

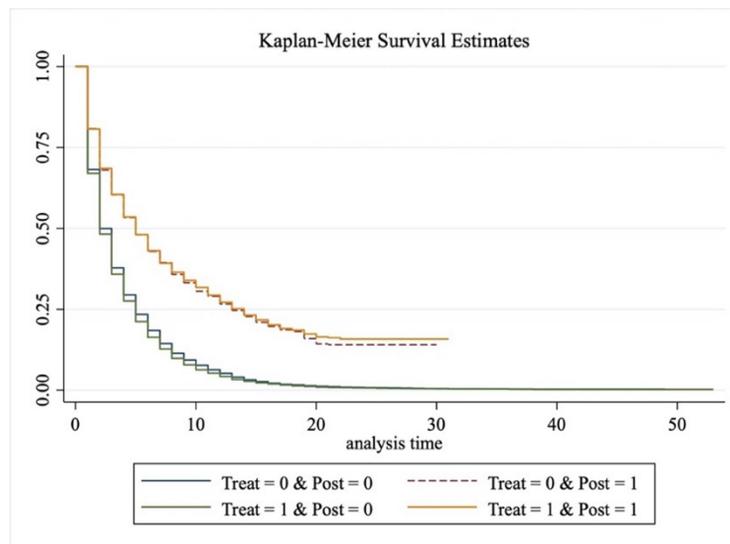
# MARKET EFFECTS OF GOVERNMENT REFERENCE PRICE FOR RESALE HOUSING TRANSACTIONS

Yanjiang ZHANG, Danni XING, Xiaofen YU, Xiao YU

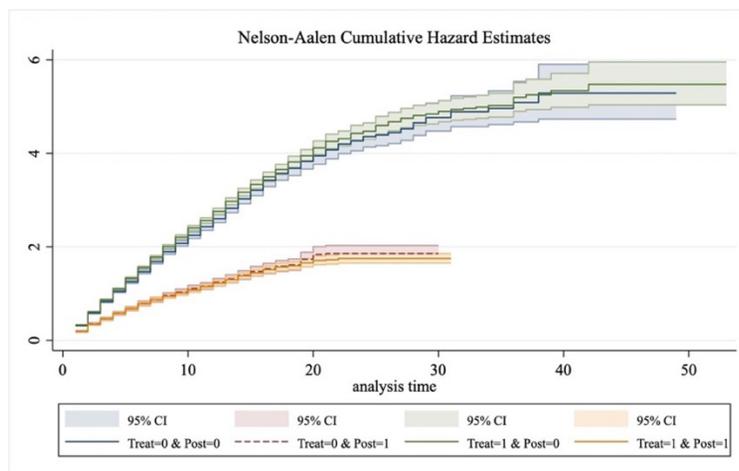
International Journal of Strategic Property Management

