

Internet Appendix for
“Economic Consequences of Public Pension Accounting Rule Changes: Evidence from
Housing Markets and Local Economies”

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This Internet Appendix reports the results of supplementary and robustness tests as described below:

Table A1: Disclosed Pension Underfunding and Housing Price Growth

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Table A5: Pension Underfunding and Housing Price Growth- Robustness Test Part 2

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Table B1: Robustness Test on Subsample Analysis-Part 1 –excluding California

Table B2: Robustness Test on Subsample Analysis-Part 2 –excluding states in the west region

Table A1 Disclosed Pension Underfunding and Housing Price Growth

This table presents the results of the regression of county-level annual housing price growth on disclosed pension underfunding at the state-level. dUnderfunding is the disclosed pension underfunding status from the Public Pension Database. HPG is the annual growth rate in FHFA Housing Price Index (HPI). lnLoanLimit is the natural log of county-specific maximum conforming loan limits for mortgages to be acquired by Fannie Mae and Freddie Mac; PropTaxRate is the county level property tax rate; lnPerCapInc is the natural log of income per capita at the county level; lnRevenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; Foreclosure is the indicator of whether there is juridical foreclosure process in the state, and 0 otherwise; Constraint is a categorical variable that ranges from 0 to 3 depending on the level of political constraint the state face to renegotiate pension benefits; Debtratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; lnMedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	(1) HPG	(2) HPG	(3) HPG	(4) HPG	(5) HPG	(6) HPG	(7) HPG	(8) HPG	(9) HPG
dUnderfunding*POST			-0.01*** (-2.87)			-0.01*** (-2.69)			-0.01** (-2.27)
dUnderfunding	0.00 (0.65)	-0.00 (-1.23)	0.01 (1.30)	-0.00 (-0.47)	-0.01** (-2.03)	0.00 (0.82)	-0.00 (-0.83)	-0.00** (-2.20)	0.00 (0.79)
POST			1.58*** (4.78)						
lnLoanLimit	5.14*** (3.03)	0.83 (0.40)	2.68 (1.51)	4.98*** (3.85)	1.00 (0.53)	2.58* (1.94)	3.57*** (2.80)	-1.21 (-0.61)	-0.34 (-0.29)
PropTaxRate	0.05 (0.07)	-1.06 (-1.44)	-0.54 (-1.07)	-0.11 (-0.25)	-1.02 (-1.39)	-0.57 (-1.48)	0.20 (0.62)	-0.90** (-1.99)	-0.23 (-0.83)
lnPerCapInc	5.36*** (5.59)	4.91*** (4.65)	6.70*** (6.95)	4.00*** (5.38)	4.82*** (4.70)	5.93*** (6.05)	3.35*** (5.93)	2.73*** (4.05)	1.91*** (5.71)
lnRevenue	-0.94*** (-4.16)	0.01 (0.05)	-0.42** (-2.16)	-0.42** (-2.38)	0.10 (0.34)	-0.14 (-0.75)	-0.36** (-2.38)	0.13 (0.88)	-0.06 (-0.67)
EduQuality	0.14* (1.82)	0.13** (2.16)	0.12* (1.93)	0.13* (1.72)	0.13** (2.23)	0.11* (1.79)	0.15** (2.44)	0.12** (2.38)	0.11*** (3.88)
IncTaxRate	0.02 (0.45)	-0.06 (-1.11)	-0.02 (-0.51)	0.02 (0.59)	-0.07 (-1.20)	-0.02 (-0.56)	0.04 (1.24)	-0.05* (-1.84)	0.00 (0.15)

Table A1 (Continued)

