Does Regulating Developers Democratize Credit and Homeownership?

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Abstract

This study examines the impact of real estate developers on homeownership and the role of regulatory interventions. Over recent decades, developers have substantially influenced global homeownership trends. Despite their pivotal role, concerns persist over operational uncertainties, including project delays, cost overruns, defaults, and frauds. The implementation of the Real Estate (Regulation and Development) Act (RERA) in India provides a unique regulatory context, introducing measures that enhance transparency, accountability, and consumer protection in the housing market. Analyzing data on 1.06 million individuals, our findings demonstrate that RERA significantly boosts mortgage origination, particularly benefiting first-time borrowers and marginalized groups. Moreover, RERA causes a shift towards more affordable housing, effectively mitigating delays, defaults, and enhancing overall market transparency. Our study contributes to the literature on government interventions in housing markets, illustrating how regulatory measures can democratize homeownership and reshape market dynamics.

Keywords: homeownership, real estate developers, mortgage, affordability

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1 Introduction

The past few decades have witnessed a notable surge in the prominence of real estate developers, particularly in their influence on the domain of homeownership. In the early 1990s, fewer than 1 in 10 homes were constructed by one of the top 10 builders in the US. By 2019, this proportion had escalated to nearly 1 in 3 homes (National Association of Home Builders (NAHB), 2021). Notably, this trend isn't confined to the US; it resonates worldwide.[1] Real estate developers wield an indispensable influence in potentially expanding housing accessibility. Nevertheless, inherent risks such as project delays, cost overruns, contract defaults, and occasional fraudulent activities have emerged. These operational uncertainties can disrupt timelines, strain financial commitments, and erode stakeholders' trust. Despite their pivotal role, empirical microeconomic evidence linking the business risks of real estate developers to the broader real economy remains limited. This study endeavors to investigate the interplay between regulatory oversight, enhanced business practices, and their collective impact on shaping the homeownership landscape.

We utilize the adoption of the Real Estate (Regulation And Development) Act (RERA Act or RERA) introduced in India to protect the homebuyer and regulate real estate developers. Using data on home purchases and mortgage origination of around 1.06 million individuals in India varying in their demographics like location, age, gender, and caste, we study the way RERA impacted homeownership and access to the mortgage market. We particularly focus on exploiting the cross-sectional variation across demographic characteristics to understand who benefits from the passage of the RERA act – whether the homeownership landscape is democratized by bringing new homeoweners, or if RERA led to an increase in the homeownership gap. Since homeownership is one of the most important economic investments made by households over their lifetime, this consequently can have an impact on wealth accumulation and inter-generational wealth transfer (Chetty and Szeidl (2007),

[1] BIS Report highlights the importance of the debt taken by property developers in various other countries like UK, Hong Kong, Indonesia, Malaysia, and Singapore

Chetty, Sándor and Szeidl (2017), Sodini et al. (2023) among others).

Property developers in India, as in many other parts of the world, are often known for defaulting or delaying on their projects. For instance, Unitech, a prominent real estate developer, encountered multiple delays in completing its housing projects. The delayed projects left homebuyers in a lurch, prompting legal actions and protests due to non-delivery of promised units within the stipulated time frame. More than 20,000 homebuyers have been waiting for their apartment for more than a decade: (Source: Times of India, Source: Business Standard).[2] Such events lead to uncertainty surrounding the property that individuals would purchase and the consequent mortgage they would be approved. RERA seeks to transform the real estate sector by introducing transparency and accountability. It mandates the mandatory registration of real estate projects and agents, ensuring detailed project disclosures, adherence to project timelines, and the establishment of escrow accounts to prevent fund diversion. RERA aims to protect homebuyers' interests by mediating disputes, imposing penalties for non-compliance, and providing a platform for grievance redressal. Its primary objectives include enhancing buyer confidence, and preventing project delays. For instance, post the implementation of RERA, in the event of a delay, a Delhi-based man has received around INR 1.6 million as a delay penalty on a house priced at INR 13.5 million from the project developed by NexGen Infracon.

The implementation of RERA could affect homeownership in three ways: First, it can increase the demand for home purchases by instilling confidence in the borrowers. Second, it can reduce the uncertainty around the collateral quality and increase mortgage origination (Stroebel, 2016). Third, RERA might increase regulatory costs for private builders and they can reduce the supply of new developments leading to a reduction in new home purchases. The empirical analysis in this paper is motivated by the ambiguity in the theoretical predictions and attempts to identify the way regulating real estate developers can differentially

[2]There has been incidence of stalled residential project in many other countries and regions, including China, Singapore, Malaysia, Thailand and Hongkong, among which, the problem is the most severe in mainland China which caused massive mortgage boycott against the banks.

affect various demographic and geographic groups.

The empirical strategy exploits the staggered implementation of RERA across states in India to identify the effect of RERA on mortgage origination and homeownership. There are three potential challenges that we attempt to overcome through our empirical design: First, RERA could affect the bank and that can affect the overall supply of credit, also there could be other macroeconomic factors affecting the aggregate supply of credit. Our empirical specification compares within-branch (branch × year-quarter) mortgage origination across treated and control areas. Thereby, it allows us to control any broad-based macroeconomic shock to the credit supply. Second, the treated group (or the early adopters) could be different from the control group (relatively late adopters). Since the analysis of this study is within the same branch, this concern in our setup implies that the same branch treats the treated and control groups differently. We address this by first presenting a time series pattern of mortgage origination and showing there is no difference across control and treated groups before the implementation of RERA. Our specification controls for the time-invariant relationship of a branch with the location of mortgage origination (branch × location) and thereby controls for any potential time-invariant differences. We further do a balance test across the control and treated states for the pre-sample period. Third, there could be other confounding events in a state that could drive the observed effect. We address this concern first by showing that other macroeconomic variables that might affect the housing market don't affect the control and treated groups differently. We also, for a subset of the analysis, exploit instances where RERA was not binding for builders and show that within the same state, the impact is only on the builders/ housing properties covered under RERA. Fourth, there are concerns surrounding difference-in-difference design using the staggered policy rollout (Baker, Larcker and Wang, 2022). We address these by checking the robustness of our analysis following Sun and Abraham (2021) and Callaway and Sant'Anna (2021).

Using this empirical specification, we have identified four set of primary results. First, we found that the implementation of RERA leads to an increase in mortgage origination.

This finding supports the idea that the transparency requirement introduced by RERA may decrease the risk associated with the collateral used for mortgages, thereby making banks more inclined to originate mortgages. The expected return on a mortgage is contingent upon both the borrower's capacity to meet interest payments and the valuation of the housing collateral. Given the illiquid and heterogeneous nature inherent in housing assets, there is a high degree of information asymmetry on the collateral value (Stroebel, 2016; Cerqueiro, Ongena and Roszbach, 2016) . Consequently, the passage of RERA mandated builders to disclose the housing quality and imposed regulatory constraints on projects getting stalled, resulting in greater transparency of the underlying collateral and a higher degree of mortgage origination. Additionally, this result can also be attributed to the potential rise in demand for home purchases and a consequent mortgage demand due to the reduced likelihood of delays or defaults by real estate developers (Kurlat and Stroebel, 2015).

A framework of uncertainty surrounding the quality of collateral used for mortgages can lead banks to take measures to mitigate the risk of potential defaults. One common approach is for banks to vertically integrate themselves with real estate developers in order to reduce such risks (Agarwal et al. (2014), Stroebel (2016) among others). Further, banks might use the relationship (or physical proximity with a borrower) with a borrower to mitigate potential risks. This can lead to lowering of lending to new borrowers and more to borrowers who has a history of lending relationships ((Petersen and Rajan, 2002), Berger and Udell (1995), Degryse and Ongena (2005), Agarwal and Hauswald (2010) among others). This could have an implication on the mortgage of minority groups who might not have an established relationship with banks. Banks could use a locality or neighborhood as a proxy of riskiness and lend more to more affluent neighborhoods, or neighborhoods which has a thriving real estate market (Kurlat and Stroebel, 2015). This could further imply that mortgages are concentrated only in a few areas.

Given this premise, in our second set of results, we delve into various aspects of diversity to understand how the introduction of RERA affects different groups. Our findings reveal noteworthy shifts: post-RERA, there's a rise in mortgages for first-time borrowers, improved mortgage terms for women and marginalized castes, increased availability of mortgages for properties in emerging neighborhoods, and a redistribution of mortgages from metropolitan and Tier 1 cities to Tier 2 and Tier 3 cities. Collectively, these outcomes suggest a notable trend towards broader accessibility to homes and mortgage facilities, indicating a democratization in this domain.

The reduced uncertainty in the quality of the underlying collateral affects mortgage origination by banks as well as the demand for housing by homeowners. RERA most directly impacts real estate developers by imposing a regulatory constraint of maintaining an escrow for every project and preventing any transfer of resources across projects. RERA also mandates swift re-payal of the money taken from the borrower in the event of delay in project completion. These taken together implies that there are additional constraints on the developer and often the centralized budget constraint changes to a project-level constraint. Consequently, it can shape the business decisions and product choices of real estate developers (Stein (1997), Almeida, Kim and Kim (2015) among others).

Following this, the third set of results highlights the real effect on the housing market following the implementation on RERA. We find a greater propensity to provide more affordable, relatively smaller houses, which are relatively cheaper. Meanwhile, there is a reduction in the availability of luxury housing. We also find an overall decrease in the price of affordable homes and an increase in the price of luxury homes. The results provide complementary evidence to the ones obtained from the mortgage market in supporting the hypothesis that RERA led to the democratization of homeownership.

In our final set of results, we look at the effect RERA on the completion of housing projects and the consequent default in mortgages. Using data on the project completion, we show a significant decline in delay of project completion after the implementation of RERA. We also find that post the implementation of RERA there is a lower delinquency and lower default in mortgage loans. Taken together, the results show that RERA had a significant impact on the housing market by making the projects more transparent and increasing any potential cost of delays of property dealers leading to greater mortgage origination that further leads to lower defaults.

Our baseline results are robust to various robustness checks. First, there could be potential issues surrounding the approach of Baker, Larcker and Wang (2022), we address the concerns by following Sun and Abraham (2021) and Callaway and Sant'Anna (2021). Next, since many of the primary variables of interest are count-like variables we show that the results are robust to alternate specifications of using Poisson regression (Cohn, Liu and Wardlaw, 2022). We also exploit a regulatory guideline that allows some properties that are relatively smaller in plot size to be exempt from RERA. We find there is no tangible effect of impact of the implementation RERA in the non-RERA properties in the same state that implemented RERA highlighting that the effect is not driven by some state-specific unobservables that are correlated with the passage of RERA.

This paper most directly contributes to the literature studying the impact of government intervention in the housing market. Floetotto, Kirker and Stroebel (2016) lays down a general equilibrium model to study the effect of government policies like taxes on property and/or rent on home prices, quantities, and allocations, and welfare. Various other works have empirically investigated different government policies on home prices and homeownership such as tax policies (Gervais, 2002; Sommer and Sullivan, 2018), and subsidies (Berger, Turner and Zwick, 2020). However, limited attention is given to the impact of real estate developers on the housing market. In this paper we contribute to this literature by showing government policies targeted toward real estate developers mandating them to be more transparent and increasing their cost to delay on projects (RERA) can impact allocative outcomes in the housing market and consequently in the mortgage market. We find that the passage of RERA leads to greater access of housing by first-time borrowers, and borrowers from smaller regions.