<https://doi.org/10.3846/ijspm.2026.25135>

## 1. Additional robustness checks



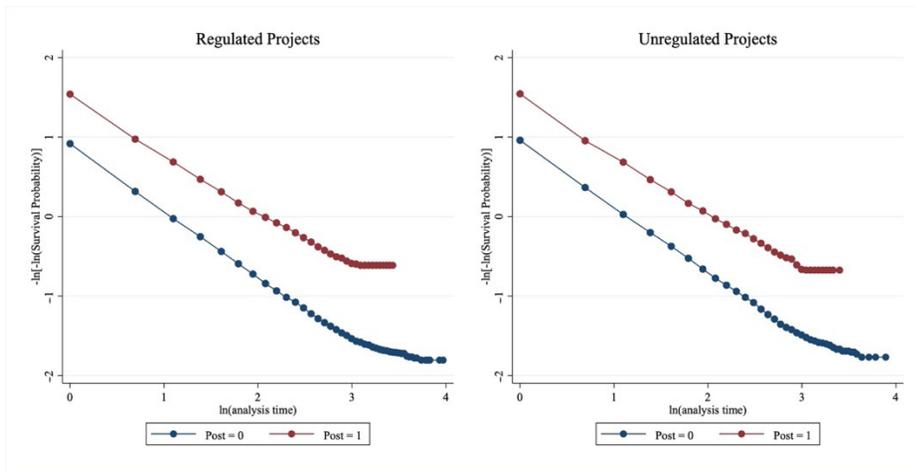
(a) Kaplan-Meier survival estimates



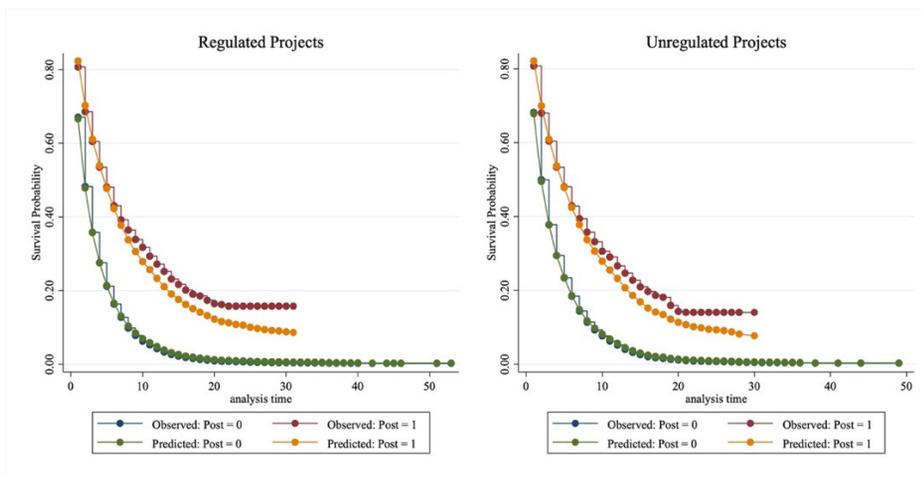
(b) Nelson-Aalen cumulative hazards estimates

Note: This figure plots Kaplan-Meier survival estimates and Nelson-Aalen cumulative hazards estimates in Panel (a) and (b), respectively. Both estimates apply to four groups of samples, that is, Treat = 0 & Post = 0, Treat = 0 & Post = 1, Treat = 1 & Post = 0, Treat = 1 & Post = 1, respectively.