VARIABLES	(1) HPG	(2) HPG	(3) HPG	(4) HPG	(5) HPG	(6) HPG	(7) HPG	(8) HPG	(9) HPG
Coindex	0.08*** (4.99)	0.03*** (3.55)	0.05*** (5.66)	0.01 (1.08)	0.02** (2.04)	0.02** (2.59)	-0.00 (-0.32)	0.02*** (3.50)	0.01** (2.51)
Foreclosure	0.31 (0.70)	-0.39 (-0.94)	-0.13 (-0.39)	0.10 (0.40)	-0.42 (-1.04)	-0.26 (-0.98)	0.07 (0.30)	-0.40* (-1.83)	-0.28** (-2.17)
Constraint	-0.13 (-0.51)	-0.25 (-1.41)	-0.21 (-1.09)	0.02 (0.13)	-0.21 (-1.22)	-0.14 (-0.95)	0.01 (0.09)	-0.25** (-2.17)	-0.19*** (-2.69)
Debtratio	0.33 (0.43)	0.63 (0.54)	0.47 (0.67)	-0.64 (-1.04)	0.38 (0.33)	-0.11 (-0.17)	-1.06* (-1.78)	-0.01 (-0.02)	-0.49 (-1.42)
pctUnion	0.14** (2.40)	0.00 (0.02)	0.06 (1.01)	0.00 (0.08)	-0.00 (-0.04)	-0.00 (-0.08)	0.01 (0.19)	-0.00 (-0.07)	0.01 (0.28)
InMedianPrice	-3.49*** (-5.53)	-3.82*** (-4.28)	-4.59*** (-6.86)	-2.66*** (-4.64)	-3.92*** (-4.38)	-4.17*** (-5.68)	-1.22** (-2.60)	-1.34*** (-3.03)	-1.34*** (-3.33)
County-pair FE	Y	Y	N	Y	Y	N	Y	Y	N
Year FE	N	Y	N	N	Y	N	N	Y	N
County-pair *Year FE	N	N	Y	N	N	Y	N	N	Y
Observations	6,300	6,225	12,540	6,300	6,225	12,540	5,292	5,196	11,166
R-squared	0.33	0.21	0.23	0.39	0.22	0.26	0.68	0.56	0.63

Table A2 Change in Disclosed Pension Underfunding and Housing Price Growth

This table presents the results of regressing the housing price growth and change in disclosed pension underfunding. Δ Underfunding is the change in the disclosed pension underfunding status from the Public Pension Database. The dependent variable, HPG is the annual growth rate in FHFA Housing Price Index (HPI) measured. \ln LoanLimit is the natural log of county-specific maximum conforming loan limits for mortgages to be acquired by Fannie Mae and Freddie Mac; PropTaxRate is the county level property tax rate; \ln PerCapInc is the natural log of income per capita at the county level; \ln Revenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; Foreclosure is the indicator of whether there is juridical foreclosure process in the state, and 0 otherwise; Constraint is a categorical variable that ranges from 0 to 3 depending on the level of political constraint the state face to renegotiate pension benefits; Debtratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; \ln MedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	(1) Year=2012 HPG	(2) Year=2013 HPG	(3) Year=2014 HPG	(4) Year=2015 HPG	(5) Year=2016 HPG	(6) Year=2017 HPG
Δ Underfunding	-0.02 (-0.95)	0.01 (0.45)	-0.02 (-0.52)	-0.01 (-0.80)	-0.04** (-2.39)	-0.04** (-2.58)
\ln LoanLimit	-2.28 (-0.82)	3.30*** (2.69)	9.46*** (2.83)	-0.55 (-0.32)	1.12 (0.53)	-3.34 (-1.51)
PropTaxRate	0.21 (0.27)	0.25 (0.49)	0.39 (0.37)	-1.72 (-1.19)	0.33 (0.41)	-1.80 (-1.47)
\ln PerCapInc	3.65*** (3.40)	1.11 (1.04)	5.21*** (3.73)	1.14 (0.79)	4.80*** (2.93)	1.81 (1.21)
\ln Revenue	0.06 (0.20)	-0.60*** (-3.84)	-0.36 (-1.10)	-0.15 (-0.35)	0.11 (0.38)	0.42 (1.04)
EduQuality	0.25*** (3.01)	0.05 (0.72)	0.23* (1.84)	0.04 (0.35)	0.34** (2.62)	-0.00 (-0.01)
IncTaxRate	0.02 (0.46)	0.10*** (2.92)	0.04 (0.58)	0.04 (0.56)	0.02 (0.39)	-0.24*** (-3.16)
Coindex	-0.03 (-1.61)	0.01 (0.73)	0.00 (0.12)	0.01 (0.45)	0.02 (1.52)	0.03* (1.87)
Foreclosure	0.28 (0.92)	-0.34 (-1.60)	0.02 (0.04)	-0.77 (-1.34)	-0.57 (-1.20)	-0.05 (-0.08)
Constraint	0.46* (2.01)	-0.21 (-1.46)	-0.39 (-1.46)	-0.52** (-2.04)	-0.43* (-1.85)	-0.04 (-0.15)
Debtratio	-1.07 (-0.82)	-1.23* (-1.88)	-0.91 (-0.64)	0.28 (0.12)	0.42 (0.26)	-0.24 (-0.15)
pctUnion	-0.13* (-1.82)	0.09* (1.99)	0.01 (0.07)	0.01 (0.10)	-0.12 (-1.42)	0.08 (0.91)
\ln MedianPrice	-2.43*** (-3.22)	-0.15 (-0.20)	-0.93 (-0.99)	-1.64 (-1.41)	-2.50* (-2.01)	0.30 (0.30)
County-pair FE	Y	Y	Y	Y	Y	Y
Observations	1,796	1,712	1,784	1,526	1,776	1,894
R-squared	0.68	0.66	0.62	0.55	0.58	0.57