Our paper also contributes to the literature studying the role of collateral and the uncertainty surrounding collateral quality in affecting household debt. There is a large extant literature that highlights the importance of information asymmetry in credit disbursement (Petersen and Rajan (1994), Karlan et al. (2009) among others). Relationship between banks and borrowers have been highlighted to reduce information assymetry and affect household debt like mortgage, credit card debt and also impacts default (Agarwal et al. (2018), Puri, Rocholl and Steffen (2017), Guiso, Sapienza and Zingales (2013) among others). In the context of the mortgage market Stroebel (2016) highlights that lenders with superior information about collateral quality can reduce foreclosure in mortgages. It builds on works of Agarwal et al. (2014) that highlight the role of vertical integration of real estate developers and banks as a tool to mitigate information uncertainty in the collateral quality. We add to this literature by showing that regulating real estate developers can create a scenario that improves transparency of the underlying collateral and facilitate higher mortgage origination.

Finally, we contribute to the literature that studies the factors that can expand or hinder access to owning homes across various groups. This can often come from a lack of access to a mortgage driven by political/ electoral factors (Akey et al. (2018), McCartney (2021) among others); discrimination across various factors such as race, gender, religion in the mortgage as well as in the housing market (Munnell et al. (1996), Bhutta and Hizmo (2021) among others) as well as self selection outside the mortgage or the housing market due to fear of getting discriminated against (Charles and Hurst (2002), Park, Sarkar and Vats (2021) among others).[3] Other factors that can impact the dispersion of ownership could be segmented nature of search in the housing market leading to excess demand in a small neighborhood (Piazzesi, Schneider and Stroebel, 2020), the potential difference in historical mortgage-market reforms (Andersen, 2011) and differential appeal of the American dream of owning a home (Agarwal, Hu and Huang, 2016). We contribute to this literature by showing that making real estate builders more transparent and reducing the potential cost of default

[3]Several studies have highlighted supply-side bottlenecks that prevent access to mortgages across various groups like race, gender. See Holmes and Horvitz (1994), Tootell (1996), Ross et al. (2008), Ghent, Hernandez-Murillo and Owyang (2014), Cheng, Lin and Liu (2015), Hanson et al. (2016), Giacoletti, Heimer and Yu (2021), Bartlett et al. (2022), Ambrose, Conklin and Lopez (2021), Begley and Purnanandam (2021), Bhutta, Hizmo and Ringo (2021), Fuster et al. (2022), Howell et al. (2022), Butler, Mayer and Weston (2023), among others.

could have asymmetric impact on groups that were previously excluded from the housing market and can lead to democratization of the homeownership landscape.

The remainder of the paper is organized as follows: Section 2 lays down the institutional nature of the housing market in India and the changes brought about by RERA. Section 3 describes the data. Section 4 lays down the empirical strategy used in the paper and section 5 presents the results. Finally, section 6 concludes.

2 Institutional Details

This section presents the institutional design of homeownership in India – the way the housing market worked before the implementation of RERA, and the necessary changes that RERA brought in the housing market.

2.1 Pre-RERA Landscape of Housing Sector in India

Before the advent of the Real Estate (Regulation and Development) Act (RERA), the Indian housing sector faced a host of intricate challenges that impeded its functionality and credibility. Transparency was notably lacking, leaving prospective homebuyers grappling with a shortage of comprehensive and accurate information concerning various housing projects. This lack of transparency created an atmosphere filled with uncertainties, exposing homebuyers to misleading representations and financial risks. Moreover, persistent project delays left many homebuyers in a state of uncertainty, despite significant financial commitments. Deceptive advertising, promising amenities that often failed to materialize, compounded the sector's problems. The absence of robust grievance redressal mechanisms further exacerbated homebuyers' plight, amplifying financial vulnerabilities and discontent within the housing sector. RERA's implementation not only seeks to protect homebuyers but also affects banks and financial institutions. The Act's focus on ensuring project completion within stipulated timelines and enhancing transparency can reduce default risks associated with delayed or incomplete projects, thereby positively impacting banks by mitigating non-performing assets (NPAs) and potential loan defaults related to the real estate sector. Additionally, RERA's stringent regulations and mechanisms for dispute resolution can potentially foster a more secure lending environment for banks, contributing to increased confidence in financing real estate projects.

2.2 RERA's Intervention and Key Provisions

The advent of the Real Estate (Regulation and Development) Act in 2016 marked an epochal shift in the Indian housing sector, ushering in a paradigm of reforms aimed at rectifying long-standing industry maladies. RERA's core mandate revolved around enhancing transparency, instilling accountability, and fortifying consumer protection. Mandating the registration of real estate projects above stipulated thresholds, RERA engineered a seismic shift towards transparency, mandating developers to provide comprehensive disclosures. These encompassed detailed project timelines, layouts, approvals, and periodic progress updates, empowering buyers with crucial information for informed decision-making. Notably, the Act underscored the imperative of fair practices, imposing stringent regulations to curtail misleading advertisements and ensuring strict adherence to disclosed project plans and stipulated timelines. The introduction of escrow accounts emerged as a pivotal measure, aiming to prevent fund diversion and safeguard homebuyers' financial interests. Developers were compelled to deposit a significant proportion of collected funds into dedicated accounts, thereby mitigating the risks associated with fund diversion and ensuring their judicious utilization for project completion. Crucially, RERA heralded the establishment of state-level regulatory bodies tasked with the onerous responsibility of enforcement, compliance monitoring, dispute resolution, and efficient grievance redressal, thus infusing an element of accountability and oversight within the sector.

RERA's implementation epitomized a transformative juncture, catalyzing a seismic shift towards a more transparent, accountable, and consumer-centric housing sector in India. The Act's stringent regulations and emphasis on transparency significantly bolstered buyer confidence by instilling trust in the sector's integrity. Timely project deliveries, adherence to quality standards, and the assurance of comprehensive disclosures augmented the sector's reliability, mitigating uncertainties associated with project delays and unfair practices. Additionally, RERA's pivotal focus on establishing efficient mechanisms for dispute resolution and robust grievance redressal engendered a more consumer-friendly housing market, fostering a harmonious ecosystem conducive to sustainable growth and heightened investor confidence. In essence, RERA's legacy transcends mere regulatory reforms; it has been instrumental in transforming the erstwhile opaque and uncertain housing domain into a transparent, accountable, and consumer-centric industry, envisaging a future characterized by resilience, fairness, and sustained growth.

3 Data and Summary Statistics

The primary analysis of the paper hinges two different sources of data – mortgage transactions data, and data on real estate purchases. We augment these data with the information on the passage and implementation of RERA from the ministry of housing affairs in India. In this section we provide an overview of the data:

Mortgage transactions data The data includes the mortgage originated by all branches of a state-owned commercial bank in India from the 1990s to 2023. This bank is one of the largest banks in India with over 20,000 branches across all states and union territories in India. The distribution of branches across the country is presented in panel A of figure 1. The original sample includes 4 million loans. The data includes loan information, collateral attributes, borrower information, and branch information. Loan information includes the date of disbursement, loan amount, interest rate, loan term, whether the interest rate is fixed, monthly repayments, and loan performance. Attributes of the collateral include the address and the pin code of the home, the purchase price, and the square footage of the home.

Borrower information includes each borrower's unique identifier, gender, age, occupation, income, caste, and religion. Branch information includes pin code and a unique identifier for each branch.

We keep the mortgages originated from April 2015 to December 2019 and remove the four years from 2020 to 2023 to avoid the confounding effect of the COVID-19 pandemic. We only keep the branches that issued the first mortgage before October 2016 which is the month when the first few states announced the state-level RERA policy and delete branches that started home loan business after RERA. We exclude mortgages that rank in the top and bottom 1% of all mortgages in terms of the loan amount, purchase cost, or square footage. We also removed mortgages that were missing the collateral pin code. After the screening, we have above 1 million mortgages.

Table 1 is a summary statistic of key variables. In Panel A, we construct a panel of branch and collateral pin code by calendar quarters. Every quarter, ₹786,000 or 0.39 mortgage loans are originated per branch per pin. These mortgages were obtained by 0.38 borrowers, of which 0.29 were first-time borrowers. The average size of each mortgage (=*Loan Amount/Loan Number*) is ₹2.14 million. "*Prob. of Getting Loan*" is a dummy variable equal to one if "Loan Amount" is greater than zero.

In Panel B, we construct a panel of branch and state of collateral by calendar quarters. We focus on the number of unique pin codes that received loans with this data structure. "*No. of New Pin*" represents the number of pin codes that received mortgages for the first time this quarter, while "*No. of Existing Pin*" represents the number of pin codes that obtained loans previously. Each quarter, on average 1.46 pin codes within a state obtain a mortgage from each branch, with only 0.01 obtaining a loan for the first time.

In Panel C, we examine the loan-level data. The average interest rate is 8.61%, and the average loan amount is ₹2million. The average cost of these houses is ₹3.46 million, and the build-up area of 906.20 sq ft. The average loan-to-value ratio is 56.72%. 27% of the borrowers are female, 58% are first-time borrowers and 5% belong to the backward caste.

Real Estate data The data includes residential real estate development projects across 12 cities in 9 Indian states between 2010 and 2020. It contains detailed project characteristics such as location, developer information, property segment, project score, RERA status, delays, number of units, unit size, and transacted prices. We restrict the data to projects launched five years before and after the RERA enactment in the respective states. This results in a total of 13,357 development projects.

Panel D provides the summary statistics of project-level variables. The average project size is 293.84 units. Among all projects, 21% of the units are affordable apartments with another 21% as luxury apartments. The mean project score is 6.64 with an average delay of 14.41 months. The average unit size is 1,378.14 square feet and the average per square feet price is ₹4,183.88.

Impelementation of RERA The dates of RERA implementation are collected from the official RERA website for each state, and we manually collect the date from news articles if the official notification is not available in the official RERA website for some states. The quarterly implementation of RERA across various states is presented graphically in figure 1 panel B. We find significant variations across the country in the timing of the implementation.

State Macroeconomic variables We observe state-specific macroeconomic variables like GDP per capita, Gross value added for the construction sector, the CPI of housing, and the credit issued by scheduled commercial banks from the handbook of Indian statistics maintained by the Reserve Bank of India.

4 Empirical Strategy

In this section, we describe the primary empirical strategy of the paper to first study the effect of RERA on mortgage outcome exploring the proprietary data on a large bank in India. Next, we also exploit the real estate data to understand the impact on the housing market.

4.1 Effect on Mortgage

We adopted a staggered Diff-in-diff approach that compares the states that have implemented RERA with the states that have yet to implement it. As introduced in Section 2, RERA was announced at the national level by the federal government in 2016, while the state government has the discretion to decide when to implement the Act.

In our baseline regression, we examine the impact of RERA on mortgage loans originating to the borrowers whose collateral is located in the treated states. Our empirical specification is below:

$$Y_{bpq} = \beta \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq} \tag{1}$$

Where Y_{bpq} includes (1) the probability of receiving a loan from branch b in a pin code p in the quarter q; (2) the amount loan originated by branch b to the residents whose collateral is located in a pin code p in the quarter q; (3) the number of total borrowers receiving a loan from branch b and whose collateral is located in a pin code p in the quarter q; (4) the average size of a loan from branch b in a pin code p in the quarter q; (5) the total number of first-time borrowers receiving a loan from branch b whose collateral is located in pin code p; (6) the total number of existing borrowers receiving a loan from branch b whose collateral is located in pin code p. "Post" is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ branch×pin fixed effect and $\alpha_{b,q}$ is the branch × year-quarter fixed effects. Branch×year-quarter allows to control for the unobserved affecting a branch in a quarter and allows the identification to come from within branch mortgage origination across two pin codes, one that is in a state that has implemented RERA and the other in the state that has not implemented RERA. Branch×pincode allows to control for any time-invarant effect of a branch's propensity to originate mortgage to a pincode like distance, home bias etc and allows the estimation to come from time series variation in the status of the implementation of RERA in a state.