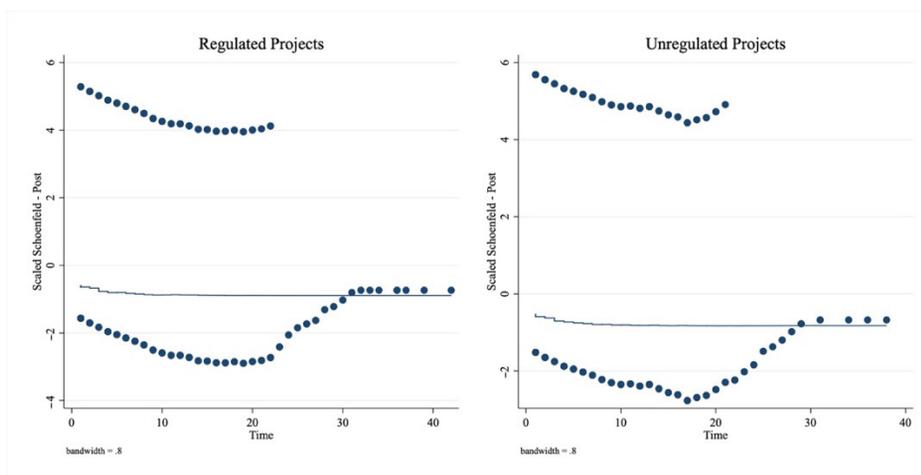
Figure S1. Survival analysis



(a) Log-log graph



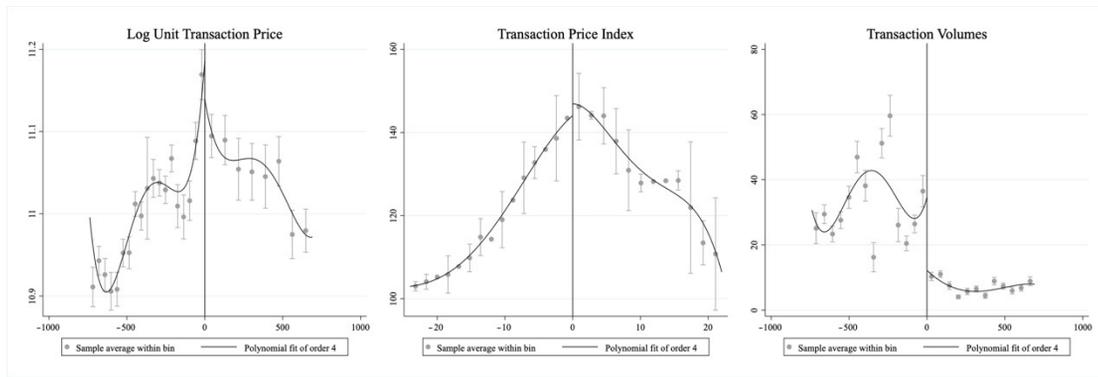
(b) Observe-predict graph



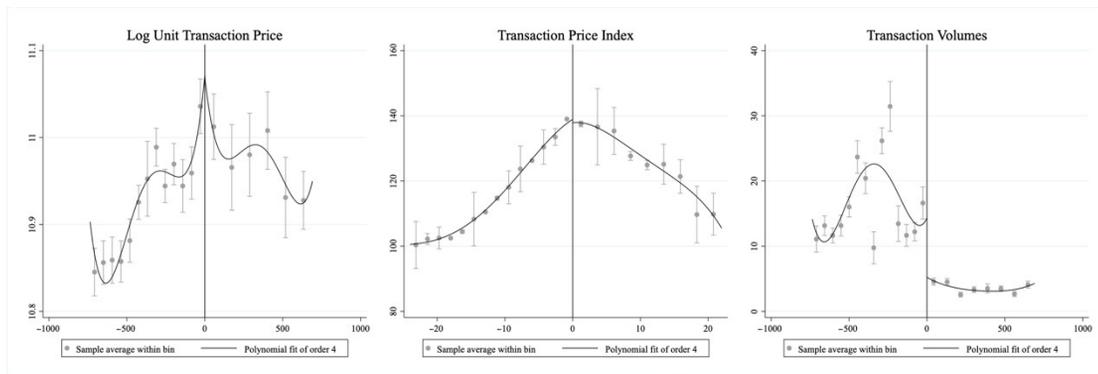
(c) Test of PH assumption

Note: This figure plots estimates for examining the underlying assumptions of the Cox proportional hazards model. The estimates apply to regulated project samples and unregulated project samples, respectively. Panel (a) shows the log-log graph of observations before and after the policy, Panel (b) displays the observed versus predicted graph of observations before and after the policy, and Panel (c) presents the test of proportional hazards (PH) assumption.

Figure S2. Proportional risk model setting test



(a) Regulated project samples



(b) Unregulated project samples

Note: This figure shows fitted graphs for RDIT function on trading behavior. The independent variable in column (1) is log unit transaction price (daily frequency), in column (2) is transaction price index (monthly frequency), in column (3) is transaction volumes (daily frequency). For each set of figures, there are regulated and unregulated project samples, corresponding to Panel (a) and (b), respectively.

Figure S3. RDIT regression function fit on trading behavior

## 2. Address autoregression and non-stationarity in the RDIT estimates

We estimate the RDIT model using a nonparametric quadratic local polynomial fitting with heteroskedasticity-robust standard errors. A triangular kernel is applied, and the optimal bandwidth is selected by minimizing mean squared error. We control for housing attributes and computed heteroskedasticity-robust standard errors using the “rrobust” command in Stata. This section outlines our approach to addressing autoregression and non-stationarity in the RDIT estimates.

### (1) The problem of autoregression in RDIT

First, we examine the model when the dependent variable is the logarithm of housing transaction prices. Here, we adopt individual-level housing transaction data and each observation represents a specific housing unit at a given point in time, resulting in a pooled cross-sectional dataset rather than a conventional time series. Standard errors are clustered at the residential project level to account for intra-group correlation. To further account for potential time trends, we also try to introduce time trend variables (i.e.,  $(T_t - T_t^*) \cdot D_t$ ) and fit both linear and quadratic poly-

nomials in the regressions. The results remain insignificant (Table S1), suggesting that the RP policy has no significant impact on transaction prices in the short term and supporting the robustness of our estimates.

Second, we have addressed potential autocorrelation in the regressions using time-series data and the dependent variables are the transaction price index and transaction volume, respectively. While heteroskedasticity-robust standard errors are used in the baseline models, these variables are aggregated over time and are therefore more susceptible to time series correlation. We conduct formal tests for autocorrelation and apply the necessary adjustments, which are outlined as follows.

In the first step, we test for autocorrelation in the dependent variables. The Ljung–Box Q statistics are significant across multiple lags for both the transaction price index and transaction volume (Table S2), indicating the existence of autocorrelation. According to Hausman & Rapson (2018)<sup>1</sup>, the above results suggest that lagged terms should be included in the model.

<sup>1</sup> Hausman, C., & Rapson, D. S. (2018). Regression discontinuity in time: Considerations for empirical applications. *Annual Review of Resource Economics*, 10, 533–552.

**Table S1.** RDiT on transaction prices

Indep. Var.	(1)	(2)	(3)	(4)
	Log unit transaction price			
	Linear fit	Quadratic polynomial fit	Linear fit with time trend	Quadratic fit with time trend
Panel A. Subsamples of regulated projects				
Coefficient	-0.030 (0.04)	-0.037 (0.04)	-0.030 (0.04)	-0.037 (0.04)
Bandwidth	96.316	197.308	96.316	197.308
Observations	27,297	27,297	27,297	27,297
Panel B. Subsamples of unregulated projects				
Coefficient	-0.040 (0.06)	-0.075 (0.07)	-0.040 (0.06)	-0.075 (0.07)
Bandwidth	191.820	194.880	191.820	194.880
Observations	13,449	13,449	13,449	13,449

Note: This table reports the results of the RDiT analysis on log unit transaction prices. Columns (1)–(4) present estimates based on alternative model specifications, including linear and quadratic polynomial fits, with and without time trends. Panel A includes regulated projects; Panel B includes unregulated projects. Standard errors are reported in parentheses.

