced by a term involving dynamic coefficients δ_k that captures the effects by month.

Second, we use a difference-in-differences specification to examine the extent to which states with no prior Buyer's Representation Agreement (RA) requirements, which are more affected by the NAR settlement, differ in outcomes compared to states with prior RA requirements.[6] We note this difference-in-differences approach captures the incremental effect of the RA requirement imposed by the NAR settlement. To the extent that the NAR settlement may have had other effects that are common to RA and no-RA states, for example by making households more aware of the ability to negotiate commissions, those are captured by the event study specification instead. The difference-in-differences regression specification is as follows:

$$Y_{ist} = \alpha + \beta_1 \, \text{Post}_t + \beta_2 \, \text{NonRA}_s + \beta_3 \, (\text{Post}_t \times \text{NonRA}_s) + X'_{ist}\gamma + \mu_s + \lambda_t + \varepsilon_{ist}, \tag{3}$$

in which Post_t equals one for sales on or after August 17, 2024, NonRA_s flags states without a pre-existing RA requirement, and control variables and fixed effects X_{ist}, μ_s is as in Equation (1). For the difference-in-differences specification, we also add calendar week fixed effects λ_t. In terms of dynamic analyses, we run the specification in Equation (2) separately for RA and no-RA states and plot the dynamic coefficients δ_k. Finally, for all analyses, we cluster coefficients at the market by week level, where each market consist of a CBSA by house price bin, consistent with our pre-analysis plan.

5 H1: Do Barriers to Buyer–Agent Fee Negotiation Persist?

We design a survey experiment to test two behavioral mechanisms that may suppress buyer-agent fee bargaining. First, *denominator bias* posits that buyers will be more likely to negotiate when the commission is presented as a large, concrete dollar amount rather than as a small percentage. Psychological research documents that people often focus on the numerator and

[6] Available HERE.

neglect the denominator in probability tasks (e.g., Reyna and Brainerd (2008); Denes-Raj and Epstein (1994)), thereby underweighting proportional differences in favor of more salient absolute figures. Second, incidence bias predicts that buyers will negotiate more when they are perceived to personally pay the commission than when it is framed as being paid by the seller (Chetty et al., 2009).

5.1 Experimental Design

Respondents recruited via Prolific were randomly assigned to one of four scenarios describing a $400,000 home purchase. The scenarios varied along two dimensions: whether the commission was framed as a *percentage* or a *dollar amount*, and whether the commission was described as being paid by the *seller* or by the *buyer*. This produced a 2×2 randomized experiment design, which we label Scenarios 1–4:

- **Scenario 1: Percentage, Seller Pays.** The buyer's agent requests a *2.5% commission*, and the *seller* agrees to pay it.
- **Scenario 2: Dollar, Seller Pays.** The buyer's agent requests a *$10,000 commission*, and the *seller* agrees to pay it.
- **Scenario 3: Percentage, Buyer Pays.** The buyer's agent requests a *2.5% commission*, which the *buyer* must pay either at closing or by rolling it into the mortgage.
- **Scenario 4: Dollar, Buyer Pays.** The buyer's agent requests a *$10,000 commission*, which the *buyer* must pay either at closing or by rolling it into the mortgage.

The scenario involved an asking price of $400,000. Following the presentation of the scenario, respondents faced two comprehension checks: (a) selecting the commission amount (matching their scenario), and (b) identifying who is nominally paying the commission. In accordance with platform policy, respondents failing either check were given another chance at that question, and those who failed again were removed from the sample. The primary outcome is an indicator for whether the respondent would ask their buyer's agent to reduce the commission. Those who responded "No" were asked to select reasons (multiple allowed).

We determined our target sample size ex ante through a pre-analysis plan. Power calculations, based on detecting a 10 percentage point increase in negotiation rates with 80% power at the 5%

significance level, indicated a minimum of roughly 400 respondents per treatment arm. Therefore, we set a target of 1,600 completed responses in total. We offered an incentive of $44.44 per hour, well above the Prolific's recommended minimum of $12 per hour.

5.2 Results

The results of our pre-registered experiment is shown in Table 2, which we describe as follows.

[Insert Table 2 Here]

Comparison 1 (Scenario 2 vs. Scenario 1). When the commission is framed as a percentage and paid by the seller (Scenario 1), 8.0–8.2% of respondents reported they would negotiate, closely matching the $\approx$ 9% rate found in our realtor survey. When instead the commission is framed as a dollar amount and paid by the seller (Scenario 2), the negotiation rate rises to 17.2%. The difference is 9.3 percentage points ($p < 0.001$).

Comparison 2 (Scenario 3 vs. Scenario 1). When the commission is framed as a percentage but paid by the buyer (Scenario 3), 27.5% of respondents indicated they would negotiate, compared to 8.0–8.2% in Scenario 1. The difference is 19.6 percentage points ($p < 0.001$).

Comparison 3 (Scenario 4 vs. Scenario 1). When the commission is framed as a dollar amount and paid by the buyer (Scenario 4), 37.0% of respondents reported they would negotiate, compared to 8.0–8.2% in Scenario 1. The difference is 29.1 percentage points ($p < 0.001$).

In sum, these results indicate that both incidence bias and denominator bias are operating in our setting, with incidence bias having a greater effect in terms of magnitude compared to denominator bias, and the combination of removing both incidence and denominator bias having the largest magnitude effect in terms of increasing negotiation.

Figure 2 reports the distribution of reasons selected by respondents who answered "No" to the negotiation question across all scenarios. Because multiple selections were permitted, percentages sum to more than 100%. The most frequently cited reason was that "the seller pays the commission anyway", chosen by approximately 52% of non-negotiators. The next most common justification

was that "the commission amount is customary" (44%). A smaller but nontrivial share of respondents (29}) reported that "they did not want to offend their agent" or "receive worse service," followed by "it is too much hassle" (18%). Finally, 7% selected "Other."

[Insert Figure 2 Here]

6 H2: Does the NAR Settlement Change Fee Outcomes?

6.1 Rise of Unrepresented Buyers

One potential effect of the NAR settlement is to incentivize buyers to opt out of representation and thereby reducing the commissions they pay. The reason for this is, pre-NAR in No-RA states, buyer agent commissions are typically paid by the seller agent's brokerage. In this circumstance, if the buyer chooses to not retain an agent the seller agent's brokerage can in many cases keep the commission allocated for buyer's agents. Therefore, there are limited advantages to buyers opting out of using a buyer's agent pre-NAR settlement in No-RA states. In RA states pre-NAR, and in all states post-NAR, the buyer's agent commissions are paid either by the seller or the buyer directly, and not using a buyer's agent can make the buyer's offer more competitive to the seller.[7]

We examine the dynamic effect of the NAR settlement on unrepresented buyers both overall and separately in RA and No-RA states in Figure 3, using the specification described in Equation (2). Panel (a) of Figure 3 shows a sharp rise in unrepresented buyers immediately following the policy of about 2 percentage points. Panel (b) of Figure 3 shows that this rise is apparent in No-RA states where the incentive to not use a buyer's agent increased. In addition, panel (c) of Figure 3 shows that in RA states the share of unrepresented buyers remains roughly constant.