To capture the dynamic changes of the effect over time, we define a series of binary variables *"$Event_{pq}$"* to indicate each event quarter from 4 quarters before to 8 quarters after the implementation of RERA in each state. Additionally, we define two binary variables "$Event_{pq(<=-5)}$" to capture the quarters leading up to the fourth quarter preceding the implementation, and "$Event_{pq(>=9)}$" to capture the quarters following the ninth quarter post-implementation. Y_{bpq} include the same set of variables as in equation (1). Other variables are defined same as in equation (1). To show the aggregated effect of the policy in each event quarter t, we visualize the cumulative effect $b_t = \sum_{q=-4}^{t} \beta_q$.

$$Y_{bpq} = \beta_{q(<=-5)} \cdot Event_{pq(<=-5)} + \sum_{q=-4, q\neq -1}^{8} \beta_q \cdot Event_{pq} + \beta_{q(>=9)} \cdot Event_{pq(>=9)} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq} \quad (2)$$

We also investigate the changes in mortgage attributes including the loan amount, LTV, and interest rate using the data at loan-level with the regression specified in equation (1).

We then conduct heterogeneous tests to examine the differential effect of RERA on collaterals located in different cities. Specifically, we run the following regression with data at the branch × pin code level:

$$Y_{bpq} = \beta_1 \cdot Post_{p(b)q} \times Tier3 + \beta_2 \cdot Post_{p(b)q} \times Tier2 + \beta_3 \cdot Post_{p(b)q} \times Tier1 + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq} \quad (3)$$

where the binary variables *"Tier 3"*, *"Tier 2"*, and *"Tier 1"* take 1 if the collateral is located in a tier 3, tier 2 or tier 1 city, respectively, and 0 otherwise.

We use the following specification to examine the effect on borrowers with different socio-economic status.

$$Y_{bpq} = \beta_1 \cdot Post_{p(b)q} \times Group + \beta_2 \cdot Post_{p(b)q} + \beta_3 \cdot Group + \alpha_{b,p} + \alpha_{b,q} + \alpha_{s,q} + \alpha_{s,g} + \varepsilon_{bpq} \quad (4)$$

where *"Group"* is a binary variable indicating the gender, income of the borrower and whether the borrower is a new borrower or not. In this specification we can also include state×quarter fixed effects denoted with $\alpha_{s,q}$ that allows us to control for any corresponding state-specific macroeconomic confounders. We also include state × Group fixed effects denoted by $\alpha_{s,g}$ to control for any time-invariate characteristics of each group in different states.

4.2 Effect on Housing Projects

To evaluate the effect of RERA on housing project characteristics, we estimate a project level regression with the following specification:

$$Y_{ijq} = \beta \cdot Post_{ijq} + \alpha_j + \gamma_q + \varepsilon_{ijq} \tag{5}$$

where Y_{ijq} includes project segment, score, delay, average unit size, and launch price per per square feet for project i in city j during quarter q. The regression specifications include city fixed effect α_j and quarter fixed effects γ_q. The city fixed effect allows to control for any time-invariant heterogeneities in a city and allows the identification to come from the time-varying status of RERA implementation. Meanwhile year-quarter fixed effects allows the identification to come from cross section across cities.

We evaluate the effect of RERA enactment on RERA-registered projects and its spillover effects on non-registered projects through the following specifications:

$$Y_{ijq} = \beta_1 \cdot Post_{ijq} \times R + \beta_2 \cdot Post_{ijq} \times NR + \alpha_j + \gamma_q + \varepsilon_{ijq} \tag{6}$$

where the binary variables "R" and "NR" take 1 if the project is RERA-registered or not registered respectively, and 0 otherwise.

The evolutionary effect of RERA on housing project characteristics is estimated using the following specifications:

$$Y_{ijq} = \sum_{q=-5}^{-2} \beta_q \cdot Event_{jq} + \sum_{q=0}^{9} \beta_q \cdot Event_{jq} + \alpha_j + \gamma_q + \varepsilon_{ijq} \tag{7}$$

while the evolutionary effect by RERA-registration status is evaluated using:

$$Y_{ijq} = \sum_{q=-5}^{-2} \beta_q \cdot Event_{jq} + \sum_{q=0}^{9} \beta_{1q} \cdot Event_{jq} \times R + \sum_{q=0}^{9} \beta_{2q} \cdot Event_{jq} \times NR + \alpha_j + \gamma_q + \varepsilon_{ijq} \quad (8)$$

We further investigate the effect of of RERA by property segment using the following specification:

$$Y_{ijq} = \beta_1 \cdot Post_{ijq} \times Seg1 + \beta_2 \cdot Post_{ijq} \times Seg2 + \beta_3 \cdot Post_{ijq} \times Seg3 + \alpha_j + \gamma_q + \varepsilon_{ijq} \quad (9)$$

where the binary variables *"Seg 1"*, *"Seg 2"*, and *"Seg 3"* take 1 if the development project belongs to affordable, mid, and luxury segment, respectively, and 0 otherwise.

5 Result

This section presents the results from the empirical analysis described in section 4. First, using the detailed data on mortgages, we study the impact of RERA on mortgage origination, and exploit various geographic and demographic cross-sections. Next, we look at data on real estate projects to study the impact of RERA on the various aspects of homeownership market.

5.1 Effect of RERA on Mortgage Origination

We start by investigating the effect of RERA on mortgage origination, which is one of the primary cornerstones of homeownership.[4] We use the staggered implementation of RERA and perform a difference-in-difference empirical strategy using the baseline regression specification 1. The results are reported in table 2. In the first two columns, the dependent variable is a binary variable taking the value 1, if a home mortgage loan is extended by a

[4]A large number of homes are purchased through mortgage borrowing. The 2021 Statistics Research Department report - *"Number of new home sales in the U.S. 2000-2020, by financing type"* states that two in three home purchases between 2000 and 2020 were financed through a conventional mortgage.

branch to a pincode. We find an increase in 0.8 percentage point in the probability of the extension of the loan to a pincode after the RERA was implemented in a state compared to a state where it was not yet implemented. Given than the unconditional mean is around 16 percent, the effect indicates more than 5% change in the probability of getting a mortgage. In column 1 we include branch×year-quarter and Pincode fixed effects. While in column 2 we include branch×year-quarter and branch×pincode fixed effects. Branch×year-quarter allows to control for an unobserved affecting a branch in a quarter and allows the identification to come from within branch mortgage origination across two pin codes, one that is in a state that has implemented RERA and the other in the state that has not implemented RERA. Branch×pincode allows to control for any time invarying effect of a branch's propensity to originate mortgage to a pincode like distance, home bias etc and allows the estimation to come from time series variation in the status of the implementation of RERA in a state. In columns 3 and 4 of table 2, the main variable of interest is the amount of loans disbursed. We transform the variable by ln(.01+.). We find that after the implementation of RERA there is over 15% of increase in the disbursal of home loans. In column 3 we include branch×year-quarter and Pincode fixed effects. While in column 4 we include branch×year-quarter and branch×pincode fixed effects. Similarly we find around 4% increase in the numbers of loans disbursed in the pincodes that implemented RERA. The effects are largely similar in columns 5 and 6 of table 2. Taken together the results highlight that there is an increase in both extensive margin as well as the aggregate mortgage loans disbursed after the implementation of RERA.

Next, we investigate the dynamic version of regression specification 1 as presented in the empirical specification 2. Since the effect can persist over years we are interested in plotting the cumulative effect as of each period by following the methodology Agarwal and Qian (2014). The results are reported in the figure 2. In panel A, we show the dynamic trend in the amount of loan disbursed. There is no difference between the treated and control group before the implementation of RERA, however, we see a sharp increase in the difference in lending towards the pincode belonging to states that had implemented RERA. The strictly identified *zero* coefficient in the pre-shock period also allows us to validate the parallel trend assumption that is imperative in any DiD analysis. We observe similar patterns in the number of loans and the probability of loan disbursal presented in panels B and C of figure 2.

Robustness Checks: We perform a series of tests to check the robustness of our baseline specification. First to address the criticisms laid out for the staggered difference-in-difference methodology highlighted in Baker, Larcker and Wang (2022), we use estimation process laid down in Sun and Abraham (2021) and Callaway and Sant'Anna (2021). We present the results in appendix table (A1) and (A2). We address concerns of potential usage of log(1+.) transformation of count-like variables by using the Poisson and inverse-sin transformation as highlighted in Cohn, Liu and Wardlaw (2022). We present the results in table A3. The primary granularity at which RERA is implemented is at the state level. However, to control for local unobservables we study at the granularity of pincode. However, it could be the concern that the increase in observations are artificially increasing the t-statistic. To address this we perform our modified baseline specification by collapsing the data at the branch-state-quarter level, instead of the granularity of branch-pin-quarter. The result is reported in Table A4. We also show attempt to address the non-random implementation of RERA in a state by showing that any of the observable state-specific factors does not seem to affect the timing of the implementation of RERA in a state. We present the relationship between state specific macroeconomic factors and the implementation of RERA in appendix table A5. We find no effect on lagged GDP, growth of construction sector, aggregate flow of credit, and aggregate house price index on the probability of the implementation of RERA. We also include these variables as controls in our baseline specification and find that the baseline results are qualitatively and quantitatively unchanged. The results are reported in appendix table A6. We also randomly allocate the status of RERA across the states and plot the distribution. Our coefficient lies outside the distribution. We report the placebo result in appendix figure A1. In order to address that concern that the treated and control groups might be geographically apart and hence are different in various dimension and are not comparable, we restrict the sample to the pincodes belonging districts that straddle the border of the state as depicted in figure A2. We perform the regression specification (1) on these set of districts and present the results in table A7. The results are similar to our baseline specification

5.2 Heterogeneity

In this section, we probe the various heterogeneities in the data to better understand the pathways through which the implementation of RERA can affect the dynamics in the housing market. We explore the following three characteristics – borrowers with a history, location of borrowers, gender, and caste of the borrowers.

We start by exploring variation across borrowers with a history of existing relationships with the branch. The idea of the test is that in the presence of asymmetric information, the relationship between a bank and a borrower can mitigate such friction (Boot and Thakor (2000), Sufi (2007) among others). As we explain in section 2, before the implementation RERA there was uncertainty about the quality of the collateral, consequently to mitigate such risk, less loans could be given to new borrowers and higher loans to borrowers with an existing relationship. Consequently, after the passage of RERA that led to greater transparency in the underlying collateral, we would expect less reliance on the past relationship and consequently higher lending to first-time borrowers.

We present a cross-sectional analysis of new vs existing borrowers, presented in table 3. In columns 1-2 we use the empirical specification 1 separately for new and existing borrowers. The main dependent variable is the natural logarithm of the number of borrowers of each type. We find that there is an increase in 2.4% of the number of new borrowers, however, we do not find any economic or statistically significant effect for the existing borrowers. Next, we look at the number of pincodes a branch is lending to in states that have implemented

RERA. The idea again follows that the branch after the implementation of RERA would be willing to lend in areas where it had never lent before and thereby did not have any relationship (Agarwal and Hauswald (2010)). We report the result in column 3 of table 3. We find that a branch lends to 6.1% more pincodes in after the implementation of RERA in a state. We also use loan-level data in column 4, which measures the intensive margin. We find the quantity of loans to new borrowers goes up compared to existing borrowers.

We also present a dynamic version of the effects of RERA on new and existing borrowers in figure 3. In panel A, we present the result on the total number of borrowers, we find an increase in the total number of borrowers after RERA and no effect prior to implementation of RERA. In panel B, we present the effect on new borrowers and show an increase in new borrowers after RERA, meanwhile we do not find any tangible effect of RERA on the existing borrowers, presented in panel C of table 3.