**Table S2.** Serial correlation test for transaction price index and volume

Lag	AC	PAC	Q statistics	Prob > Q
Panel A. Transaction price index (regulated projects)				
1	0.935	0.966	43.78	0.000
2	0.867	-0.408	82.23	0.000
3	0.789	-0.182	114.81	0.000
4	0.694	-0.269	140.59	0.000
5	0.602	-0.094	160.46	0.000
6	0.510	-0.379	175.07	0.000
7	0.422	0.088	185.33	0.000
8	0.329	-0.273	191.74	0.000
9	0.235	0.104	195.07	0.000
10	0.138	-0.253	196.26	0.000
11	0.043	-0.065	196.38	0.000
12	-0.051	-0.177	196.55	0.000
Panel B. Transaction price index (unregulated projects)				
1	0.917	0.943	42.14	0.000
2	0.871	0.230	80.98	0.000
3	0.797	-0.418	114.24	0.000
4	0.715	-0.198	141.61	0.000
5	0.615	-0.260	162.32	0.000
6	0.525	-0.328	177.77	0.000
7	0.436	0.021	188.72	0.000
8	0.337	-0.185	195.42	0.000
9	0.243	-0.262	198.99	0.000
10	0.133	-0.380	200.08	0.000
11	0.039	-0.254	200.18	0.000
12	-0.068	-0.284	200.49	0.000
Panel C. Transaction volume (regulated projects)				
1	0.821	0.830	918.30	0.000
2	0.745	0.205	1675.20	0.000
3	0.714	0.193	2371.40	0.000

Lag	AC	PAC	Q statistics	Prob > Q
4	0.696	0.134	3032.70	0.000
5	0.712	0.223	3725.90	0.000
6	0.762	0.303	4519.80	0.000
7	0.806	0.324	5408.50	0.000
8	0.731	-0.135	6140.10	0.000
9	0.671	-0.117	6757.70	0.000
10	0.630	-0.117	7302.00	0.000
11	0.609	-0.075	7811.60	0.000
12	0.632	0.023	8361.00	0.000
Panel D. Transaction volume (unregulated projects)				
1	0.770	0.793	772.87	0.000
2	0.698	0.243	1409.30	0.000
3	0.646	0.110	1954.10	0.000
4	0.637	0.170	2485.00	0.000
5	0.651	0.203	3039.10	0.000
6	0.715	0.325	3707.40	0.000
7	0.767	0.324	4477.30	0.000
8	0.694	-0.090	5109.30	0.000
9	0.631	-0.100	5631.40	0.000
10	0.588	-0.049	6085.10	0.000
11	0.574	-0.038	6518.60	0.000
12	0.606	0.078	7001.60	0.000

Note: This table reports Ljung–Box Q test results for serial correlation in transaction price index and transaction volume. The test is conducted for lags 1–12. AC and PAC denote autocorrelation and partial autocorrelation coefficients, respectively.

In the second step, we re-estimate the RDit model. A time trend and the first lag of the dependent variable are incorporated into the RDit specification, and local polynomial regressions are performed with both linear and quadratic terms. The results remain consistent (Table S3), with the transaction price index showing no significant discontinuity and transaction volume remaining significantly negative.

In the third step, we test for autocorrelation in the residuals. As nonparametric local polynomial regressions do not produce residuals, we cannot directly test for autocorrelation in the error terms. To address this, we follow the approach of Imbens and Lemieux (2008)<sup>2</sup> and estimate equivalent parametric OLS models using the same bandwidth-restricted sample, with the bandwidth derived from the aforementioned nonparametric regressions and observations rounded to the nearest value within the bandwidth range. Residuals from these models are then used to conduct Durbin–Watson and Breusch–Godfrey tests. Both linear and quadratic OLS specifications are considered, as described below.

$$Y_t = Con + \alpha \cdot D_t + \beta_1 \cdot (T_t - T_t^*) + \beta_2 \cdot (T_t - T_t^*) \cdot D_t + \beta_3 \cdot Y_{t-1} + \varepsilon_t; \quad (S1)$$

$$Y_t = Con + \alpha \cdot D_t + \gamma_1 \cdot (T_t - T_t^*) + \gamma_2 \cdot (T_t - T_t^*)^2 + \quad (S2)$$