[Insert Figure 3 Here]

We quantify the effect of the NAR settlement on unrepresented buyers in Table 3, with Panel A of Table 3 showing the result of the event study specification in Equation 1 and Panel B of Table 3 showing the result of the difference-in-difference study specification in Equation 3. Panel A of Table 3 shows that, post-policy, there is a 1.74 percentage point increase in the proportion of

[7] Indeed, commenters note that the NAR settlement can make buyer's agents obsolete, as well as encourage alternative business models for buyer's agents with lower effective commission rates, although it is unclear why some of the alternative business models could not be achieved with buyer's agents giving rebates to buyers even pre-NAR.

buyers opting out of independent representation, off of a sample average of 7.37 percentage points. Panel B of Table 3 shows that, comparing No-RA and RA states in a difference-in-differences specification, there is a 1.93 percentage point greater increase in the proportion of buyers opting out of independent representation in No-RA states compared to RA states.

[Insert Table 3 Here]

In summary, we detect a sharp and persistent increase in the share of buyers opting out of independent representation post-NAR, with the effect being concentrated to No-RA states. This suggests that the increase in the financial incentive of opting out of independent representation indeed affected buyers' choices, although the effect size of 2 percentage points implies that over 90% of buyers still do get independent representation post-policy.

6.2 Stickiness of Commission Rates

Next, we analyze real estate commission rates paid by buyers and sellers who chose to be represented by a realtor. The primary goal of the NAR settlement was to reduce buyer's agent real estate commission rates, and its mechanisms for doing so include reducing making the option to negotiate clear to buyers in RA, reducing seller agent steering incentives, and potentially making homeowners more price conscious leading to a greater willingness to negotiate. On the other hand, if household negotiation patterns are relatively stable pre-and-post-NAR and those who negotiate already get their target commission rate pre-policy, then the NAR settlement may not be able to break real estate commission norms.

We conduct two sets of analyses on real estate commission rates. First, in panel (a) of Figure 4 we present the dynamic effects for buyer's agent commission rates in the Rice University Real Estate Commission Survey following Equation 3. We find limited changes in commission rates following the policy in our Rice University Real Estate Commission Survey. Second, to confirm our survey's findings in administrative data, we also compute the average commission rate per side from Compass, a national publicly-traded brokerage that is the largest U.S. brokerage by transaction volume,[8] using revenue and transaction volume data from their 10-Q filings. Compass notes that "[t]he Company currently generates substantially all of its revenue from commissions paid by clients at the time that a home is transacted." We compute their implied commission rate

[8] See Compass' press release HERE.

by dividing their revenue by their reported transaction volume. As panel (b) of Figure 4 shows, the average implied commission rate from Compass agents is around 2.6 percentage points, similar to what is in our Rice University Commission Survey, and also did not change significantly following the NAR settlement.

[Insert Figure 4 Here]

Next, we examine the numerical coefficients on real estate commission rates from both buyer and seller's agents in our Real Estate Commission Survey in both event study and difference-in-differences specifications following our pre-analysis plan. The results are shown in Table 4. Columns (1) and (2) of Panel A of Table 4 shows the results for buyers' agent commissions in the event study specification. The coefficients are economically small and statistically insignificant at 0.02 percentage points, off of a base of 2.5 percentage points. Columns (3) and (4) of Panel A of Table 4 shows the results for sellers' agent commissions in event study specifications, and the results are also economically small and statistically insignificant at 0.035, off of a base of 2.5 percentage points. Panel B of Table 4 shows results for difference-in-differences specifications comparing no-RA states with RA states, which also have small and statistically insignificant coefficients.

[Insert Table 4 Here]

6.3 Continued Limited Use of FinTech and Discount Brokerages

Another way that buyers and sellers were able to obtain lower commission rates is to use FinTech or discount brokerages. For buyers, these brokerages are able to provide a low effective commission rate pre-NAR by offering rebates of their buyer's agent commission. For sellers, these brokerages offer to list their homes on the MLS for a reduced or flat-fee. Since these brokerages charge a lower fee, to the extent the extent the NAR settlement makes sellers and buyers more price-conscious households may increasingly seek out FinTech and discount brokerages post-NAR.

Table 5 shows the results for FinTech and discount brokerages for both the event study specification in Equation 1 and the difference-in-difference study specification in Equation 3. In panel A, column (1) suggests that there is a 0.15 percentage point increase in the share of sellers using a FinTech brokerage post-NAR, relative to a sample average of 1 percent, whereas column (2) suggests that there is a 0.30 percentage point increase in the share of buyers using a FinTech brokerage, relative to a sample average of 1.2 percent. While these increases are statistically significant, they

are quite small in magnitude, suggesting that any shift to FinTech brokerages post-NAR is small in absolute terms. Similarly, Panel A, column (3) suggests that there is a 0.09 percentage point increase in the share of sellers using a discount brokerage, relative to a sample average a base of 0.3 percentage points, whereas panel A, column (4) suggests that there is no statistically significant change in the percent of buyers using a discount broker, with the coefficient being close to zero.

[Insert Table 5 Here]

Panel B of Table 5 shows the results for a differences-in-differences specification comparing No-RA to RA states post-policy following Equation 3. The coefficients are very close to zero throughout. These results suggest that while some households may have indeed become more price conscious post-NAR and marginally increased their usage of FinTech as well as discount brokerages, the proportion of households that did so is small in absolute terms, at less than 0.30 percentage points in the largest coefficient estimate.

6.4 Lack of Negotiation by Buyers

A central mechanism through which the NAR settlement was expected to lower commission rates is by shifting the burden of negotiation from sellers to buyers. If buyers actively negotiated, one would anticipate downward pressure on commission rates, as agents compete for business in a more transparent contracting environment. However, our survey evidence and experimental results suggest that buyers are unlikely to negotiate, before or after the NAR settlement.

Figure 5, Panel (a) plots the predicted values from a linear regression that a buyer negotiated their agent's fee, before and after the August 17, 2024 policy change, following the specification in Equation 1. The estimated probability of negotiation remains low, at 9% to 10%, throughout the sample period. These results confirm that buyers rarely attempt to bargain over their agent's commission.