Next, we explore the dimension of the geographic location of the home that is purchased – whether it is purchased in a tier 1 vs tier 2 vs tier 3 city in Table 4. A metropolitan or tier 1 city is a place that has one of the highest commercial value as well as better information on the business in general and the underlying quality housing projects that are being built. Meanwhile, there is a higher degree of uncertainty in projects that are built in tier 3 cities. Consequently, given our thesis implementation of RERA would increase the propensity to lend more to the tier 3 cities.

In Table 5, we examine the effect of RERA implementation on mortgage characteristics, including the LTV (Loan-to-value ratio) and interest rate. The result shows that the implementation of RERA do not have a significant effect on the LTV and interest rate of new mortgages. However, there is a significant heterogeneity. The mortgage loans originated to the new borrowers, female borrowers and low income borrowers have a relatively higher LTV and lower interest rate. The LTV of mortgage loan originated to the new borrowers increase by 3.05 percentage points, and the interest rate is 4.1 basis points lower. The LTV of mortgage loan originated to the female borrowers increase by an insigificant 0.189 percentage points, and the interest rate is 3.9 basis points lower. The LTV of mortgage loan originated to borrowers whose annual income is below ₹200,000 increase by 0.499 percentage points, and the interest rate is 7.7 basis points lower. This result suggest that the disadvantaged borrowers receive mortgage loans with better terms.

5.3 Effect on Housing Projects

In this section, we investigate the effect of RERA on the characteristics of housing projects, including unit size, per-square-foot price, and project quality, which may in turn affect housing affordability.

We start by presenting the overall trends in Figure 4 Panels (a) -(b). Prior to the implementation of state-level RERA regulations, we observe a steady rise in the size of residential units and the per-square-foot prices. Both factors could make homes less affordable for potential buyers. The implementation of RERA interrupted these trends, leading to a slowdown in the growth of both unit size and per-square-foot price. Our empirical results from staggered difference-in-differences regressions, presented in Table 6, are consistent with these observations. As shown in Panel B columns (1) and (2), the implementation of RERA reduces the unit size by 13% for RERA-registered projects with no statically significant changes in per-square-foot prices; while for non-registered projects, both unit size and per-square-foot price reduces, by 6.1% and 8.6% respectively. For both types of projects, houses become more affordable after the implementation of RERA.

We further examine RERA's impact on housing affordability by estimating its heterogeneous effects across different market segments, namely, affordable, mid-tier and luxury sectors. As shown in Table 6 Panel C columns (1) and (2), we find a decrease in both unit size and per-square-foot price for affordable and mid-tier housing sectors, with affordable sector experiencing a larger reduction. The unit size and per-square-foot price for luxury homes, on the other hand, increases. Additionally, without changes in the trend of total housing supply before and after the implementation of RERA, as shown in Figure 5(a), the proportion of affordable apartments increases while the proportion of luxury apartments reduces (Figure 5(b) and (d)). Combining this evidence, the implementation of RERA makes more homes accessible to potential buyers at a lower price.

Prior to RERA, there was a decline in the quality of housing projects indicated by a decrease in project scores, as shown in Figure 4 Panel (c). Project quality deterioration slowed down for RERA-registered projects and our empirical estimates show a 0.79 point increase in project score post-RERA implementation (column 3 of Panel B in Table 6). This increase indicates an enhancement in collateral quality, potentially facilitating greater access to credit for home purchases and consequently improving housing affordability.

We conduct event studies to understand the evolutionary effect of RERA on housing project characterises. The results are presented in Figure 6 and 7 (a). We observe statistically insignificant differences between the pre-RERA estimates to that of the baseline period, which is the quarter before RERA implementation, validating the difference-in-differences research design.

5.4 Delay and Default

Figure 4 Panel (d) shows a trend of increasing delays in the completion of housing projects, which is slowed down post-RERA implementation for the registered projects, while the delays for non-registered projects continued to increase at a faster speed. Column 4 in panel B of Table 6 shows that the estimated delays for RERA-register projects reduces by 5.088 months on average while it increases by 3.667 months. Column 4 in panel C of Table 6 further shows reduced delays in the affordable housing sector and an increase in delays for luxury homes. The dynamic effect of RERA on delays in completion of housing projects by RERA-registration status is presented in Figure 7 (b).

Next, we investigate if the implementation of RERA had any effect on the performance of the mortgages outstanding. The premise is that given the nature of RERA, delays go down and consequently loans are less likely to be in default. Also the transparency of the projects also allows the banks to make a better screening on loans, as well as borrowers to make a more informed purchase choice. The results are reported in Table 7. In column 1 we find that the probability of a loan to be delinquent within 1 year of the disbursal is lower by around 1.3%. In column 2 we find that there is a reduction of 25.8% loans under default for the loans that were disbursed after the implementation of RERA in a state. We also find a reduction in the total number of months for which a loan continued to be in default. In column 4 we also find a reduction in the proportion of loans that were categorized as under default. The results overall show a reduction in delinquency of mortgage loans disbursed after the implementation of RERA.

6 Concluding Remarks

In conclusion, the growing influence of real estate developers on homeownership globally highlights a significant trend with implications for housing accessibility. However, this rise in prominence is accompanied by risks such as project delays, cost overruns, defaults, and fraud. However, empirical evidence linking these risks to the broader real economy remains limited. This study addresses this gap by examining the interplay between regulatory oversight, improved business practices, and their collective impact on shaping the homeownership landscape, focusing on the adoption of RERA in India.

The implementation of RERA in India, designed to safeguard homebuyers and regulate real estate developers, has unique implications. Analyzing data on more than 1 million individuals, our study uncovers significant findings. Firstly, RERA significantly boosts mortgage origination, particularly benefiting first-time borrowers and marginalized groups. This supports the idea that transparency requirements introduced by RERA decrease risks associated with collateral, making banks more inclined to originate mortgages. Secondly, RERA prompts a shift towards more affordable housing, reducing delays, defaults, and enhancing overall market transparency. This not only addresses the uncertainties surrounding the quality of collateral but also leads to a democratization of the homeownership landscape.

The study's empirical strategy, leveraging the staggered implementation of RERA across states, overcomes potential challenges such as broader macroeconomic shocks, time-invariant differences, and confounding events. The robustness of our baseline results to various checks strengthens the credibility of our findings. Moreover, our results show that regulations targeting real estate developers can impact allocative outcomes, mortgage origination, and homeownership across diverse demographic and geographic groups.

Beyond the impact on the mortgage market, RERA induces transformative effects on the housing market itself. It encourages real estate developers to provide more affordable, smaller houses, thereby democratizing access to homeownership. Additionally, RERA significantly reduces delays in project completion, leading to lower delinquency and default rates in mortgage loans. These outcomes collectively underscore the positive influence of regulatory measures in enhancing market transparency, protecting homebuyers' interests, and reshaping the dynamics of the real estate and mortgage markets.

In summary, this study aligns with economic theories highlighting the essential role of market participants in shaping allocative outcomes. Economic models often emphasize the significance of transparent information and reduced uncertainty in fostering efficient markets. Our study provides empirical insights into the regulatory mechanisms influencing real estate developers. This resonates with economic theories that underscore the role of regulatory interventions in correcting information asymmetries, fostering transparency, and mitigating risks. The findings contribute to the broader literature on government interventions in housing markets, demonstrating how regulatory measures, when well-designed, can democratize homeownership, reshape market dynamics, and align with fundamental economic principles. As economies worldwide grapple with the challenges posed by the housing sector, our findings offer valuable insights for policymakers, researchers, and industry stakeholders aiming to strike a balance between promoting market dynamism and safeguarding the interests of homebuyers.

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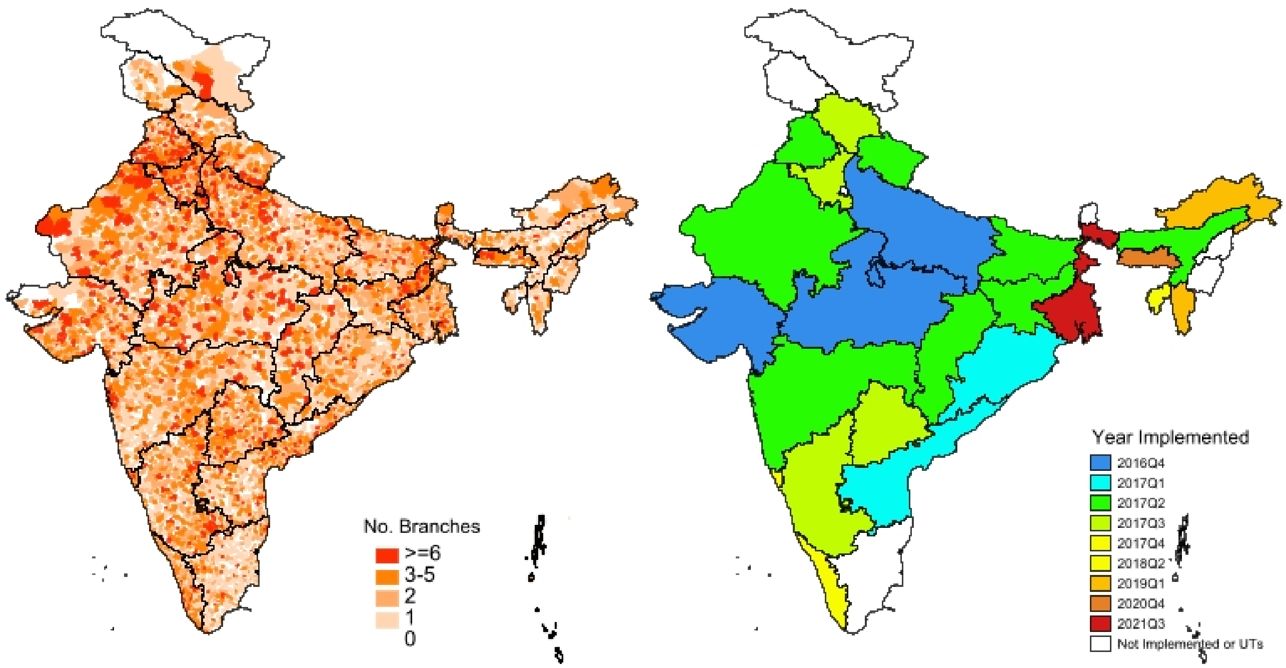
Figure 1: Location of the Bank Branches and Timing of RERA Implementation

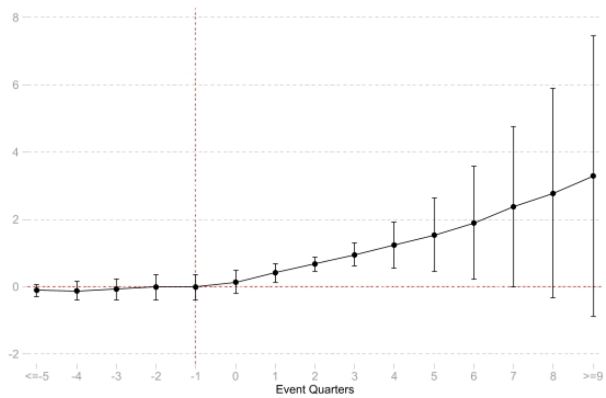


(a) Number of Branches in Each Pincode

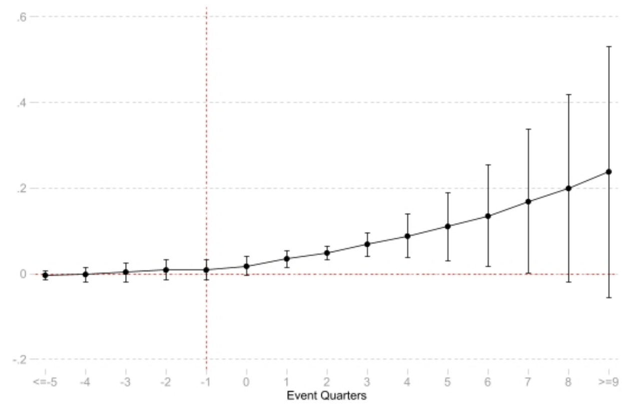
(b) Years Implementing RERA

This table presents the distribution of branches across the various pin codes in India, presented in Panel A. Panel B presents the timing for the implementation of RERA across different states in India.