$\gamma_3 \cdot (T_t - T_t^*) \cdot D_t + \gamma_4 \cdot (T_t - T_t^*)^2 \cdot D_t + \gamma_5 \cdot Y_{t-1} + \varepsilon_t$ , where:  $Y_t$  is the dependent variable, including housing transaction price index (monthly frequency), and transaction volumes (daily frequency);  $Y_{t-1}$  is the first-order lag of  $Y_t$ ;  $D_t$  is the treatment variable, with 1 indicating a listing after the RP policy, and 0 otherwise;  $T_t$  is the running variable in number of days (or months);  $T_t^*$  is the number of days (or months) when the RP policy was implemented.

The residual diagnostics for the transaction price index show that, under the linear specification, weak autocorrelation is detected for both regulated (Panel A of Table S4) and unregulated projects (Panel B of Table S4). However, under the quadratic specification, residuals from unregulated projects (Panel D of Table S4) exhibit significant autocorrelation at the second and higher-order lags. This suggests that more complex trend fitting may introduce higher-order serial correlation in the errors.

The residual autocorrelation tests for transaction volume show that, under the linear specification, unregulated projects (Panel C of Table S5) exhibit significant autocorrelation from the 1st to the 4th lag, while regulated projects (Panel A of Table S5) show marginal autocorrelation starting at the 3rd lag. Under the quadratic specification, both groups exhibit signs of higher-order autocorrelation. These results highlight the need for heteroskedasticity and autocorrelation consistent (HAC) standard errors to ensure robust estimates.

<sup>2</sup> Imbens, G. W., & Lemieux, T. (2008). Regression discontinuity designs: A guide to practice. *The Regression Discontinuity Design: Theory and Applications*, 142(2), 615–635.

**Table S3.** RDiT on transaction price index and transaction volume

Indep. Var.	(1)	(2)	(3)	(4)
	Transaction price index		Transaction volume	
	Linear fit	Quadratic polynomial fit	Linear fit	Quadratic polynomial fit
Panel A. Subsamples of regulated projects				
Coefficient	2.871 (72.86)	0.999 (134.28)	-22.314*** (3.99)	-18.968*** (4.20)
Bandwidth	8.754	9.626	124.488	270.552
Observations	46	46	1342	1,342
Panel B. Subsamples of unregulated projects				
Coefficient	-0.299 (4.55)	-1.242 (75.38)	-11.075*** (2.07)	-9.536*** (2.27)
Bandwidth	9.327	11.433	122.720	255.984
Observations	46	46	1,244	1,244

Note: This table reports the results of the RDiT analysis on transaction price index and transaction volume. Columns (1)–(4) present estimates based on alternative model specifications, including linear and quadratic polynomial fits. Panel A includes regulated projects; Panel B includes unregulated projects. Standard errors are reported in parentheses. \*\*\* indicate statistical significance at the 1% level, respectively.

**Table S4.** Residual autocorrelation tests for transaction price index

Panel A. Residual autocorrelation test under linear fit (regulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	1.322	1	0.250
2	2.017	2	0.365
3	3.196	3	0.362
4	15.660	4	0.004
Durbin–Watson d-statistic (5, 19) = 2.202			
Panel B. Residual autocorrelation test under quadratic fit (regulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	0.315	1	0.574
2	0.831	2	0.660
3	5.390	3	0.145
4	14.715	4	0.005
Durbin–Watson d-statistic (7, 21) = 1.938			
Panel C. Residual autocorrelation test under linear fit (unregulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	0.533	1	0.465
2	0.607	2	0.738
3	1.718	3	0.633
4	2.567	4	0.633
Durbin–Watson d-statistic (5, 19) = 1.899			
Panel D. Residual autocorrelation test under quadratic fit (unregulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	2.523	1	0.112
2	7.493	2	0.024
3	12.143	3	0.007
4	12.173	4	0.016
Durbin–Watson d-statistic (7, 23) = 2.367			

Note: This table presents residual autocorrelation tests for the transaction price index under different model specifications. The Breusch–Godfrey LM test is conducted for lags 1–4, and the Durbin–Watson statistic is reported for each panel. Panel A and B refer to regulated projects; Panel C and D refer to unregulated projects.