[Insert Figure 5 Here]

Panel (b) of Figure 4 further illustrates the consequences of this limited negotiation for buyer costs. We plot predicted buyer commission rates (net of rebates) separately for negotiating and non-negotiating buyers. The results show that non-negotiators consistently paid about 2.5–2.6 percentage points, while negotiators were able to achieve modest savings, typically lowering their

effective rate by 0.2–0.3 percentage points. While these reductions are economically meaningful for individual households, they are insufficient to materially shift average commission rates at the aggregate level, since only a small minority of buyers negotiate.

We explore the behavioral frictions underlying the borrowers' lack of negotiation in more detail by using a survey experiment in Section 5.

6.5 Lack of Decoupling Between Buyer and Seller Commissions

A central expectation of the 2024 NAR settlement was that by removing the buyer-broker compensation field from MLS listings and by decoupling buyer agent commission from what the seller offers, buyer commissions would sharply decline. However, our evidence indicates that buyers continue to pay what the sellers offer in terms of agent commissions on individual properties, consistent with a lack of buyer negotiation explored in the previous subsection 6.4. Based on the theory of (Kim, 2025), this lack of decoupling generates a continued scope for elevated commissions in the market.

[Insert Figure 6 Here]

To examine potential decoupling between buyer and seller commission rates following the NAR settlement, we begin with an analysis of the correlation between seller-offered and buyer-paid commissions before and after the settlement. Panel (a) of Figure 6 shows that, in the pre-NAR period, 94.4% of sellers offered an explicit percentage-based offer of compensation to the buyer's agent. Panel (b) of Figure 6 shows a nearly one to one relationship between what the sellers offer and what the buyers' agent received, with some evidence that sellers who offer low amounts below 2 percent of the transaction price end up paying more than what they initially offered.

After the policy change, panel (c) of Figure 6 shows that the fraction of sellers who offer buyers' agent commission is lower but still significant, at 86.8% of all sellers. Panel (d) of Figure 6 shows that the nearly one to one relationship between what the sellers offer and what the buyers' agent received remains tight after the policy, which is puzzling if buyers' agent commissions are independently negotiated with respect to sellers' commission offers.

There are two potential explanations for the raw correlation between sellers' offered commissions and buyers' paid commissions in Panels (b) and (d) of Figure 6. One possibility that these are explained by market effects, where the market is defined in terms of geographic area intersected with house prices. More specifically, it is possible that each market has a prevailing buyers' agent

commission rate, and sellers are simply offering that rate. Another possibility is that buyers' agents are tailoring their commission agreements based on what sellers of individual properties are offering, which is evidence of a lack of full decoupling between the sellers' offered commission rates and buyers' paid commission rates.

We examine these possibilities in Table 6, which includes market fixed effects. We run a regression of the buyers' paid commission on the sellers' offered commision, with the same control variables and fixed effects as in Equation (1). Column (1) of Table 6 shows that pre-policy, the estimated coefficient on seller-offered commission is 0.781, significant at the 0.1% level. Post-policy, the coefficient remains nearly identical at 0.797, again highly significant at the 0.1% level. The similarity of these estimates indicates that the strength of the correlation between sellers' offered commission rates and buyers' paid commission rates did not materially weaken after the settlement, which is evidence of a lack of full decoupling between sellers' offered commission rates and buyers' paid commission rates.

[Insert Table 6 Here]

7 H3: Do Negotiating Buyers Pay Less?

A potential concern of buyers opting out of independent representation is that unrepresented buyers become more prone to manipulation by the seller's agent and may end up overpaying for the property. On the other hand, if only the more experienced buyers are opting out of representation, then this effect may be muted relative to the cost savings of realtor fees, which may allow the buyer to pay a lower price for the house while still being the winning bid. We present some hedonic regression evidence in favor of the latter effect in Appendix Table 7, although we caution that this analysis is not pre-registered and hedonic regressions cannot fully capture all the unobserved characteristics of the houses being sold.

Table 7 presents hedonic regressions of the log of the transaction price on a dummy variable indicating the buyer has foregone representation plus a large set of control variables including the square footage of the home, lot size, CBSA by week fix effects, year of house construction fixed effects, lot size bucket fixed effects in bins of width 1000 square feet, square feet bucket fixed effects in bins of width 500 square feet, number beds fixed effects, number of baths fixed effects, and zipcode fixed effects. We further limit this analysis to single-family homes to obtain a more

uniform sample. In addition to these hedonic variables, we also use the MLS text to control for if a listing is in a "good condition" or a "bad condition", where "good_condition" as a dummy variable indicating if the listing text included keywords of "renovated," "remodeled," or "state-of-the-art", and "bad_condition" as a dummy variable indicating if the listing text included keywords of "fixer-upper," "potential," "investor," or "bones." To our knowledge this is one of the first uses of the MLS listing text to enrich hedonic regressions and capture more unobservable home quality.

[Insert Table 7 Here]

Our main coefficient of interest is the dummy variable indicating whether the buyer has foregone independent representation, labelled as "foregone_representation." Column (1) of Table 7 shows that this coefficient is -0.0181 pre-policy and column (2) of Table 7 shows that this coefficient is -0.0193 post-policy. These results suggest that buyers who forego representation pay 1.81 percent lower house prices pre-policy and 1.93 percent lower transaction prices post-policy conditional on our covariates. Given that buyer's commission rates average around 2.5 percent of the transaction price, this results suggest that buyers capture most, though not all, of the cost savings from not using a buyer's agent.

Columns (3) and (4) of Table 7 repeats the foregone independent representation analysis for No-RA states, which as seen in Figure 3 are the main states in which the NAR settlement had an effect on independent representation. We obtain consistent results. Column (3) of Table 7 suggests that, in No-RA states, buyers who foregoed independent representation paid a 2.7 percent lower transaction price pre-policy, whereas column (4) of Appendix Table 7 suggests that, in No-RA states, buyers who foregoed independent representation paid a 2.2 percent lower transaction price post-policy. In general, Appendix Table 7 provides suggestive evidence that buyers who forego independent representation receive a discount on their transaction price.

8 Conclusion

The 2024 NAR settlement was expected to have far-reaching effects on the US residential real estate market. We present the first empirical analysis on this settlement by primarily following a pre-registered analysis plan. We find a notable shift in the market: increased market shares of higher volume and experienced agents as well as a rise of unrepresented buyers. We also find continuity in the level of commission rates and on the households' use of discount brokerages.

The modest effect of the NAR settlement on commission rates that we document does not imply that the settlement was inconsequential. By addressing one of the most salient drivers of high commissions — steering (Barwick et al., 2017) — the settlement may have opened the door to addressing other mechanisms that contribute to the persistence and uniformity of agent commissions. Many such mechanisms are discussed in Barwick and Wong (2019), including collusion, broker market power, and behavioral frictions. The persistence and uniformity of real estate commissions in the U.S. may resemble a multi-layered knot: complex, entangled, and resistant to simple solutions. The 2024 NAR settlement may have loosened one layer of this knot by addressing steering. Yet many layers remain intact, including behavioral frictions such as buyer confusion over who pays for agent services. By partially untangling the regulatory structure, the settlement creates an opportunity for these remaining layers to be examined and potentially unraveled in future policy interventions.