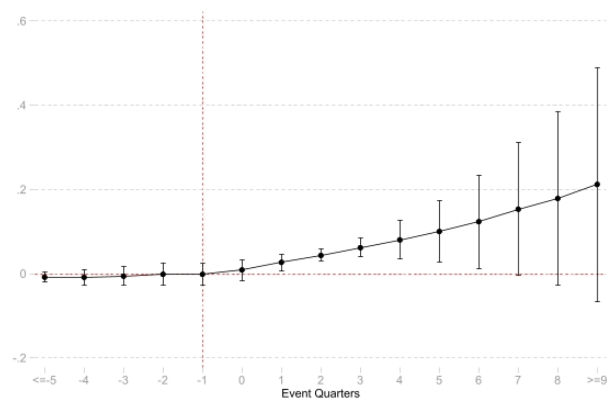
Figure 2: Evolution Lending around RERA Act



(a) Amount of Loan Disbursal



(b) Number of Loan Disbursal



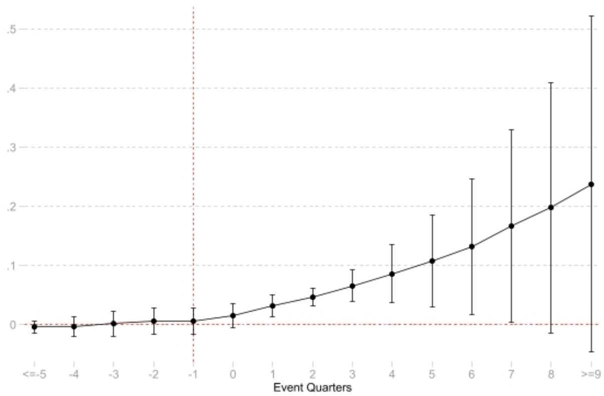
(c) Probability of Loan Disbursal

This figure plots the evolution of the loans disbursed around the passage of Real Estate Regulatory Authority (RERA) Act. We plot $\{\beta_q\}$ from the specification

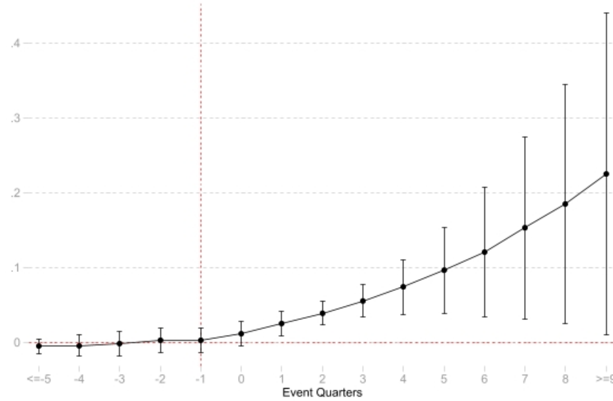
$$Y_{bpq} = \beta_q(<= -5) \cdot Event_{pq(<=-5)} + \sum_{q=-4,q\neq-1}^{8} \beta_q \cdot Event_{pq} + \beta_q(>= 9) \cdot Event_{pq(>=9)} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

Where Y_{bpq} is: the amount of loan disbursal by branch b to a pin code p in the quarter q in panel (a), the number of loan disbursal by branch b to a pin code p in the quarter q in panel (b), the probability of disbursal of a loan by branch b to a pin code p in the quarter q in panel (c), the average size of loan by branch b to a pin code p in the quarter q in panel (c). We include branch × pincode fixed effects $\alpha_{b,p}$ and branch × quarter fixed effects $\alpha_{b,q}$

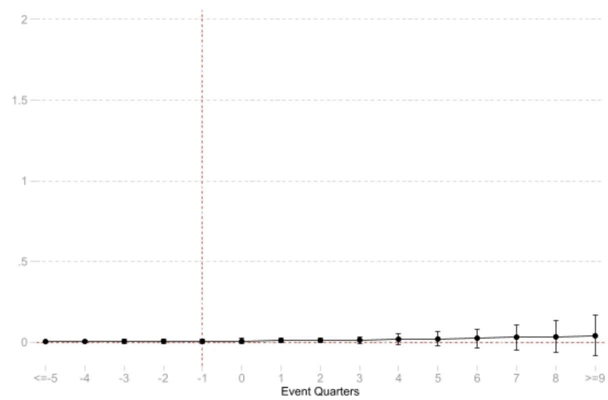
Figure 3: New vs. Existing Borrowers around RERA Act



(a) Total Number of Borrowers



(b) Number of New Borrowers



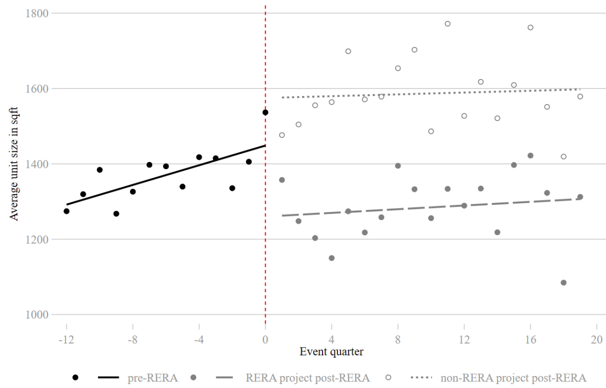
(c) Number of Existing Borrowers

This figure plots the evolution of the number of borrowers around the passage of Real Estate Regulatory Authority (RERA) Act. We plot $\{\beta_q\}$ from the specification

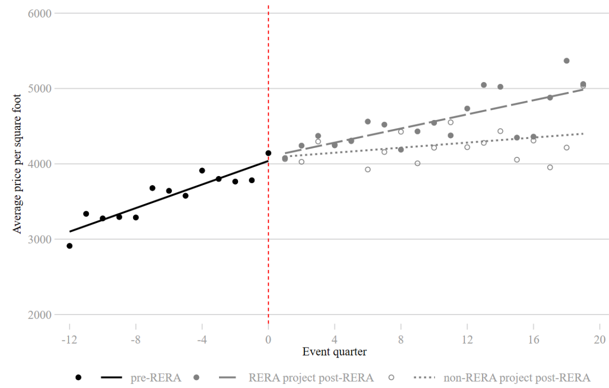
$$Y_{bpq} = \beta_q(<= -5) \cdot Event_{pq(<=-5)} + \sum_{q=-4, q\neq -1}^{8} \beta_q \cdot Event_{pq} + \beta_q(>= 9) \cdot Event_{pq(>=9)} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

Where Y_{bpq} is: the amount of loan disbursal by branch b to a pin code p in the quarter q in panel (a), the number of loan disbursal by branch b to a pin code p in the quarter q in panel (b), the probability of disbursal of a loan by branch b to a pin code p in the quarter q in panel (c), the average size of loan by branch b to a pin code p in the quarter q in panel (c). We include branch × pincode fixed effects $\alpha_{b,p}$ and branch × quarter fixed effects $\alpha_{b,q}$

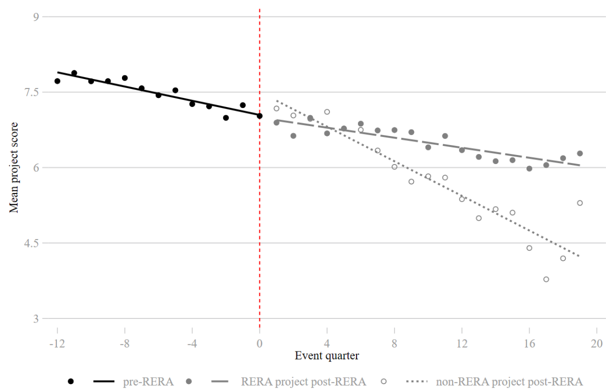
Figure 4: Trends in Housing Project Characteristics by RERA-Registration Status



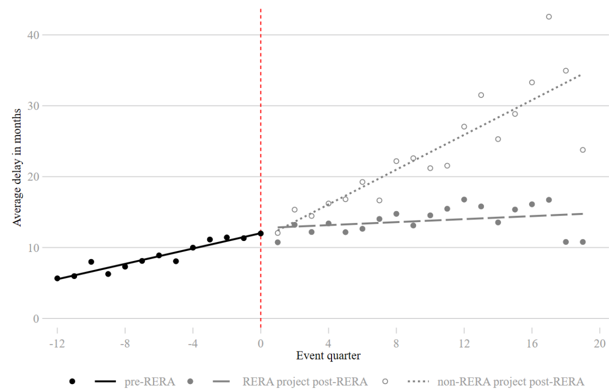
(a) Unit size



(b) Price per square foot



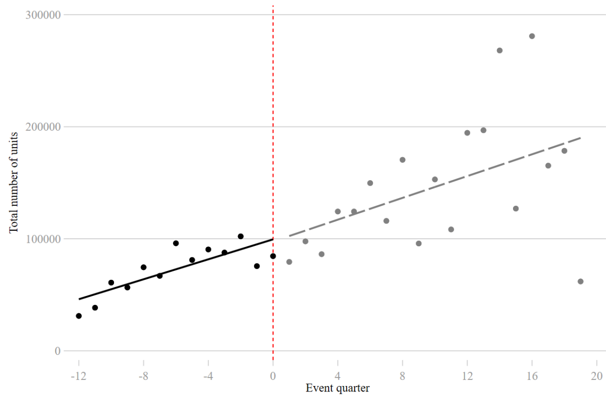
(c) Project Score



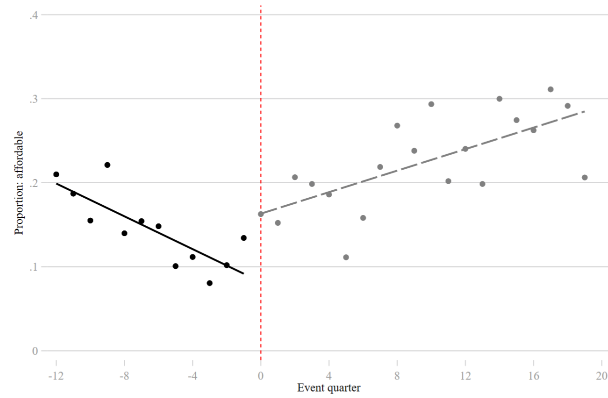
(d) Delay

The figure shows the trends in the mean unit size (panel (a)), price per square foot (panel (b)), project score (panel (c)), delay in month (panel (d)) for all housing development projects in each quarter before the state-level RERA-enactment and for housing projects by RERA-registration status in each quarter after the state-level RERA-enactment.