**Table S5.** Residual autocorrelation tests for transaction volume

Panel A. Residual autocorrelation test under linear fit (regulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	1.260	1	0.262
2	3.889	2	0.143
3	8.717	3	0.033
4	11.814	4	0.019
Durbin–Watson d-statistic (5, 228) = 2.044			
Panel B. Residual autocorrelation test under quadratic fit (regulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	3.028	1	0.082
2	6.301	2	0.043
3	6.314	3	0.097
4	7.642	4	0.106
Durbin–Watson d-statistic (7, 520) = 2.084			
Panel C. Residual autocorrelation test under linear fit (unregulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	6.508	1	0.011
2	9.174	2	0.010
3	9.546	3	0.023
4	12.459	4	0.014
Durbin–Watson d-statistic (5, 221) = 2.073			
Panel D. Residual autocorrelation test under quadratic fit (unregulated projects)			
Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi <sup>2</sup>	df	Prob > chi <sup>2</sup>
1	5.036	1	0.025
2	5.268	2	0.072
3	5.483	3	0.140
4	8.661	4	0.070
Durbin–Watson d-statistic (7, 455) = 2.080			

Note: This table presents residual autocorrelation tests for the transaction volume under different model specifications. The Breusch–Godfrey LM test is conducted for lags 1–4, and the Durbin–Watson statistic is reported for each panel. Panel A and B refer to regulated projects; Panel C and D refer to unregulated projects.

In the fourth step, we apply HAC correction in the parameter estimation. Based on the residual autocorrelation diagnostics, we use Newey–West standard errors to correct for heteroskedasticity and autocorrelation. The adjusted results (Table S6) show that the coefficient on the transaction price index remains statistically insignificant at the breakpoint, while the coefficient on transaction volume remains significantly negative. These results align with the baseline findings, suggesting that our main empirical conclusions are robust despite the presence of serial correlation in the error terms.

## (2) The problem of nonstationary time series

To further guard against spurious regression caused by nonstationary time trends, we adopt two additional strategies.

First, we perform Augmented Dickey–Fuller (ADF) tests on the transaction price index and transaction volume, ap-

plying first or second differencing as needed to avoid spurious regression.

In the first step, we find that the transaction price index (YM) and its first difference (YM\_Diff1) both fail to reject the null hypothesis of a unit root, indicating that the series is non-stationary and integrated of order two,  $I(2)$ . In contrast, the second-differenced series (YM\_Diff2) rejects the null at the 1% level ( $p = 0.003$ ). The transaction volume (Num) rejects the unit root hypothesis in levels, suggesting it is stationary without differencing. Its first difference (Num\_Diff1) also passes the stationarity test.

In the second step, we estimate the revised baseline RDIT models using the differenced series (YM\_Diff1, YM\_Diff2, and Num\_Diff1) as dependent variables. The estimated policy effects remain directionally consistent with the original results, and the statistical significance of the coefficients is retained. No structural changes are observed in the estimates.

**Table S6.** HAC-adjusted estimates (Newey–West)

Indep. Var.	(1)	(2)	(3)	(4)
	Transaction price index		Transaction volume	
	Regulated projects	Unregulated projects	Regulated projects	Unregulated projects
Panel A. Linear fit				
$D_t$	-0.281 (2.47)	2.707 (1.89)	-20.211*** (4.46)	-10.916*** (1.98)
$T_t - T_t^*$	1.136*** (0.32)	3.231*** (0.63)	0.089*** (0.03)	0.031* (0.02)
$(T_t - T_t^*) \times D_t$	-2.214*** (0.43)	-4.959*** (0.88)	-0.086** (0.04)	-0.016 (0.02)
$Y_{t-1}$	0.543*** (0.13)	-0.492* (0.27)	0.235* (0.13)	0.094 (0.09)
Constant	68.365*** (18.25)	207.043*** (36.75)	28.002*** (5.58)	14.243*** (2.12)
Observations	19	19	228	221
Panel B. Quadratic fit				
$D_t$	-2.892 (1.78)	-1.738 (1.19)	-13.160*** (4.04)	-7.658*** (1.98)
$T_t - T_t^*$	2.553*** (0.66)	3.468*** (0.49)	0.152*** (0.06)	0.083*** (0.03)
$(T_t - T_t^*) \times D_t$	-1.629* (0.89)	-2.449*** (0.50)	-0.156*** (0.06)	-0.070** (0.03)
$(T_t - T_t^*)^2$	0.020 (0.06)	-0.042* (0.02)	0.001*** (0.00)	0.000*** (0.00)
$(T_t - T_t^*)^2 \times D_t$	-0.279** (0.11)	-0.251*** (0.06)	-0.001*** (0.00)	-0.001*** (0.00)
$Y_{t-1}$	0.052 (0.18)	-0.779*** (0.20)	0.552*** (0.09)	0.476*** (0.08)
Constant	139.125*** (26.14)	245.964*** (26.92)	18.048*** (4.91)	9.555*** (2.16)
Observations	21	23	520	455

Note: This table presents HAC-adjusted estimates based on Newey–West standard errors for both the transaction price index and transaction volume. Columns (1)–(4) report results for regulated and unregulated projects under linear (Panel A) and quadratic (Panel B) specifications. Standard errors are shown in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

In the third step, we apply the same strategy outlined in section (1) by using Newey–West standard errors to implement HAC corrections in the differenced regressions. The results further confirm that the estimates remain robust and reliable after accounting for both non-stationarity and autocorrelation in the error terms.