Figure 1. Transaction Volume Surrounding NAR
This figure plots the weekly transaction volume in the 30 CBSAs we sample surrounding the NAR settlement.

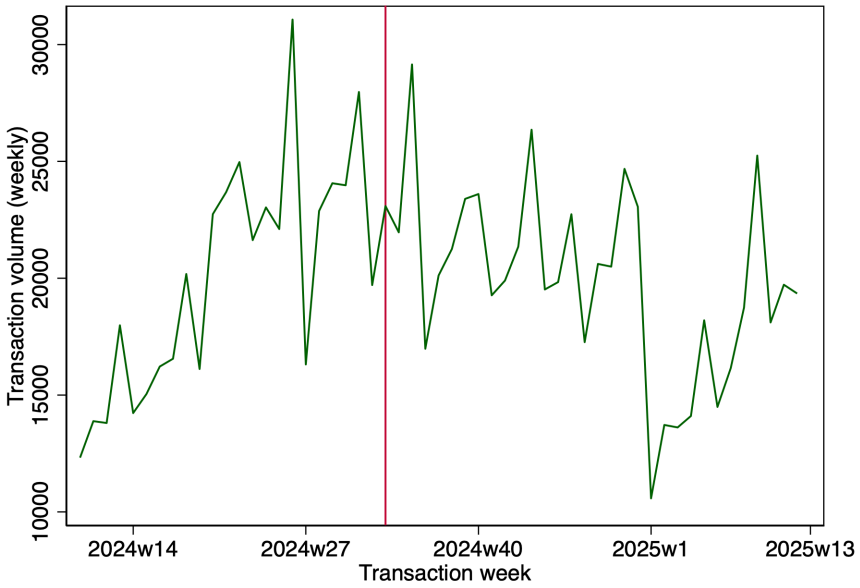


Figure 2. Survey respondents' reasons for not negotiating

This figure plots the survey respondents' reasons for not negotiating, as a percent of non-negotiators selecting that option. Per our pre-registration, non-negotiators were presented a multiple choices question allowing them to choose multiple options.

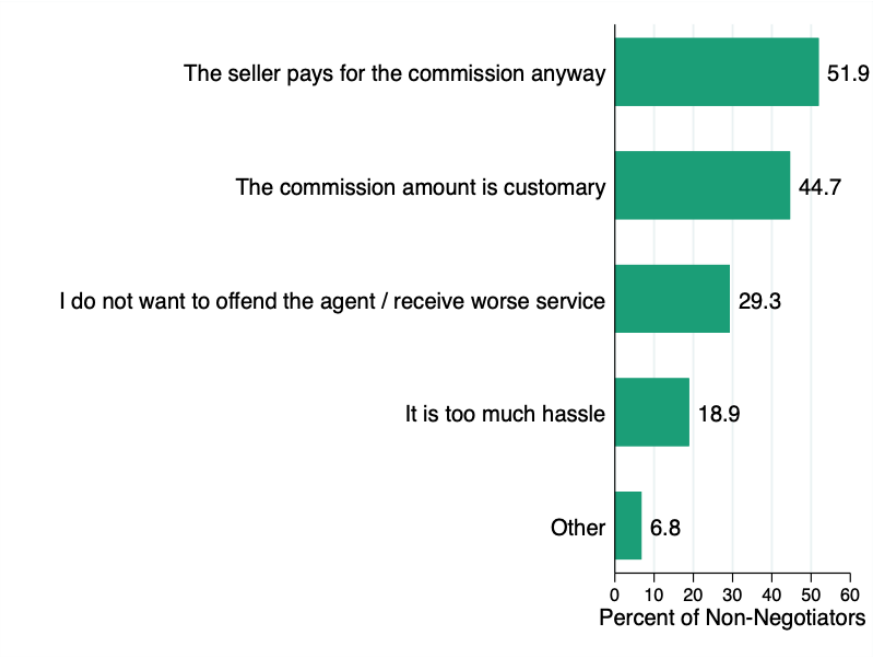
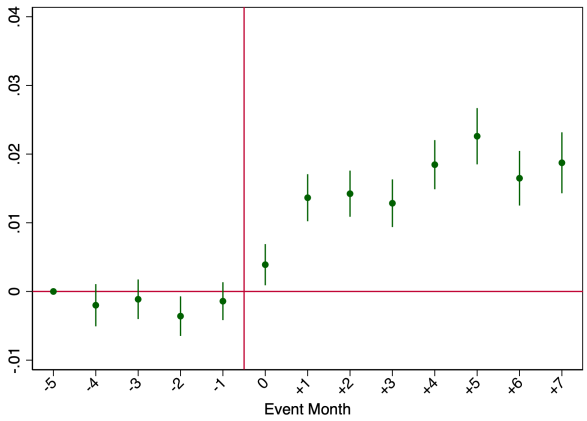
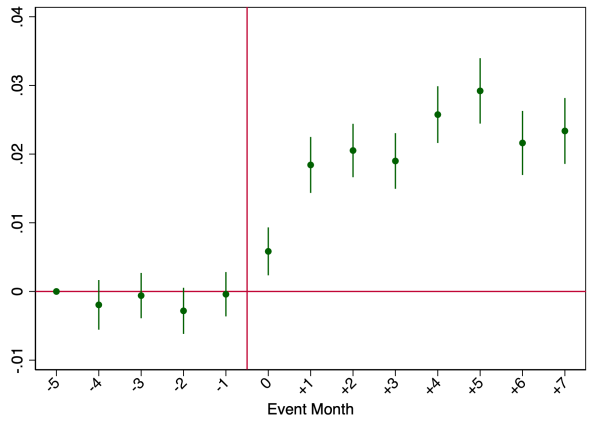


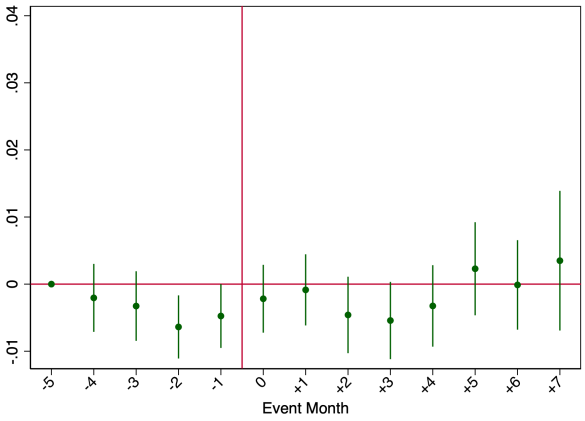
Figure 3. Foregone Independent Representation Dynamic Effects
This figure plots the dynamic effects on whether the buyer was without independent representation. The event month is August 2024. The specification is as in Column (1) of panel A Table 3.