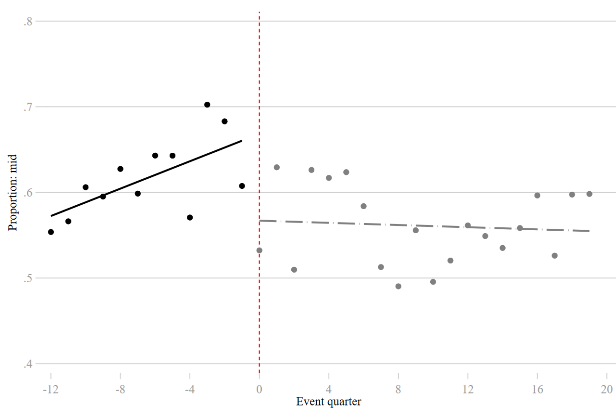
Figure 5: Trends in Various Segments of Housing Market



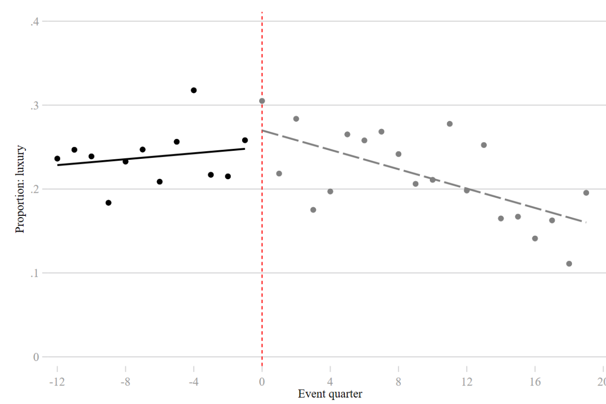
(a) Overall



(b) Affordable Sector



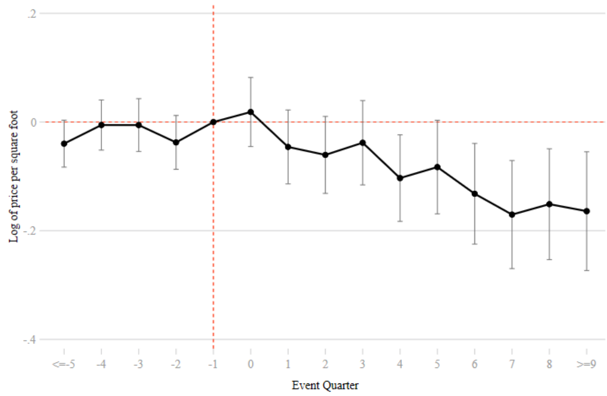
(c) Mid-Tier Sector



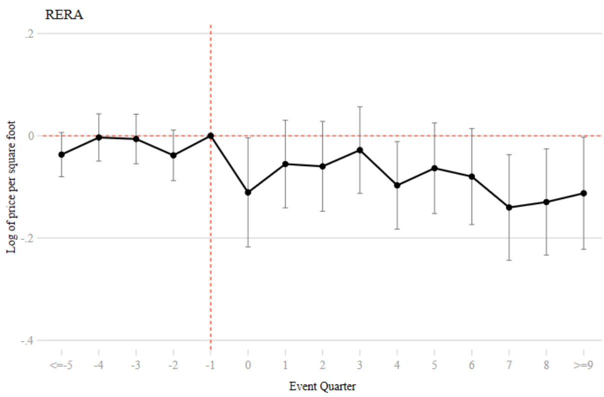
(d) Luxury Sector

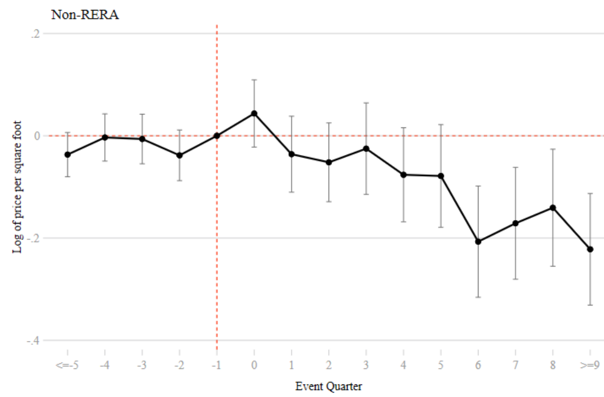
The figure shows the trends the total number of housing units developed (panel (a)) and the proportion of affordable, mid-tier, and luxury housing units (panel (b)-(d)) in each quarter before and after the state-level RERA-enactment.

Figure 6: Evolutionary Effect of RERA on Price Per Square Foot



(a) Overall





(b) RERA

(c) Non-RERA

Panel (a) of this figure plots the evolutionary effect of RERA on price per square foot estiamted using the following specification:

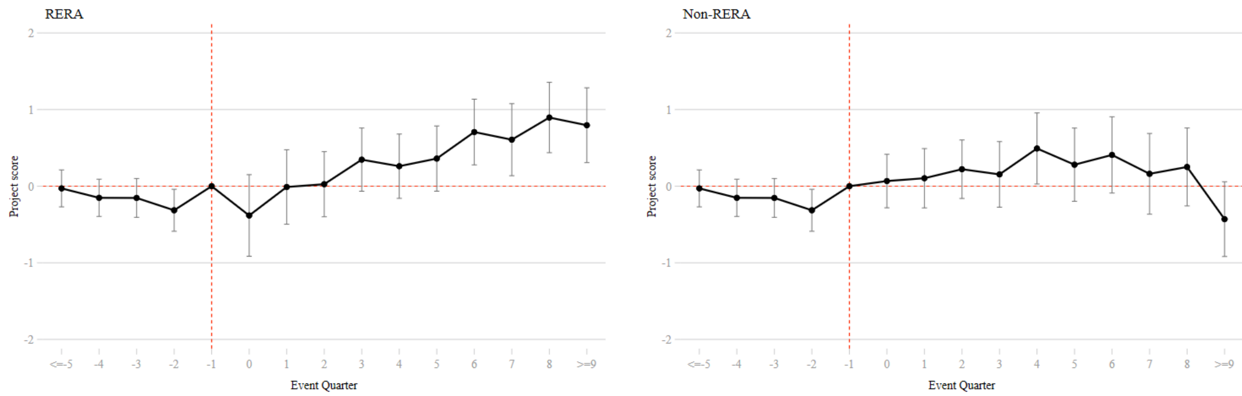
$$Y_{ijq} = \sum_{q=-5}^{-2} \beta_q \cdot Event_{jq} + \sum_{q=0}^{9} \beta_q \cdot Event_{jq} + \alpha_j + \gamma_q + \varepsilon_{ijq}$$

Panel (b) plots the evolutionary effects by registration status estimated from the specification of

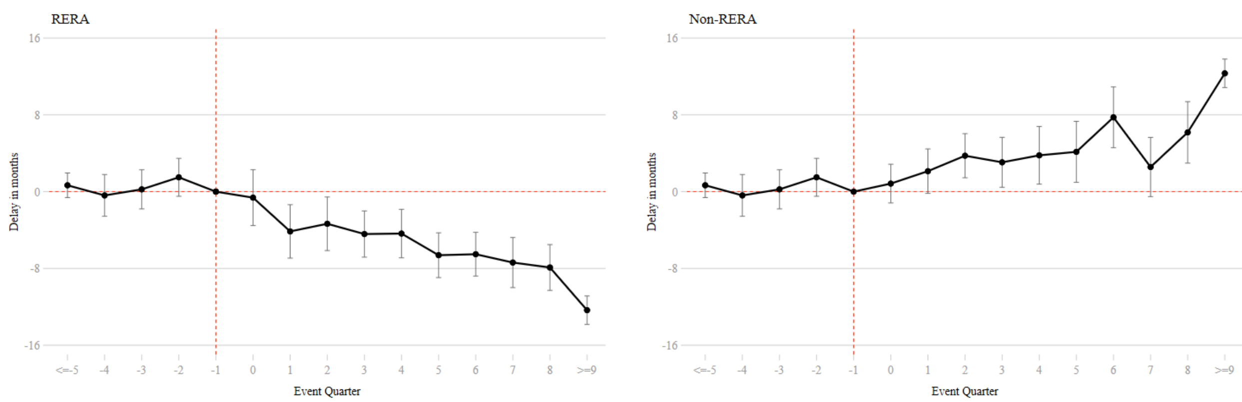
$$Y_{ijq} = \sum_{q=-5}^{-2} \beta_q \cdot Event_{jq} + \sum_{q=0}^{9} \beta_{1q} \cdot Event_{jq} \times R + \sum_{q=0}^{9} \beta_{2q} \cdot Event_{jq} \times NR + \alpha_j + \gamma_q + \varepsilon_{ijq}$$

where Y_{ijq} is the log of price per square foot, project score, and delay in month for project i in city j in the quarter q. We include city fixed effects α_j and year-quarter fixed effects γ_q.

Figure 7: Evolutionary Effect of RERA on Housing Project Characteristics



(a) Project score



(b) Delay

This figure plots the evolutionary effect of RERA on housing project characteristics by registration status estimated from the specification

$$Y_{ijq} = \sum_{q=-5}^{-2} \beta_q \cdot Event_{jq} + \sum_{q=0}^{9} \beta_{1q} \cdot Event_{jq} \times R + \sum_{q=0}^{9} \beta_{2q} \cdot Event_{jq} \times NR + \alpha_j + \gamma_q + \varepsilon_{ijq}$$

where Y_{ijq} is project score (panel (a)) and delay in month (panel (b)) for project i in city j in the quarter q. We include city fixed effects α_j and year-quarter fixed effects γ_q.

Table 1: Summary Statistics

Variables	(1) N	(2) Mean	(3) Std. Dev.	(4) Median
	Panel A Branch×Pin level			
Loan Amount	3,003,748	712,824.60	3,267,085.30	0.00
Loan Number	3,003,748	0.36	1.57	0.00
No. of Borrowers	3,003,748	0.35	1.52	0.00
No. of New Borrowers	3,003,748	0.26	1.26	0.00
Loan Size	474,621	2,114,940.24	1,338,693.37	1,800,000.00
Prob. of Getting Loan	3,003,748	0.16	0.36	0.00
	Panel B Branch×State level			
No. of Pin	148,124	1.07	2.41	0.00
No. of New Pin	148,124	0.00	0.06	0.00
No. of Existing Pin	148,124	1.07	2.40	0.00
	Panel C Loan Level			
Interest Rate	962,763	8.69	1.21	8.75
Loan Amount	950,154	1,904,126.70	1,301,430.76	1,600,000.00
Square Footage	944,246	885.80	767.56	824.37
Purchase Cost	943,606	3,238,181.82	2,547,394.55	2,775,000.00
LTV	910,014	56.26	23.50	59.34
Price\Sq. Feet	927,929	166,166.46	3,461,991.35	3,742.68
Loan\Sq. Feet	932,154	117,914.30	2,125,319.57	2,388.80
Female borrower=1	962,763	0.27	0.44	0.00
New borrower=1	962,763	0.82	0.38	1.00
Backward Caste	962,763	0.05	0.22	0.00
	Panel D Project level			
Number of Units	13,357	297.97	490.51	134.00
Project Segment (Affordable=1)	13,357	0.21	0.41	0.00
Project Segment (Luxury=1)	13,357	0.21	0.41	0.00
Project Score	13,357	6.64	2.07	6.90
Delay in Months	13,357	14.41	17.59	8.00
Square Footage	13,357	1,378.14	885.13	1,200.00
Price\Sq. Feet	13,357	4,183.88	2,107.49	3,700.00

This table reports the summary statistics of the primary variable of interest. Panel A reports the summary with the data granularity being branch× pin of collateral×quarter. The granularity of Panel B being branch× state of collateral×quarter. Panel C is the analysis at the loan level. Panel D provides summary statistics of the data on real estate development projects.

Table 2: Effect of RERA on Mortgage Lending

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Var.	Binary loan = 1		Amount of Loan		Number of Loan		Average Loan Size	
Post	0.008***	0.008***	0.152***	0.152***	0.038***	0.038***	-0.010	-0.092
	(0.001)	(0.001)	(0.023)	(0.023)	(0.006)	(0.006)	(0.036)	(0.079)
Observations	3,003,748	3,003,748	3,003,748	3,003,748	3,003,748	3,003,748	378,647	281,399
R-squared	0.180	0.375	0.181	0.387	0.194	0.434	0.499	0.638
Branch*Pin FE	No	Yes	No	Yes	No	Yes	No	Yes
Pin FE	Yes	No	Yes	No	Yes	No	Yes	No
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the results from the following regression specification:

$$Y_{bpq} = \beta_q \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

Where Y_{bpq} is: the probability of receiving a loan from branch b in a pin code p in the quarter q in panel in columns 1 and 2; the amount of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in columns 3 and 4; the number of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in columns 5 and 6; the average size of a loan from branch b in a pin code p in the quarter q in panel in columns 7 and 8. *Treat* is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ representing branch×pin fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. Robust standard errors clustered by state are reported in parenthesis.