Second, to assess whether the estimated discontinuity effects in the main regression are driven by trend misspecification or non-stationarity, we conduct a placebo breakpoint test. This involves assigning artificial policy dates to examine whether the estimated effects remain

significant in the absence of an actual intervention. Significant results at placebo breakpoints would suggest that the observed effects may be confounded by underlying trends or model mis-specification. We select four representative placebo dates—six months and one year before and after the actual policy implementation (i.e. 8 February 2020, 8 August 2020, 8 August 2021, and 8 February 2022). If similar changes are observed around the placebo dates, both in magnitude and statistical significance, this would cast doubt on the validity of the baseline policy effect.

**Table S7.** Augmented Dickey–Fuller (ADF) unit root tests

Indep. Var.	Lag order	ADF test statistic	5% critical value	P value
Panel A. Transaction price index (regulated projects)				
YM	4	-1.474	-2.952	0.546
YM_Diff1	4	-0.708	-2.955	0.845
YM_Diff2	4	-3.787	-2.958	0.003
Panel B. Transaction price index (unregulated projects)				
YM	4	-1.757	-2.952	0.402
YM_Diff1	4	-1.018	-2.955	0.747
YM_Diff2	4	-3.951	-2.958	0.002
Panel C. Transaction volume (regulated projects)				
Num	4	-4.849	-2.860	0.000
Num_Diff1	4	-31.627	-2.860	0.000
Panel D. Transaction volume (unregulated projects)				
Num	4	-5.111	-2.860	0.000
Num_Diff1	4	-29.649	-2.860	0.000

Note: This table presents the results of Augmented Dickey–Fuller (ADF) unit root tests for the transaction price index and transaction volume series. Tests are performed on the original, first-differenced, and second-differenced series, using a uniform lag order of 4. Critical values correspond to the 5% significance level.

**Table S8.** RDIT estimates using differenced dependent variables

Indep. Var.	(1)	(2)	(3)
	YM_Diff1	YM_Diff2	Num_Diff1
Panel A. Subsamples of regulated projects			
Coefficient	1.543 (37.26)	6.122 (78.25)	-18.963*** (4.19)
Bandwidth	10.996	8.801	270.636
Observations	46	45	1,342
Panel B. Subsamples of unregulated projects			
Coefficient	-1.311 (53.42)	-0.490 (15.69)	-9.651*** (2.29)
Bandwidth	11.840	13.068	250.550
Observations	46	45	1,244

Note: This table reports RDIT estimates using first- and second-differenced dependent variables for transaction price index and first-differenced transaction volume. Panel A includes regulated projects; Panel B includes unregulated projects. Standard errors are shown in parentheses. \*\*\* indicate statistical significance at the 1% level, respectively.

**Table S9.** HAC-adjusted estimates (Newey–West) for differenced variables

Indep. Var.	(1)	(2)	(3)	(4)	(5)	(6)
	YM_Diff1		YM_Diff2		Num_Diff1	
	Regulated projects	Unregulated projects	Regulated projects	Unregulated projects	Regulated projects	Unregulated projects
$D_t$	-1.848 (2.08)	0.143 (2.01)	-1.146 (1.78)	4.347 (2.55)	-13.160*** (4.04)	-7.544*** (1.94)
$T_t - T_t^*$	1.986*** (0.61)	3.407*** (0.70)	4.448*** (1.13)	6.303*** (1.24)	0.152*** (0.06)	0.087*** (0.03)
$(T_t - T_t^*) \times D_t$	-2.061** (0.74)	-3.641*** (0.70)	-0.842 (1.38)	-6.777*** (1.08)	-0.156*** (0.06)	-0.073** (0.03)
$(T_t - T_t^*)^2$	0.007	-0.014	-0.046	-0.007	0.001***	0.000***