(a) All states



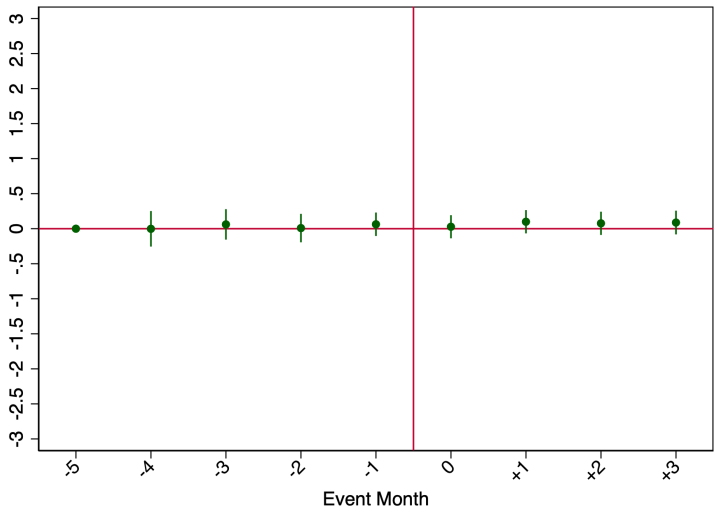
(b) No-RA states



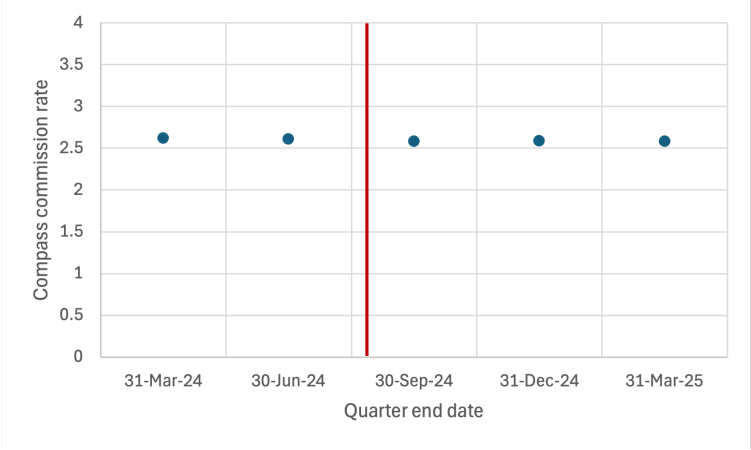
(c) RA states

Figure 4. Commission Rates Surrounding the NAR settlement

This figure plots the commission rates surrounding the NAR settlement. Panel (a) reports the dynamic effects on the buyer's agent commission rates based on Equation (2). Panel (b) reports the implied commission rate reported in Compass brokerage's quarterly reports, computed as their quarterly revenue divided by total transaction value. The event date is August 17, 2024 and is indicated in red.



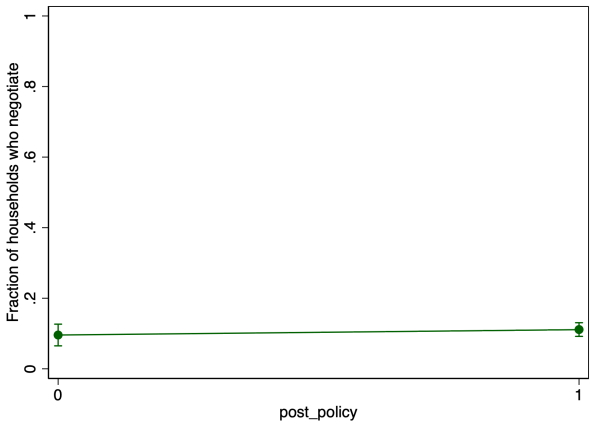
(a) Buyer's Agent Commission Rate Dynamic Effects



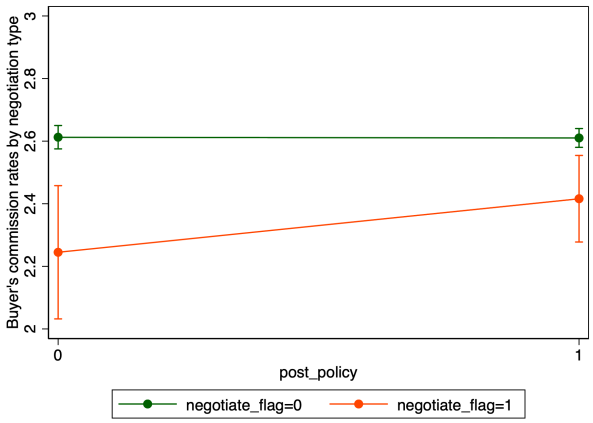
(b) Compass Brokerage's Commission Rate

Figure 5. Commission Rate and Buyer Negotiation

This figure plots the predicted values of regressions with the full set of covariates as in Column 2 of Table 4. Panel (a) reports the predicted values for a dependent variable of whether the buyer has chosen to negotiate on buyers' agent commissions, with an independent variable of "post_policy" indicating whether the transaction was completed after August 17, 2024. Panel (b) reports the predicted values for a dependent variable of buyer's net commission amount (after rebates), with dependent variables of "post_policy" interacted with "negotiation_flag" indicating whether the buyer chose to negotiate on their commissions.



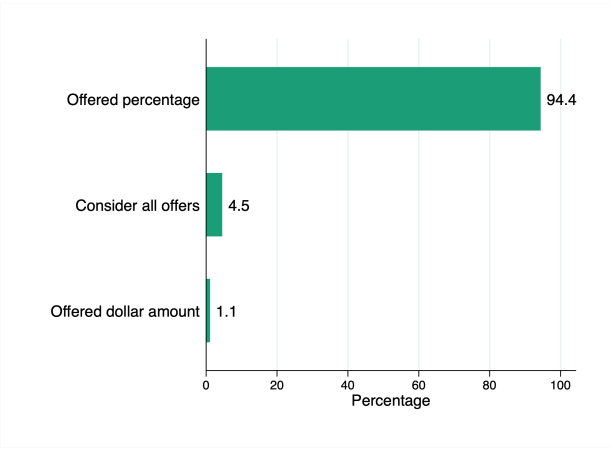
(a) Whether the buyer has negotiated



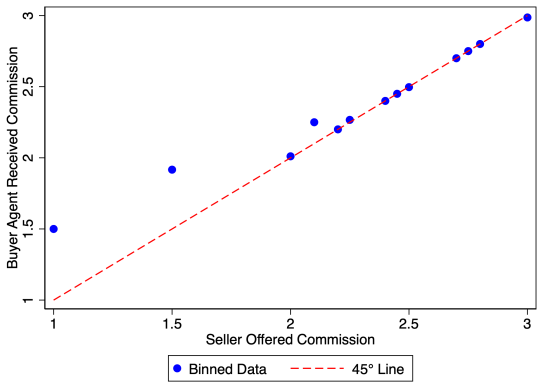
(b) Buyers' agent net commissions (after rebates) by negotiation type