Table A3**Pension Underfunding and Three-year Compounded Housing Price Growth**

This table presents the results of regressing the three-year compounded housing price growth and pension underfunding. HPG3y is the three-year compounded growth rate in FHFA Housing Price Index (HPI) measured at the end of the 3-year period (2014 or 2017). AvgUnderfunding is the 3-year average of the total pension liabilities as a percentage of state GDP measured at the end of the 3-year period (2014 or 2017). All the control variables are the 3-year average of the original variables. InLoanLimit is the natural log of county-specific maximum conforming loan limits for mortgages to be acquired by Fannie Mae and Freddie Mac; PropTaxRate is the county level property tax rate; InPerCapInc is the natural log of income per capita at the county level; InRevenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; Foreclosure is the indicator of whether there is juridical foreclosure process in the state, and 0 otherwise; Constraint is a categorical variable that ranges from 0 to 3 depending on the level of political constraint the state face to renegotiate pension benefits; Debtratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; InMedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	Pre-GASB	Post-GASB
	(1) HPG3y(2012-2014)	(2) HPG3y(2015-2017)
AvgUnderfunding	0.03 (0.58)	-0.10** (-2.22)
InLoanLimit	12.89** (2.03)	-7.08 (-0.95)
PropTaxRate	1.15 (0.98)	-5.30 (-1.45)
InPerCapInc	12.43*** (2.78)	8.97*** (3.85)
InRevenue	-0.99 (-0.96)	1.07 (1.20)
EduQuality	0.31 (1.04)	0.13 (0.53)
IncTaxRate	0.19 (0.87)	-0.32* (-1.72)
Coindex	-0.00 (-0.00)	0.08** (2.58)
Foreclosure	-0.17 (-0.14)	-1.49 (-1.20)
Constraint	-0.70 (-1.09)	-0.24 (-0.42)
Debtratio	-4.74 (-1.57)	-0.65 (-0.24)

Table A3 (Continued)

VARIABLES	Pre-GASB	Post-GASB
	(1) HPG3y(2012-2014)	(2) HPG3y(2015-2017)
pctUnion	0.12 (0.58)	0.12 (0.75)
lnMedianPrice	-2.48 (-1.10)	0.72 (0.27)
County-pair FE	Y	Y
Observations	1,900	1,962
R-squared	0.66	0.60

Table A4**Pension Underfunding and Housing Price Growth-Robustness Test Part 1**

This table presents the results of regressing housing price growth on pension underfunding after controlling for lagged housing price growth. HPG is the annual growth rate in FHFA Housing Price Index (HPI). Underfunding is the state-level net pension liabilities (total pension liabilities – total pension assets) as a percentage of total state GDP in year t-1. lagHPG is the one-year lag of annual growth in HPI. lnLoanLimit is the natural log of county-specific maximum conforming loan limits for mortgages to be acquired by Fannie Mae and Freddie Mac; PropTaxRate is the county level property tax rate; lnPerCapInc is the natural log of income per capita at the county level; lnRevenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; IncTaxRate is the marginal income tax rate at the state level; Coindex is the coincident index for the state; Foreclosure is the indicator of whether there is juridical foreclosure process in the state, and 0 otherwise; Constraint is a categorical variable that ranges from 0 to 3 depending on the level of political constraint the state face to renegotiate pension benefits; Debratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; lnMedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	(1) HPG	(2) HPG	(3) HPG
Underfunding*POST	-0.02** (-2.24)	-0.03** (-2.52)	-0.02* (-1.81)
Underfunding	0.01 (0.48)	0.01 (0.45)	0.00 (0.11)
POST	1.09*** (3.85)		
lnLoanLimit	-0.20 (-0.19)	-0.25 (-0.29)	-0.20 (-0.25)
PropTaxRate	-0.17 (-0.51)	-0.23 (-0.83)	-0.15 (-0.53)
lnPerCapInc	2.25*** (4.61)	2.07*** (4.44)	1.60*** (4.66)
lnRevenue	-0.24* (-1.72)	-0.02 (-0.13)	0.00 (0.02)
EduQuality	0.05 (1.20)	0.04 (1.10)	0.09*** (2.73)
IncTaxRate	0.00 (0.00)	0.00 (0.14)	0.00 (0.02)
Coindex	0.04*** (5.85)	0.02** (2.55)	0.01 (1.54)
Foreclosure	-0.09 (-0.36)	-0.23 (-1.13)	-0.23 (-1.32)
Constraint	-0.22* (-1.90)	-0.19** (-2.13)	-0.17** (-2.07)