Table 3: Effect of RERA on Mortgage Lending – New vs Existing Borrowers

Dep. Var.	(1) Number of New Borrowers	(2) Number of Existing Borrowers	(3) Amount Loan to New Borrowers	(4) Amount Loan to Existing Borrowers	(5) Number of Pincodes
Post	0.024***	0.009	0.088***	0.062*	0.061*
	(0.003)	(0.001)	(0.020)	(0.035)	(0.003)
Observations	3,003,748	3,003,748	3,003,748	3,003,746	836,247
R-squared	0.528	0.466	0.376	0.364	0.768
Branch*Pin FE	Yes	Yes	Yes	Yes	No
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes
Branch*State FE	No	No	No	No	Yes

Columns 1 to 4 of this table report the results from the following regression specification:

$$Y_{bpq} = \beta_q \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

where Y_{bpq} include (1) the number of new borrowers (column 1), (2) the number of existing borrowers (column 2), (3) the amount of loans to new borrowers (column 3), (4) the amount of loans to existing borrowers from branch b in a pincode p in the quarter q (column 4). The regression specifications include $\alpha_{b,p}$ for branch×pin fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. Column 5 estimate the following regression:

$$Y_{bsq} = \beta_q \cdot Post_{s(b)q} + \alpha_{b,s} + \alpha_{b,q} + \varepsilon_{bsq}$$

where Y_{bpq} is the number of pin condes that receive the loans from branch b in a state s in the quarter q. The regression specifications include $\alpha_{b,s}$ for branch×state fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects.
In columns 1 to 4 the granularity of the specification is at branch ×pin × quarter level. In column 5 the granularity of the specification is at branch ×state × quarter level. Robust standard errors clustered by state are reported in parenthesis.

Table 4: Effect of RERA on Mortgage Lending – Geographic Disparity

	(1)	(2)	(3)	(4)
Dep. Var.	Binary loan = 1	Amount of Loan	Number of Loan	Number of New Borrowers
Post*Tier 3	0.008***	0.157***	0.039***	0.024***
	(0.002)	(0.036)	(0.010)	(0.008)
Post*Tier 2	0.002	0.032	0.012	0.009
	(0.004)	(0.087)	(0.026)	(0.023)
Post*Tier 1	-0.006**	-0.129**	-0.037**	-0.020
	(0.002)	(0.049)	(0.015)	(0.012)
Observations	3,003,748	3,003,748	3,003,748	3,003,748
R-squared	0.375	0.387	0.434	0.416
Branch*Pin FE	Yes	Yes	Yes	Yes
Branch*YQ FE	Yes	Yes	Yes	Yes

This table reports the results from the following regression specification:

$$Y_{bpq} = \beta_1 \cdot Post_{p(b)q} \times Tier3 + \beta_2 \cdot Post_{p(b)q} \times Tier2 + \beta_3 \cdot Post_{p(b)q} \times Tier1 + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

where Y_{bpq} includes (1) the probability of receiving a loan from branch b in a pin code p in the quarter q in panel in column 1; (2) the amount of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 2; (3) the number of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 3; (4) the number of new borrowers who receive a loan from branch b in a pin code p in the quarter q in panel in column 4. *reat* is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ branch×pin fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. Robust standard errors clustered by state are reported in parenthesis.

Table 5: Effect of RERA on Loan Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All		New Borrowers		Female		Income	
Dep. Var.	LTV	Interest Rate	LTV	Interest Rate	LTV	Interest Rate	LTV	Interest Rate
Post	3.959*	0.058						
	(2.072)	(0.066)						
Post*Group			3.050***	-0.041*	0.189	-0.039**	0.499**	-0.077***
			(0.416)	(0.022)	(0.315)	(0.014)	(0.214)	(0.016)
Observations	902,997	962,763	872,438	931,369	871,027	928,713	441,778	475,505
R-squared	0.355	0.510	0.378	0.528	0.462	0.524	0.407	0.536
Branch*pin FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State * Group FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State* YQ FE	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Columns 1-2 in this table reports the results from the following regresion specification:

$$Y_{bpq} = \beta_q \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

Columns 3-8 in this table reports the results from the following regression specification separately for various groups:

$$Y_{bpq} = \beta_1 \cdot Post_{p(b)q} \times Group + \beta_2 \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \alpha_{s,q} + \alpha_{s,g} + \varepsilon_{bpq}$$

Where Y_{bpq} is the loan to value (LTV) and interest rate of a loan from branch b in a pin code p in the quarter q. we study the effect for all borrowers in columns 1 and 2. The binary variable *Group* takes 1 when a borrower is first time borrower in columns 3 to 4, takes 1 when a borrower is female in columns 5 to 6 and takes 1 when the borrower's income is below ₹200,000. *Post* is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ for branch×pin fixed effects, $\alpha_{b,q}$ for branch × quarter fixed effects, $\alpha_{s,q}$ for state × quarter fixed effects, and $\alpha_{s,g}$ for state × group fixed effects. The granularity of the specification is at the loan level. Robust standard errors clustered by state are reported in parenthesis.

Table 6: Effect of RERA on Housing Project Characteristics

Dep. Var.	(1) Ln (size)	(2) Ln(price\sqft)	(3) Score	(4) Delay
Panel A Overall effect				
Post	-0.082***	-0.064**	0.224**	1.015
	(0.028)	(0.025)	(0.107)	(0.895)
Panel B Effect by RERA-registration status				
Post*Non-RERA	-0.061**	-0.086***	-0.023	3.667***
	(0.028)	(0.025)	(0.110)	(0.919)
Post*RERA	-0.130***	-0.013	0.791***	-5.088***
	(0.030)	(0.026)	(0.114)	(0.969)
Panel C: Effect by market segment				
Post*Affordable	-0.555***	-0.437***	-0.082	-2.095**
	(0.028)	(0.025)	(0.116)	(0.953)
Post*Mid	-0.143***	-0.086***	0.725***	-0.422
	(0.027)	(0.024)	(0.108)	(0.906)
Post*Luxury	0.475***	0.325***	-0.481***	6.717***
	(0.029)	(0.026)	(0.114)	(1.030)
Observations	13,357	13,357	13,357	13,357
City FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes

Panel A of this table reports the overall effect estimated from the following specification:

$$Y_{ijq} = \beta \cdot Post_{ijq} + \alpha_j + \gamma_q + \varepsilon_{ijq}$$

Panel B of this table reports the effects by RERA-registration status using the following specification:

$$Y_{bpq} = \beta_1 \cdot Post_{ijq} \times R + \beta_2 \cdot Post_{ijq} \times NR + \alpha_j + \gamma_q + \varepsilon_{ijq}$$

and Panel C of this table reports the effects by housing segment estimated using:

$$Y_{bpq} = \beta_1 \cdot Post_{ijq} \times Seg1 + \beta_2 \cdot Post_{ijq} \times Seg2 + \beta_3 \cdot Post_{ijq} \times Seg3 + \alpha_j + \gamma_q + \varepsilon_{ijq}$$

where Y_{ijq} is the log of unit size, log of price per square foot, project score, and delay in months for columns (1) to (4), respectively. *Post* is a binary variable that takes the value of 1 if project i in city j is launched after the state-level enactment of RERA. All regressions include city fixed effects α_j and quarter fixed effects γ_q. Robust standard errors are reported in parenthesis.

Table 7: Effect of RERA on Loan Performances

	(1)	(2)	(3)	(4)
	Loan Level			Branch*Pin
Dep. Var.	Default=1	ln(Amount Loan in Default)	ln(Number of Default Months)	Proportion of Loan in Default
Post	-0.013***	-0.258***	-0.067***	-0.019***
	(0.003)	(0.054)	(0.013)	(0.006)
Observations	963,320	961,112	961,112	281,399
R-squared	0.278	0.276	0.326	0.539
Branch*Pin FE	Yes	Yes	Yes	Yes
Branch*YQ FE	Yes	Yes	Yes	Yes
SE Cluster	State	State	State	State

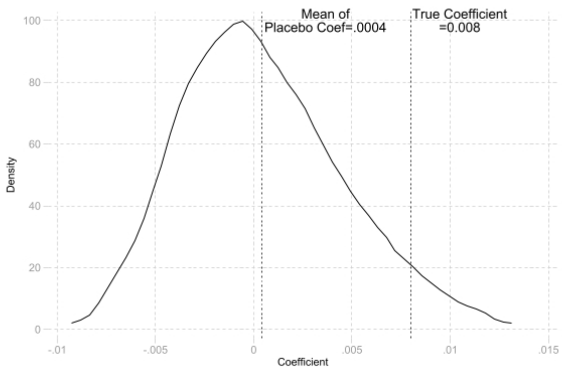
This table reports the effect of RERA on loan performances measured by the probability to default within one year after loan sanctioning ("*Default=1*", column 1), amount of loan under default within one year after loan sanctioning ("*ln(Amount Loan in Default)*", column 2), number of months in default for each loan within one year after loan sanctioning ("*ln(Number of Default Months)*", column 3), and the proportion of loan under default within one year among the loan sanctioned by a branch b to pincode p in quarter t ("*Proportion of Loan in Default*", column 4). The coefficients are estimated from the following regression specification:

$$Y_{bpq} = \beta_q \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

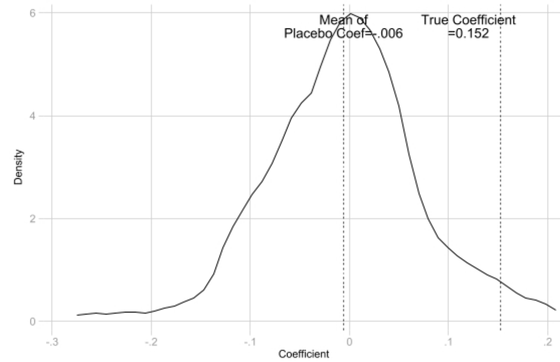
$Post_{p(b)q}$ is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ branch×pin fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. Robust standard errors clustered by state are reported in parenthesis.