Figure 6. Sellers' offered commission type

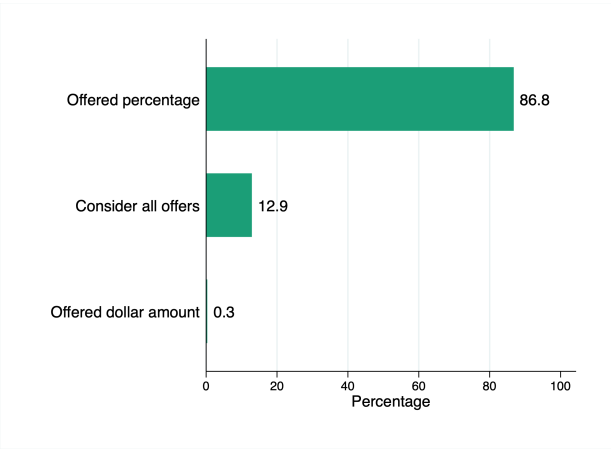
This figure plots the sellers' offer of commission paid, as reported by the seller's agent, pre and post-NAR, in panels (a) and (c) respectively. It also plots a bin-scatter of the sellers' offered commissions on the x-axis buyers' paid commissions on the y-axis, both reported by the sellers' agent, pre and post-NAR, in panels (b) and (d) respectively. The red line in panels (b) and (d) is a 45 degree line that crosses at zero.



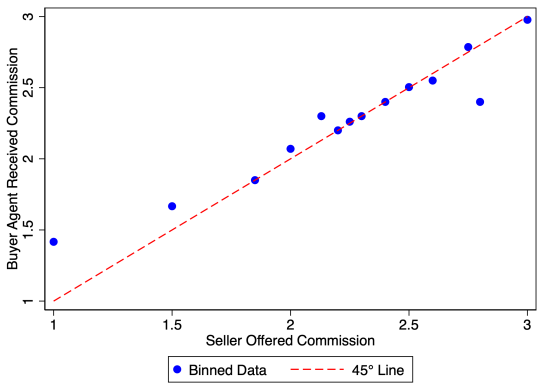
(a) Pre-policy, seller offers



(b) Pre-policy, offered and received commission



(c) Post-policy, seller offers



(d) Post-policy, offered and received commission

Table 1. Commission Structures Before and After the 2024 NAR Settlement

This table compares commission structures before and after the 2024 NAR settlement. Panel A describes buyer representation agreements, Panel B the overall commission structure, Panel C the scope for buyer negotiation, and Panel D the outcome if a buyer has no agent. The first two columns show pre-settlement differences across states with and without buyer representation agreements (RAs), while the third column summarizes the nationwide rules introduced after the settlement.

Pre-Settlement		**Post-Settlement**
States with RA	**States without RA**	**All states**
Panel A: Buyer Representation Agreement		
Buyers signed written agreements specifying services and capping buyer agent compensation (typically 2.5 to 3% of price).	No written agreement; buyer agent compensation determined by the seller's MLS offer.	Written buyer agreements required; must specify services and a maximum fee, signed before tours; total compensation capped from any source.
Panel B: Commission Structure		
Sellers contracted for 5 to 6% total, with roughly half (about 2.5 to 3%) offered to the buyer's agent via the MLS.	Same 5 to 6% total commission; split controlled by listing contract and MLS offer.	Listing contracts specify only the listing side fee (about 2.5 to 3%); no advertising or offering buyer agent compensation on the MLS.
Panel C: Room for Buyer Negotiation		
Limited in practice; although capped by RA, buyers rarely negotiated, believing sellers paid the fee.	Even less scope; no cap and no direct contract; buyer's fee was dictated by the seller's MLS offer.	Buyer negotiates the fee directly in the RA; negotiation occurs up front between buyer and agent.
Panel D: If Buyer Has No Agent		
Outcome depended on the listing contract; sometimes the listing agent retained the full 5 to 6%, in other cases the seller saved the buyer's portion (about 2.5 to 3%) and could pass savings to the buyer in a markdown.	Same as RA states; the listing agreement governed whether the listing agent retained the full commission or the seller recovered the buyer side.	No buyer side commission is due; sellers may offer concessions during negotiations that can be applied to buyer costs, but not via MLS offers or the listing contract.

Table 2. Survey Experiment of Biases

This table presents survey experiment results. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Panel A: Survey experiment results

Comparison	Mean (Baseline)	Mean (Treatment)	Difference	t-statistic	p-value
Scenario 2 vs 1 (denominator bias)	0.079	0.172	0.093***	-3.94	<0.001
Scenario 3 vs 1 (incidence bias)	0.079	0.275	0.196***	-7.49	<0.001
Scenario 4 vs 1 (denominator bias & incidence bias)	0.079	0.370	0.291***	-10.60	<0.001

Panel B: Fraction of respondents shopping for more than one realtor

Measure	Value
Mean	0.340
Standard error	0.015

Table 3. Foregone Independent Representation Following NAR

This table presents event study and difference-in-differences (DiD) analysis of opt-out of buyer's choice to be without independent representation following the NAR settlement implementation. Control variables include a categorical variable for the property type and a continuous variable representing the log of IRS SOI zip code average gross income. post_policy $\times$ $NonRA$ is the interaction between a post-NAR dummy and the state not requiring buyer's representation agreements pre-policy. Standard errors are reported in parentheses and are clustered by market by house price bins by week. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Panel A: Event Study

	No Indep. Rep. (1)
post_policy	0.0174***
	(0.000697)
Controls	Yes
CBSAby HP Bin FE	Yes
City FE	Yes
ymean	0.0737
N	821601

Panel B: Difference-in-Differences

	No Indep. Rep. (1)
post_policy $\times$ $NonRA$	0.0193***
	(0.00149)
Controls	Yes
CBSAby HP Bin FE	Yes
Week FE	Yes
City FE	Yes
ymean	0.0737
N	821601

Table 4. Commission Rates Following NAR

This table presents event study and difference-in-differences (DiD) analysis of opt-out of commission rates following the NAR settlement implementation, with control variables. Control variables include a categorical variable for the property type and a continuous variable representing the log of IRS SOI zip code average gross income. post_policy $\times NonRA$ is the interaction between a post-NAR dummy and the state not requiring buyer's representation agreements pre-policy. The independent variable in column (1) is the buyer's commission rate, as reported by buyer's agents, in percentage points. The independent variable in column (2) is the buyer's commission rate, as reported by seller's agents, in percentage points. The independent variable in column (3) is the seller's commission rate, as reported by seller's agents, in percentage points. The independent variable in column (4) is the sum of buyer and seller commission rate, as reported by seller's agents, in percentage points. Standard errors are reported in parentheses and are clustered by market by house price bins by month. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Panel A: Event Study