Table A4 (Continued)

VARIABLES	(1) HPG	(2) HPG	(3) HPG
Debratio	0.44 (1.07)	-0.20 (-0.48)	-0.45 (-1.08)
pctUnion	0.07** (2.05)	0.02 (0.56)	0.01 (0.22)
lagHPG	8.15*** (5.82)	6.33*** (4.22)	5.92*** (4.16)
lnMedianPrice	-4.10*** (-6.21)	-3.29*** (-4.41)	-7.91*** (-8.09)
County-pair FE	Y	Y	N
Year FE	N	Y	N
County-pair * Year FE	N	N	Y
Observations	12,517	12,517	10,452
R-squared	0.27	0.32	0.67

Table A5

Pension Underfunding and Housing Price Growth-Robustness Test Part 2

This table presents the results of regressing housing price growth and pension underfunding when controlling for county fixed effects. Time-invariant county-level variables are dropped out. HPG is the annual growth rate in FHFA Housing Price Index (HPI); Underfunding is the state-level net pension liabilities (total pension liabilities – total pension assets) as a percentage of total state GDP in year t-1. InPerCapInc is the natural log of income per capita at the county level; lnRevenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; IncTaxRate is the marginal income tax rate at the state level; Coindex is the coincident index for the state; lnPerCapInc is the natural log of per-capita income of the county; Debtratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; lnMedianPrice is the natural log of the median home prices in the county; lnMedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	(1) HPG	(2) HPG	(3) HPG
Underfunding*POST	-0.07*** (-3.84)	-0.08*** (-3.58)	-0.02*** (-2.90)
Underfunding	0.14 (1.40)	0.14 (1.00)	-0.24 (-1.27)
POST	1.51** (2.47)		
lnPerCapInc	9.98*** (3.08)	9.17*** (2.71)	10.49*** (2.79)
lnRevenue	-3.70* (-1.85)	-1.00 (-0.35)	-2.45 (-1.37)
EduQuality	-0.13* (-1.69)	-0.13* (-1.75)	-0.12** (-2.05)
IncTaxRate	-0.39*** (-5.91)	-0.37*** (-5.66)	-0.11 (-1.36)
Coindex	0.04*** (5.85)	0.02** (2.55)	0.01 (1.54)
Debtratio	-2.39 (-0.76)	-3.39 (-1.09)	-7.82*** (-3.11)
pctUnion	-0.08 (-0.64)	-0.08 (-0.73)	0.04 (0.54)
lnMedianPrice	-49.54*** (-9.78)	-49.82*** (-8.61)	-65.03*** (-10.89)
County-pair FE	Y	Y	N
Year FE	N	Y	N
County-pair * Year FE	N	N	Y
County-FE	Y	Y	Y
Observations	12,537	12,537	10,466
R-squared	0.46	0.46	0.78