Indep. Var.	(1)	(2)	(3)	(4)	(5)	(6)
	YM_Diff1		YM_Diff2		Num_Diff1	
	Regulated projects	Unregulated projects	Regulated projects	Unregulated projects	Regulated projects	Unregulated projects
$(T_t - T_t^*)^2 \times D_t$	(0.04) -0.129	(0.02) -0.144	(0.10) -0.596***	(0.03) -0.234*	(0.00) -0.001***	(0.00) -0.001***
$Y_{t-1}$	(0.11) -0.753***	(0.10) -1.641***	(0.14) -2.003***	(0.13) -2.939***	(0.00) -0.448***	(0.00) -0.494***
Constant	(0.21) 111.166***	(0.28) 227.214***	(0.24) 286.846***	(0.48) 403.519***	(0.09) 18.048***	(0.07) 9.276***
Observations	(29.57) 23	(38.62) 25	(35.11) 19	(66.57) 27	(4.91) 520	(2.09) 449

Note: This table presents HAC-adjusted estimates based on Newey–West standard errors using differenced dependent variables. Columns (1)–(6) report results for first- and second-differenced transaction price indices and first-differenced transaction volume, separately for regulated and unregulated projects. Standard errors are reported in parentheses. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Tables S10–S12 report the results of the placebo tests and provide further support for the causal interpretation of our baseline estimates. At the four placebo dates, the coefficients for transaction prices and the price index are generally insignificant. Although transaction volume shows occasional significance at certain points, such as a positive and significant estimate on 8 August 2020, there

is no consistent pattern of significant declines. These findings suggest that the decline in transaction volume identified in the main regression is unlikely to be driven by underlying time trends or model misspecification. Instead, it reflects a market response to the RP policy, reinforcing the temporal validity and robustness of our results.

**Table S10.** Placebo breakpoint test for transaction price

Indep. Var.	(1)	(2)	(3)	(4)
	8 February 2020	8 August 2020	8 August 2021	8 February 2022
Panel A. Subsamples of regulated projects				
Coefficient	-0.180* (0.09)	-0.080* (0.03)	-0.014 (0.06)	0.002 (0.13)
Bandwidth	96.763	174.416	158.386	95.450
Observations	27,297	27,297	27,297	27,297
Panel B. Subsamples of unregulated projects				
Coefficient	0.278** (0.14)	-0.076 (0.05)	-0.039 (0.11)	-0.098 (0.12)
Bandwidth	88.001	210.458	187.590	156.549
Observations	13,449	13,449	13,449	13,449

Note: This table presents placebo tests using alternative breakpoints for transaction prices. Columns (1)–(4) report RDIT estimates using pseudo-policy dates prior to or after the actual breakpoint. Panel A includes regulated projects; Panel B includes unregulated projects. Standard errors are reported in parentheses. \* and \*\* indicate significance at the 10% and 5% levels, respectively.

**Table S11.** Placebo breakpoint test for transaction price index

Indep. Var.	(1)	(2)	(3)	(4)
	8 February 2020	8 August 2020	8 August 2021	8 February 2022
Panel A. Subsamples of regulated projects				
Coefficient	-4.359 (25.22)	-3.631 (17.23)	-5.542 (92.73)	4.272 (62.09)
Bandwidth	11.904	15.511	6.795	12.362

Indep. Var.	(1)	(2)	(3)	(4)
	8 February 2020	8 August 2020	8 August 2021	8 February 2022
Observations	46	46	46	46
Panel B. Subsamples of unregulated projects				
Coefficient	-0.467 (66.64)	-1.368 (21.67)	1.076 (5.03)	7.253 (30.17)
Bandwidth	8.794	11.145	8.158	13.247
Observations	46	46	46	46

Note: This table presents placebo tests using alternative breakpoints for transaction price index. Columns (1)–(4) report RDIT estimates using pseudo-policy dates prior to or after the actual breakpoint. Panel A includes regulated projects; Panel B includes unregulated projects. Standard errors are reported in parentheses.

**Table S12.** Placebo breakpoint test for transaction volume

Indep. Var.	(1)	(2)	(3)	(4)
	8 February 2020	8 August 2020	8 August 2021	8 February 2022
Panel A. Subsamples of regulated projects				
Coefficient	-1.674 (10.23)	6.917** (3.53)	-0.719 (1.01)	2.338* (1.35)
Bandwidth	79.979	106.296	146.396	101.163
Observations	1,342	1,342	1,342	1,342
Panel B. Subsamples of unregulated projects				
Coefficient	-6.161 (5.91)	4.405** (2.11)	0.212 (0.67)	0.343 (1.42)
Bandwidth	79.967	104.638	153.461	107.962
Observations	1,244	1,244	1,244	1,244

Note: This table presents placebo tests using alternative breakpoints for transaction volume. Columns (1)–(4) report RDIT estimates using pseudo-policy dates prior to or after the actual breakpoint. Panel A includes regulated projects; Panel B includes unregulated projects. Standard errors are reported in parentheses. \* and \*\* indicate significance at the 10% and 5% levels, respectively.