	Buyer (1)	Buyer (2)	Seller (3)	Seller (4)
post_policy	0.0210	0.0238	0.0350	0.0356
	(0.0229)	(0.0230)	(0.0318)	(0.0311)
Controls	No	Yes	No	Yes
CBSAby HP Bin FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
ymean	2.545	2.545	2.535	2.535
N	2252	2252	2531	2531

Panel B: Difference-in-Differences

	Buyer (1)	Buyer (2)	Seller (3)	Seller (4)
post_policy $\times NonRA$	-0.0362	-0.0333	0.0196	0.0285
	(0.0407)	(0.0407)	(0.0676)	(0.0666)
Controls	No	Yes	No	Yes
CBSAby HP Bin FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
ymean	2.585	2.585	2.540	2.540
N	1547	1547	1802	1802

Table 5. FinTech and Discount Brokerage Choices Following NAR

This table presents event study and difference-in-differences (DiD) analysis of buyers' and sellers' choice of FinTech and discount brokerages following the NAR settlement implementation, with control variables. FinTech brokerages is defined as RedFin. Discount brokerages are a list of 75 firms searched from the top 20 US metro areas, excluding RedFin. Control variables include a categorical variable for the property type and a continuous variable representing the log of IRS SOI zip code average gross income. post_policy $\times$ $NonRA$ is the interaction between a post-NAR dummy and the state not requiring buyer's representation agreements pre-policy. Standard errors are reported in parentheses and are clustered by market by house price bins by week. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Panel A: Event Study

	FinTech Broker		Discount Broker	
	Seller	Buyer	Seller	Buyer
	(1)	(2)	(3)	(4)
post_policy	0.00151***	0.00296***	0.000928***	0.0000943
	(0.000229)	(0.000264)	(0.000138)	(0.0000638)
Controls	Yes	Yes	Yes	Yes
CBSAby HP Bin FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
ymean	0.0100	0.0122	0.00306	0.000691
N	821601	821601	821601	821601

Panel B: Difference-in-Differences

	FinTech Broker		Discount Broker	
	Seller	Buyer	Seller	Buyer
	(1)	(2)	(3)	(4)
post_policy $\times$ $NonRA$	-0.00101*	-0.000286	0.000411	0.000317***
	(0.000580)	(0.000630)	(0.000281)	(0.000113)
Controls	Yes	Yes	Yes	Yes
CBSAby HP Bin FE	Yes	Yes	Yes	Yes
Week FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
ymean	0.0100	0.0122	0.00306	0.000691
N	821601	821601	821601	821601

Table 6. Seller offered commission vs buyer paid commission

This table presents regressions of buyers' paid commission on sellers' offered commission, as reported by sellers' agents. Control variables include a categorical variable for the property type and a continuous variable representing the log of IRS SOI zip code average gross income. Standard errors are reported in parentheses and are clustered by market by house price bins by week. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Dependent Var: Buyer Paid Commission	Pre-policy (1)	Post-policy (2)
Seller Offered Commission	0.781***	0.797***
	(0.113)	(0.102)
Controls	Yes	Yes
CBSAby HP Bin FE	Yes	Yes
City FE	Yes	Yes
ymean		
N	409	800

Table 7. Hedonic Regression of Log Prices Paid by Foregone Independent Representation Status

This table presents the results of a hedonic regression with a dependent variable being the log of the transaction price, and the main independent variable "foregone_representation" being an indicator variable for whether the buyer foregoed independent representation. The sample is limited to single-family homes. The square footage of the house, "sqft," and the size of the lot, "lotsize," are in thousands. We further construct variables "good_condition" as a dummy variable indicating if the listing text included keywords of "renovated," "remodelled," or "state-of-the-art", and "bad_condition" as a dummy variable indicating if the listing text included keywords of "fixer-upper," "potential," "investor," or "bones." Standard errors are clustered at the CBSA by house price bin by week level.

	All states		No-RA states	
	Pre-policy (1)	Post-policy (2)	Pre-policy (3)	Post-policy (4)
foregone_representation	-0.0181***	-0.0193***	-0.0269***	-0.0223***
	(0.00395)	(0.00393)	(0.00459)	(0.00456)
sqft	0.279***	0.275***	0.376***	0.305***
	(0.00489)	(0.00484)	(0.00595)	(0.00573)
lotsize	0.0152***	0.0161***	0.0161***	0.0171***
	(0.000805)	(0.000838)	(0.00101)	(0.00101)
good_condition	0.0476***	0.0593***	0.0525***	0.0618***
	(0.00200)	(0.00200)	(0.00238)	(0.00233)
bad_condition	-0.0882***	-0.0946***	-0.0939***	-0.0947***
	(0.00314)	(0.00295)	(0.00372)	(0.00362)
CBSAXweek FE	Yes	Yes	Yes	Yes
Year Built FE	Yes	Yes	Yes	Yes
Lot Size Bucket FE	Yes	Yes	Yes	Yes
Square Feet Bucket FE	Yes	Yes	Yes	Yes
Beds FE	Yes	Yes	No	Yes
Baths FE	Yes	Yes	No	Yes
zipcode	Yes	Yes	Yes	Yes
ymean				
N	166876	212754	114642	146720

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Internet Appendix

A The Rice University Real Estate Commission Survey

A.1 Survey instrument

Introduction

Hi FirstName! We are researchers at Rice University conducting a Real Estate Agent Commission Survey with the aim of understanding real estate commission trends. This survey has been approved by Rice University IRB-FY2025-19.

We hope to ask you a few questions about one of your recent transactions at Property address on Sale date.

Questions

Q1. Which side did you represent for the transaction on Property address on Sale date?