Table A6 Alternative Housing Price Index-Zillow

This table presents the results of regression alternative measures of housing price growth on pension underfunding. ZillowYOY is the annual Zillow Home Price growth rate. ZillowHomePrice is the Zillow median Home Price. All standard errors are clustered at the state-border level and individual state level. Underfunding is the state-level net pension liabilities (total pension liabilities – total pension assets) as a percentage of total state GDP in year t-1. lnPerCapInc is the natural log of income per capita at the county level; lnRevenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; IncTaxRate is the marginal income tax rate at the state level; Coindex is the coincident index for the state; lnPerCapInc is the natural log of per-capita income of the county; Debtratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; lnMedianPrice is the natural log of the median home prices in the county; lnMedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	(1) Zillow YOY	(2) Zillow YOY	(3) Zillow YOY	(4) ZillowHome Price	(5) ZillowHome Price	(6) ZillowHome Price
Underfunding						
*POST	-0.00** (-2.01)	-0.00*** (-2.64)	-0.00 (-0.47)	-0.00 (-0.90)	-0.00* (-1.68)	-0.00** (-2.76)
Underfunding						
POST	-0.00 (-0.18)	0.00 (0.37)	0.00 (1.25)	-0.00 (-0.04)	0.00 (0.84)	-0.00*** (4.14)
POST	0.04*** (7.74)			-0.03 (-1.30)		
lnLoanLimit	0.08*** (3.85)	0.08** (2.58)	0.06** (2.02)	0.16 (1.01)	0.12 (0.73)	0.09 (0.45)
PropTaxRate	0.02 (1.40)	0.02 (0.84)	0.02 (1.40)	0.40*** (5.35)	0.39*** (5.36)	0.40*** (6.52)
lnPerCapInc	-0.02* (-1.92)	-0.02** (-2.54)	-0.02** (-2.24)	0.82*** (13.02)	0.82*** (12.83)	0.82*** (11.36)
lnRevenue	-0.01 (-1.41)	-0.00 (-0.61)	-0.00 (-0.99)	0.06*** (3.75)	0.06*** (4.10)	0.06*** (3.26)
EduQuality	0.01*** (4.53)	0.01*** (4.18)	0.01** (2.33)	-0.02 (-1.30)	-0.02 (-1.34)	-0.03 (-1.67)
IncTaxRate	0.00** (2.22)	0.00** (2.00)	0.00 (0.92)	-0.02*** (-4.99)	-0.03*** (-4.79)	-0.03*** (-6.38)
Coindex	-0.00*** (-2.73)	-0.00*** (-4.73)	0.00 (0.49)	0.00*** (5.41)	0.01*** (4.43)	0.00** (2.22)
Foreclosure	-0.02** (-2.02)	-0.02 (-1.29)	-0.02 (-1.64)	-0.13 (-1.42)	-0.13 (-1.55)	-0.09 (-1.40)
Constraint	0.01* (1.76)	0.01** (2.60)	-0.00 (-0.69)	-0.07*** (-3.75)	-0.08*** (-4.84)	-0.07*** (-4.26)
Debtratio	0.03** (2.58)	0.00 (0.28)	-0.03 (-0.93)	-0.10** (-2.25)	-0.18*** (-3.16)	-0.22** (-2.46)
pctUnion	0.00 (1.00)	-0.00 (-0.71)	0.00 (0.22)	0.03*** (11.99)	0.03*** (10.17)	0.03*** (10.16)

Table A6 (Continued)

VARIABLES	(1) Zillow YOY	(2) Zillow YOY	(3) Zillow YOY	(4) ZillowHome Price	(5) ZillowHome Price	(6) ZillowHome Price
County-pair FE	Y	Y	N	Y	Y	N
Year FE	N	Y	N	N	Y	N
County-pair *Year FE	N	N	Y	N	N	Y
Observations	1,231	1,231	518	1,231	1,231	518
R-squared	0.26	0.29	0.35	0.96	0.96	0.90

Table B1**Robustness Test Using Subsample Analysis-Part 1**

This table presents the results of regressing housing price growth on pension underfunding when excluding the state of California. HPG is the annual growth rate in FHFA Housing Price Index (HPI); Underfunding is the state-level net pension liabilities (total pension liabilities – total pension assets) as a percentage of total state GDP in year t-1. \ln LoanLimit is the natural log of county-specific maximum conforming loan limits for mortgages to be acquired by Fannie Mae and Freddie Mac; PropTaxRate is the county level property tax rate; \ln PerCapInc is the natural log of income per capita at the county level; \ln Revenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; IncTaxRate is the marginal income tax rate at the state level; Coindex is the coincident index for the state; Foreclosure is the indicator of whether there is juridical foreclosure process in the state, and 0 otherwise; Constraint is a categorical variable that ranges from 0 to 3 depending on the level of political constraint the state face to renegotiate pension benefits; Debtratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; \ln MedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	(1) HPG	(2) HPG	(3) HPG
Underfunding*POST	-0.03*** (-2.89)	-0.03** (-2.49)	-0.02* (-1.86)
Underfunding	-0.01 (-0.49)	-0.01 (-0.84)	-0.01 (-1.01)
POST	1.75*** (5.69)		
\ln LoanLimit	2.87* (1.91)	2.96** (2.58)	1.67** (2.07)
PropTaxRate	-0.03 (-0.88)	-0.04 (-1.34)	-0.03 (-1.17)
\ln PerCapInc	-0.31 (-1.59)	0.06 (0.39)	0.12 (1.02)
\ln Revenue	0.05*** (6.19)	0.02*** (2.74)	0.01 (1.33)
EduQuality	6.96*** (8.50)	6.19*** (7.54)	3.25*** (6.97)
IncTaxRate	-0.66 (-1.61)	-0.71** (-2.26)	-0.47* (-1.74)
Coindex	0.09* (1.70)	0.07 (1.45)	0.11*** (2.87)
Foreclosure	-0.07 (-0.25)	-0.25 (-1.08)	-0.24 (-1.26)
Constraint	-0.07 (-0.39)	-0.03 (-0.21)	-0.08 (-0.78)