Internet Appendix

Figure A1: Placebo Test with Random Timing of RERA Implementation

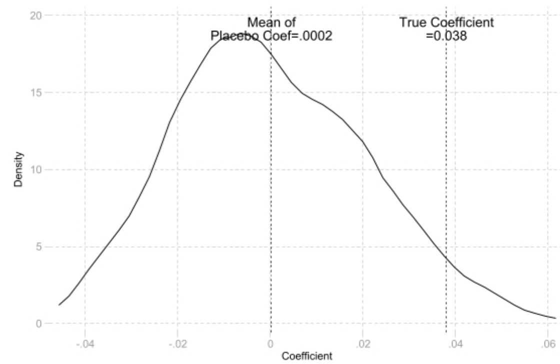


(a) Binary loan = 1

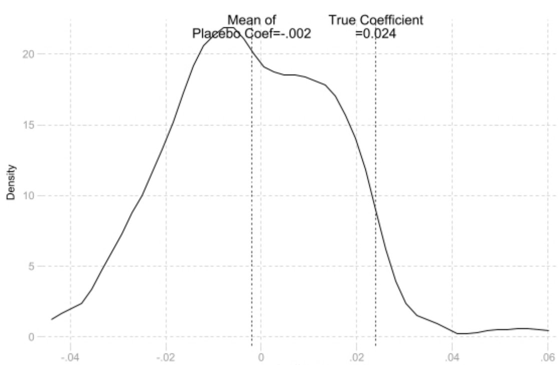


(b) Amount of Loan

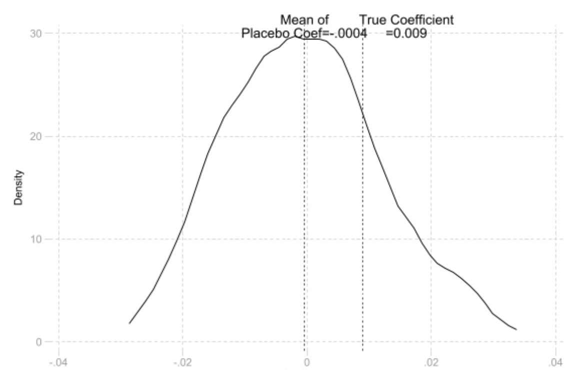
(c) Number of Loan



(d) Number of Borrower



(e) Number of New Borrower



(f) Number of Existing Borrower

This figure plots the coefficients of the placebo tests. We randomly assign a quarter of policy implementation for each state and rerun the baseline specifcation below:

$$Y_{bpq} = \beta_q \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

We plot the coefficient β_q in the figures for the dependent variables including *Binary loan* = 1, *Amount of Loan*, *Number of Loan*, *Number of Borrowers*, *Number of New Borrowers* and *Number Existing Borrowers*. The last five variables are in log term.

Table A1: Effect of RERA on Mortgage Lending – Interaction Weighted Estimator

Dep. Var.	(1) Binary loan = 1	(2) Amount of Loan	(3) Number of Loan	(4) Number of Borrower	(5) Number of New Borrower	(6) Number of Exsiting Borrower
Post	0.009***	0.141***	0.010***	0.010***	0.007***	0.003**
	(0.003)	(0.049)	(0.003)	(0.003)	(0.003)	(0.001)
Observations	1,897,104	1,897,104	1,897,104	1,897,104	1,897,104	1,897,104
R-squared	0.412	0.426	0.593	0.597	0.564	0.476
Branch*Pin FE	Yes	Yes	Yes	Yes	Yes	Yes
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes	Yes
SE Cluster	State	State	State	State	State	State

This table rerun the results reported in Tables 2 and 3 using the Interaction Weighted estimator as in Sun and Abraham (2021) to address the estimation bias of staggered DID. Robust standard errors clustered by state are reported in parenthesis.

Table A2: Effect of RERA on Mortgage Lending – Callaway & Sant' Anna (2021)

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Binary loan = 1	Amount of Loan	Number of Loan	Number of Borrower	Number of New Borrower	Number of Exsiting Borrower
Post	0.020***	0.302***	0.026***	0.026***	0.017***	0.015***
	(0.007)	(0.107)	(0.007)	(0.007)	(0.005)	(0.004)
Observations	1,920,348	1,920,348	1,920,348	1,920,348	1,920,348	1,920,348
Branch*Pin FE	Yes	Yes	Yes	Yes	Yes	Yes
YQ FE	Yes	Yes	Yes	Yes	Yes	Yes
SE Cluster	State	State	State	State	State	State

This table rerun the results reported in Tables 2 and 3 using the DID with multiple periods estimator developed in Callaway and Sant'Anna (2021) to address the estimation bias of staggered DID. Robust standard errors clustered by state are reported in parenthesis.

Table A3: Effect of RERA on Mortgage Lending – Poisson

	(1)	(2)	(3)	(4)	(5)
Data Structure		Branch-pin-YQ			Branch-State-YQ
Dep. Var.	Amount of Loans	Number of Loans	Number of New Borrowers	Number of Borrowes	Number of Pins
treat	0.157***	0.169***	0.143***	0.162***	0.137***
	(0.022)	(0.024)	(0.036)	(0.045)	(0.024)
Observations	2,514,548	2,514,548	2,166,480	2,514,548	120,042
R-squared	0.66	0.56	0.53	0.56	0.66
Branch*Pin FE	Yes	Yes	Yes	Yes	No
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes
Branch*State FE	Yes	Yes	Yes	Yes	Yes

This table rerun the results reported in Tables 2 and 3 using poisson regression. We use the following regression specification:

$$Y_{bpq} = \beta_q \cdot treat_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

Where Y_{bpq} is: the probability of receiving a loan from branch b in a pin code p in the quarter q in panel in columns 1 and 2; the amount of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in columns 3 and 4; the number of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in columns 5 and 6; the average size of a loan from branch b in a pin code p in the quarter q in panel in columns 7 and 8. *treat* is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ representing branch×pin fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. Robust standard errors clustered by state are reported in parenthesis. Robust standard errors clustered by state are reported in parenthesis.

Table A4: Effect of RERA on Mortgage Lending – Branch State Quarter

Dep. Var.	(1) Binary loan $=1$	(2)	(3) Amount of Loan	(4)	(5) Number of Loan	(6)	(5) Average Loan Size	(6)
Post	0.022***	0.022***	0.423***	0.423***	0.108**	0.108**	-0.023	0.001
	(0.005)	(0.005)	(0.091)	(0.091)	(0.027)	(0.027)	(0.048)	(0.032)
Observations	148,124	148,124	148,124	148,124	148,124	148,124	6,398	12,195
R-squared	0.797	0.302	0.814	0.299	0.855	0.297	0.740	0.583
Branch*Pin FE	Yes	No	Yes	No	Yes	No	Yes	No
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	No	Yes	No	Yes	No	Yes	No	Yes

This table rerun the results reported in Tables 2 and 3 using data at branch × state × quarter level. We use the following regression specification:

$$Y_{bsq} = \beta_q \cdot Post_{s(b)q} + \alpha_{b,s} + \alpha_{b,q} + \varepsilon_{bsq}$$

Where Y_{bsq} is: the amount of total borrowers receiving a loan from branch b in a state s in the quarter q in panel in column 1; the number of loans from branch b in a state s in the quarter q in panel in column 2; the number of new borrowers receiving a loan from branch b in a state s in the quarter q in panel in column 3; the number of total borrowers receiving a loan from branch b in a state s in the quarter q in panel in column 4; the number of pincodes receiving a loan from branch b in a state s in the quarter q in panel in column 5. *Post* is the binary variable that takes 1 if a state s belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,s}$ representing branch×state fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. Robust standard errors clustered by state are reported in parenthesis.

Table A5: Balance Test

	(1)	(2)	(3)	(4)	(5)
Dep. Var.			Post = 1		
ln(GDP per Capita)	-0.564				-0.548
	(0.627)				(0.593)
ln(GVA Construction)		0.481			0.421
		(0.349)			(0.278)
ln(HP Index)			0.036		0.041
			(0.073)		(0.076)
ln(Credit Scheduled Commercial Bank)				-0.512	-0.313
				(0.316)	(0.270)
Observations	196	196	196	196	196
R-squared	0.791	0.795	0.790	0.797	0.802
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes

This table report the association between the timing of RERA implementation and the variables representing the economic development of each state. We run the following specification:

$$Post_{s,t} = X_{s,t} + \alpha_s + \alpha_t + \epsilon_{s,t}$$

where $Post_{s,t}$ is the binary variable that take 1 if a state s is treated in year t. $X_{s,t}$ includes GDP per capita, Gross value addded for the construction sector, the CPI of housing, and the credit issued by scheduled commercial banks. In columns 1 to 5, the sample period is from 2015 to 2019. Robust standard errors clustered by state are reported in parenthesis.

Table A6: Baseline Results with State Year-Level Controls

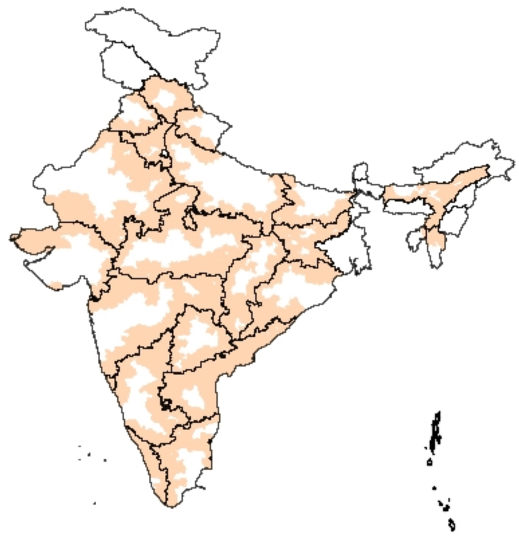
Dep. Var.	(1) Binary loan = 1	(2) Amount of Loan	(3) Number of Loan	(4) Number of Borrower	(5) Number of New Borrower	(6) Number of Exsiting Borrower
Post	0.007***	0.126***	0.030***	0.030***	0.018*	0.005
	(0.002)	(0.039)	(0.010)	(0.010)	(0.009)	(0.008)
Observations	3,003,748	3,003,748	3,003,748	3,003,748	3,003,748	3,003,748
R-squared	0.375	0.387	0.434	0.435	0.416	0.390
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Branch*Pin FE	Yes	Yes	Yes	Yes	Yes	Yes
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes	Yes

In this table, we rerun the baseline results reported in Tables 2 and 3 by including the variables representing the economic development of each state. We use the following regression specification:

$$Y_{bpq} = \beta_q \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + X_{sq} + \varepsilon_{bpq}$$

Where Y_{bpq} is: the probability of receiving a loan from branch b in a pin code p in the quarter q in panel in column 1; the amount of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 2; the number of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 3; the average size of a loan from branch b in a pin code p in the quarter q in panel in column 4; the number of new borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 5; the number of existing borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 6. *Post* is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ representing branch×pin fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. The control variables denoted by X_{sq} include GDP per capita, Gross value addded for the construction sector, the CPI of housing, and the credit issued by scheduled commercial banks Credit Scheduled Commercial Bank. Robust standard errors clustered by state are reported in parenthesis.

Figure A2: Districts on State Borders Included in the Sample



The map visualizes the districts on the state borders included in the regressions reported in Table A7.

Table A7: Baseline Results Keeping Border Districts

Dep. Var.	(1) Binary loan = 1	(2) Amount of Loan	(3) Number of Loan	(4) Number of Borrower	(5) Number of New Borrower	(6) Number of Exsiting Borrower
Post	0.008***	0.153***	0.039***	0.039***	0.024***	0.016
	(0.002)	(0.031)	(0.008)	(0.008)	(0.007)	(0.010)
Observations	1,597,159	1,597,159	1,597,159	1,597,159	1,597,159	1,597,159
R-squared	0.400	0.412	0.458	0.459	0.439	0.408
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Branch*Pin FE	Yes	Yes	Yes	Yes	Yes	Yes
Branch*YQ FE	Yes	Yes	Yes	Yes	Yes	Yes

This table rerun the results reported in Tables 2 and 3 by restricting the sample to bordering areas as shown in figure A2. We use the following regression specification:

$$Y_{bpq} = \beta_q \cdot Post_{p(b)q} + \alpha_{b,p} + \alpha_{b,q} + \varepsilon_{bpq}$$

Where Y_{bpq} is: the probability of receiving a loan from branch b in a pin code p in the quarter q in panel in column 1; the amount of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 2; the number of total borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 3; the average size of a loan from branch b in a pin code p in the quarter q in panel in column 4; the number of new borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 5; the number of existing borrowers receiving a loan from branch b in a pin code p in the quarter q in panel in column 6. *treat* is the binary variable that takes 1 if a postcode p belongs to the state after the adherence to RERA, from a branch b. The regression specifications include $\alpha_{b,p}$ representing branch×pin fixed effects and $\alpha_{b,q}$ is the branch × quarter fixed effects. Robust standard errors clustered by state are reported in parenthesis.