- Seller
- Buyer
- Both seller and buyer

Q2. Was the buyer also represented by a buyer's agent? *(If Q1 = Seller)*

- Yes
- No – they were self-represented

Q3. What percentage of the sale price did you receive in gross agent commissions? Provide the percentage before any fees and taxes, including any portion that would have gone to a buyer's agent. *(If Q1 = Both or Q2 = No)* _____

Q4. Did the buyer's agent receive a flat fee or a percentage of the sale price? *(If Q1 = Seller & Q2 = Yes)*

- Flat fee
- Percentage of the sale price

Q5. How much did the buyer's agent receive as a flat fee? *(If Q4 = Flat fee)* _____

Q6. What percentage of the sale price did the buyer's agent receive in commissions? Provide before fees and taxes. *(If Q4 = Percentage)* _____

Q7. What percentage of the sale price did you receive in commissions excluding the buyer's agent portion? Provide before fees and taxes. *(If Q1 = Seller & Q2 = Yes)* _____

Q8. Did the seller initially offer a buyer's agent commission? *(If Q1 = Seller)*

- Yes, specific percentage
- Yes, fixed dollar amount
- No, considered all offers without specific offer

Q9. What percentage of the sale price did the seller initially offer as buyer's agent commission? *(If Q8 = Yes, specific percentage)* _____

Q10. What dollar amount did the seller initially offer as buyer's agent commission? *(If Q8 = Yes, fixed dollar amount)* _____

Q11. Did the seller offer a buyer's agent commission to other buyers in the market? *(If Q1 = Both)*

- Yes, specific percentage
- Yes, fixed dollar amount
- No, considered all offers without specific offer

Q12. Did you receive a flat fee or percentage of sale price as your buyer's agent commission? *(If Q1 = Buyer)*

- Flat fee

- Percentage of the sale price

Q13. Did you rebate some of your commissions to the buyer? *(If Q1 = Buyer)*

- No
- Yes

Q14. What dollar amount did you receive in buyer agent commissions? Provide before fees and taxes. *(If Q12 = Flat fee & Q13 = No)* _____

Q15. What percentage of sale price did you receive as buyer's agent commissions? Provide before fees and taxes. *(If Q12 = Percentage & Q13 = No)* _____

Q16. What percentage of sale price did you rebate to the buyer? *(If Q13 = Yes & Q12 = Percentage)*

Q17. What dollar amount did you rebate to the buyer? *(If Q13 = Yes & Q12 = Flat fee)* _____

Q18. After rebating, what percentage or dollar amount did you receive in agent commissions? Provide before fees and taxes. *(If Q13 = Yes)* _____

Q19. Why was your commission zero? *(If any commission question = 0)*

- This transaction involved me as the buyer/seller
- This transaction involved my family or friends
- Other: _____

Q20. Did the buyer try to negotiate on buyer's agent commission? *(If Q1 = Buyer)*

- Yes
- No

Q21. Was the buyer a first-time home buyer? *(If Q1 = Buyer)*

- Yes
- No
- Don't know

Q22. How important are the following factors in determining prevailing commission rates for buyers' agents in your market? *(Rank 1–5)*

1. Value provided to client
2. Time cost of service
3. Perception of quality
4. Relationship with other agents
5. Brokerage and licensing fees

A.2 Participant recruitment

Participant recruitment was conducted following Rice University IRB using email invitations. Two to three follow-ups are sent to non-responding individuals.

Response rates was about 5%. This response rate is consistent with other consumer surveys used in the literature.[1] Furthermore, our survey result on commission rates are consistent with analyses using 10-Q data.

B Other analyses

[1] For example, Michigan Consumer Sentiment Survey has a response rate of 2.6–4.2% HERE.

Table A.1. Agent Experience Choices Following NAR, No Controls

This table presents event study and difference-in-differences (DiD) analysis of buyers' and sellers' choice of experienced agents following the NAR settlement implementation, without control variables. post_policy $\times$ $NonRA$ is the interaction between a post-NAR dummy and the state not requiring buyer's representation agreements pre-policy. Standard errors are reported in parentheses and are clustered by market by house price bins by week. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Panel A: Event Study

	High Volume Agent		Experienced Agent	
	Seller	Buyer	Seller	Buyer
	(1)	(2)	(3)	(4)
post_policy	0.0416***	0.0251***	0.0199***	0.0129***
	(0.00135)	(0.00120)	(0.00120)	(0.00129)
CBSAXHP Bin FE	Yes	Yes	Yes	Yes
ymean	0.638	0.577	0.832	0.738
N	821645	821645	609210	540575

Panel B: Difference-in-Differences

	High Volume Agent		Experienced Agent	
	Seller	Buyer	Seller	Buyer
	(1)	(2)	(3)	(4)
post_policyXnon_bra	0.0257***	0.0146***	-0.00260	0.0114***
	(0.00261)	(0.00262)	(0.00226)	(0.00269)
CBSAby HP Bin FE	Yes	Yes	Yes	Yes
Week FE	Yes	Yes	Yes	Yes
ymean	0.638	0.577	0.832	0.738
N	821645	821645	609210	540575

Table A.2. Discount Brokerage Choices Following NAR, No Controls

This table presents event study and difference-in-differences (DiD) analysis of buyers' and sellers' choice of FinTech and discount brokerages following the NAR settlement implementation, with control variables. FinTech brokerages is defined as RedFin. Discount brokerages are a list of 75 firms searched from the top 20 US metro areas, excluding RedFin. post_policy $\times$ $NonRA$ is the interaction between a post-NAR dummy and the state not requiring buyer's representation agreements pre-policy. Standard errors are reported in parentheses and are clustered by market by house price bins by week. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Panel A: Event Study

	FinTech Broker		Discount Broker	
	Seller (1)	Buyer (2)	Seller (3)	Buyer (4)
post_policy	0.00124***	0.00276***	0.000832***	0.000115*
	(0.000227)	(0.000262)	(0.000138)	(0.0000636)
CBSAXHP Bin FE	Yes	Yes	Yes	Yes
ymean	0.0100	0.0122	0.00306	0.000691
N	821645	821645	821645	821645

Panel B: Difference-in-Differences

	FinTech Broker		Discount Broker	
	Seller (1)	Buyer (2)	Seller (3)	Buyer (4)
post_policyXnon_bra	-0.00124**	-0.000445	0.000245	0.000229**
	(0.000570)	(0.000607)	(0.000269)	(0.000101)
CBSAby HP Bin FE	Yes	Yes	Yes	Yes
Week FE	Yes	Yes	Yes	Yes
ymean	0.0100	0.0122	0.00306	0.000691
N	821645	821645	821645	821645

Table A.3. Foregone Independent Representation Following NAR, No Controls

This table presents event study and difference-in-differences (DiD) analysis of opt-out of the buyer's choice to be without independent representation following the NAR settlement implementation. Control variables include a categorical variable for the property type and a continuous variable representing the log of IRS SOI zip code average gross income. post_policy $\times$ $NonRA$ is the interaction between a post-NAR dummy and the state not requiring buyer's representation agreements pre-policy. Standard errors are reported in parentheses and are clustered by market by house price bins by week. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

Panel A: Event Study

	No Indep. Rep.
	(1)
post_policy	0.0174***
	(0.000708)
CBSAby HP Bin FE	Yes
ymean	0.0737
N	821645

Panel B: Difference-in-Differences

	No Indep. Rep.
	(1)
post_policyXnon_bra	0.0195***
	(0.00150)
CBSAby HP Bin FE	Yes
Week FE	Yes
ymean	0.0737
N	821645