Table B1 (Continued)

VARIABLES	(1) HPG	(2) HPG	(3) HPG
Debratio	0.64 (1.09)	0.16 (0.27)	-0.22 (-0.53)
pctUnion	0.06 (1.38)	-0.01 (-0.30)	-0.02 (-0.67)
lnMedianPrice	-5.01*** (-9.28)	-4.52*** (-7.40)	-1.51*** (-4.17)
County-pair FE	Y	Y	N
Year FE	N	Y	N
County-pair * Year FE	N	N	Y
Observations	12,385	12,385	10,248
R-squared	0.23	0.26	0.62

Table B2**Robustness Test Using Subsample Analysis-Part 2**

This table presents the results of regressing housing price growth on pension underfunding when excluding states in the west region (including the state of Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, California, Oregon and Washington). HPG is the annual growth rate in FHFA Housing Price Index (HPI); lnLoanLimit is the natural log of county-specific maximum conforming loan limits for mortgages to be acquired by Fannie Mae and Freddie Mac; PropTaxRate is the county level property tax rate; lnPerCapInc is the natural log of income per capita at the county level; lnRevenue is the natural log of county total revenues; EduQuality is the pupil/teacher ratios of the county; IncTaxRate is the marginal income tax rate at the state level; Coindex is the coincident index for the state; Foreclosure is the indicator of whether there is juridical foreclosure process in the state, and 0 otherwise; Constraint is a categorical variable that ranges from 0 to 3 depending on the level of political constraint the state face to renegotiate pension benefits; Debtratio is total debt outstanding as a percentage of total revenue at the state level; pctUnion is the percentage of employees in the state that are part of a public Union; lnMedianPrice is the natural log of the median home prices in the county. Standard errors are clustered at the state-border level and individual state level. T-statistics are in parentheses and *** denotes significance at the 1% level, ** at 5% level, and * at 10% level.

VARIABLES	(1) HPG	(2) HPG	(3) HPG
Underfunding*POST	-0.02* (-1.95)	-0.02** (-2.42)	-0.02* (-1.84)
Underfunding	-0.02 (-0.97)	-0.02 (-1.33)	-0.01 (-0.82)
POST	1.58*** (5.09)		
lnLoanLimit	3.00* (1.92)	3.34*** (2.80)	1.89** (2.48)
PropTaxRate	-0.03 (-0.79)	-0.04 (-1.36)	-0.05 (-1.49)
lnPerCapInc	-0.09 (-0.42)	0.20 (1.06)	0.18 (1.23)
lnRevenue	0.04*** (4.30)	0.01* (1.75)	0.01 (1.11)
EduQuality	6.77*** (6.84)	6.07*** (6.27)	2.96*** (4.47)
IncTaxRate	-0.70 (-1.39)	-0.73** (-2.06)	-0.55* (-1.83)
Coindex	0.09 (1.33)	0.06 (1.09)	0.10* (1.98)
Foreclosure	-0.08 (-0.24)	-0.24 (-0.85)	-0.18 (-0.75)
Constraint	-0.13 (-0.65)	-0.07 (-0.48)	-0.10 (-0.94)

Table B2 (Continued)

VARIABLES	(1) HPG	(2) HPG	(3) HPG
Debratio	0.29 (0.45)	-0.16 (-0.26)	-0.45 (-0.92)
pctUnion	0.02 (0.33)	-0.05 (-1.03)	-0.04 (-1.08)
lnMedianPrice	-5.21*** (-7.62)	-4.76*** (-6.27)	-1.67*** (-3.90)
County-pair FE	Y	Y	N
Year FE	N	Y	N
County-pair * Year FE	N	N	Y
Observations	10,614	10,614	8,908
R-squared	0.19	0.21	0.60