Home Price Expectations

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PhD Course on Subjective Beliefs, Attention and Economic Behavior

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- **Today's lecture**: Focus on home price expectations as a working example

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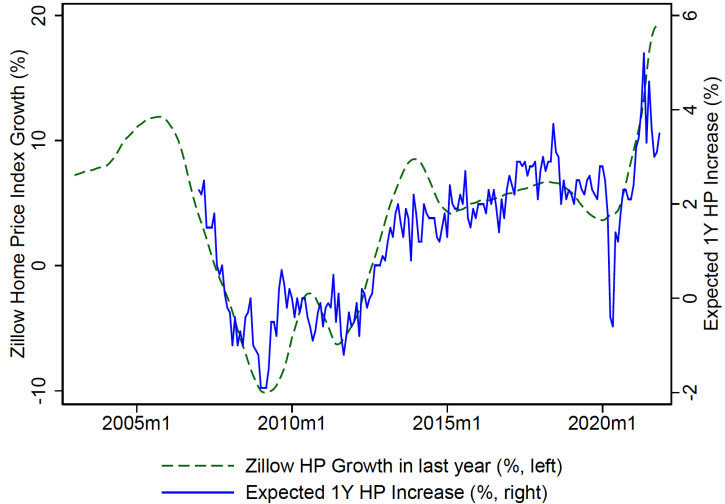
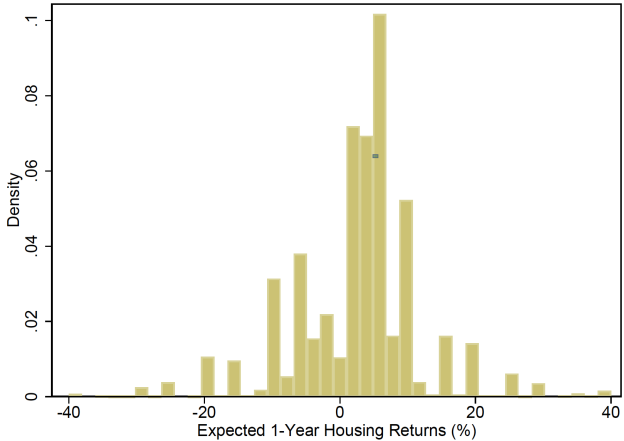
- **High stakes**: Housing is the most important asset on households' balance sheets
- **Behavioral relevance**: Housing (and mortgage) decisions should depend on future market conditions, which are inherently uncertain
- **Aggregate implications**: The housing market can have important spillover effects on the macroeconomy, as evidenced by the 2008 Global Financial Crisis

Descriptives: Home price changes vs home price expectations



Source: Kuchler et al. (2022)

Descriptives: Substantial disagreement in the cross-section



→ Cross-sectional variation in beliefs is larger than the time-series variation

Source: Kuchler et al. (2022); New York Fed SCE (2020).

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3. What are the effects of home price expectations on behavior?

(I) Measurement

Measuring home price expectations

- General rules of survey design apply (see Chris' lecture tomorrow)

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- Most studies elicit **subjective probability distributions** over future home price changes (Manski, 2004), typically in conjunction with a point forecast (e.g., for ORIV estimates (Gillen et al., 2019))

Measuring home price expectations

- General rules of survey design apply (see Chris' lecture tomorrow)
- Most studies elicit **subjective probability distributions** over future home price changes (Manski, 2004), typically in conjunction with a point forecast (e.g., for ORIV estimates (Gillen et al., 2019))
- Considerations specific to home price expectations:
  - **Time horizon**: 1-year ahead price change? 5-years ahead? Home prices exhibit short-term momentum and long-term mean reversion.
  - **Reference market**: Local home prices (zip code, county)? National home prices?

Example from the New York Fed's Survey of Consumer Expectations

What would you say is the percent chance that, **over the next 12 months**, the average home price nationwide will…

1. …increase by 12% or more ☐ percent.
2. …increase by 8% to 12% ☐ percent.
3. …increase by 4% to 8% ☐ percent.
4. …increase by 2% to 4% ☐ percent.
5. …increase by 0% to 2% ☐ percent.
6. …decrease by 0% to 2% ☐ percent.
7. …decrease by 2% to 4% ☐ percent.
8. …decrease by 4% to 8% ☐ percent.
9. …decrease by 8% to 12% ☐ percent.
10. …decrease by 12% or more ☐ percent.

(II) Origin and Determinants

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- Turns out, information and experiences that are "close" to us (in some sense)
- Focus on three important determinants of belief dispersion:
  - Close in time: Past realized home price changes (Armona et al., 2019)
  - Close geographically: Local home price changes (Kuchler and Zafar, 2019)
  - Close socially: Social interaction and friendship networks (Bailey et al., 2018)

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  - Close socially: Social interaction and friendship networks (Bailey et al., 2018)
- Other factors
  - Experience effects (e.g. Malmendier and Steiny, 2016)
  - Homeownership status (Kindermann et al., 2022)

Past home price changes

Armona, Fuster, Zafar (2019, REStud)

- Survey experiment in the NY Fed's Survey of Consumer Expectations
- **Prior beliefs**
  - Past local home price change in one's zip code (1-year and 5-year)
    - → To get at the perception gap (actual vs prior)
  - Local home price expectations (1-year and 5-years ahead)
- **Information treatment**: Inform respondents about actual local home price changes
  - **T1**: Past year
  - **T5**: Past 5 years
  - **Control**: No information
- **Outcome**: Re-elicit local home price expectations

Armona, Fuster, Zafar (2019, REStud): Beliefs are *extrapolative*

	Home price expectation revisions at horizon:					
	1 year	2–5 years	1 year	2–5 years	1 year	2–5 years
	(1)	(2)	(3)	(4)	(5)	(6)
T1 (β_1)	0.02	−0.12	0.08	−0.17	−0.01	−0.13
	(0.29)	(0.11)	(0.30)	(0.12)	(0.29)	(0.11)
T5 (β_2)	0.10	0.10	0.09	0.09	0.17	0.10
	(0.29)	(0.11)	(0.30)	(0.12)	(0.30)	(0.12)
1yr Perception Gap[a] (β_3)	0.00	0.00	0.01	0.00	0.00	0.00
	(0.03)	(0.01)	(0.03)	(0.01)	(0.03)	(0.01)
5yr Perception Gap (β_4)	0.05	0.00	0.05	−0.00	0.05	−0.00
	(0.05)	(0.02)	(0.05)	(0.02)	(0.05)	(0.02)
T1 * 1yr Perception Gap (β_5)	0.20***	0.04**	0.19***	0.05***	0.19***	0.04***
	(0.04)	(0.02)	(0.05)	(0.02)	(0.04)	(0.02)
T5 * 5yr Perception Gap (β_6)	0.07	0.05*	0.07	0.05*	0.08	0.06**
	(0.08)	(0.03)	(0.08)	(0.03)	(0.08)	(0.03)

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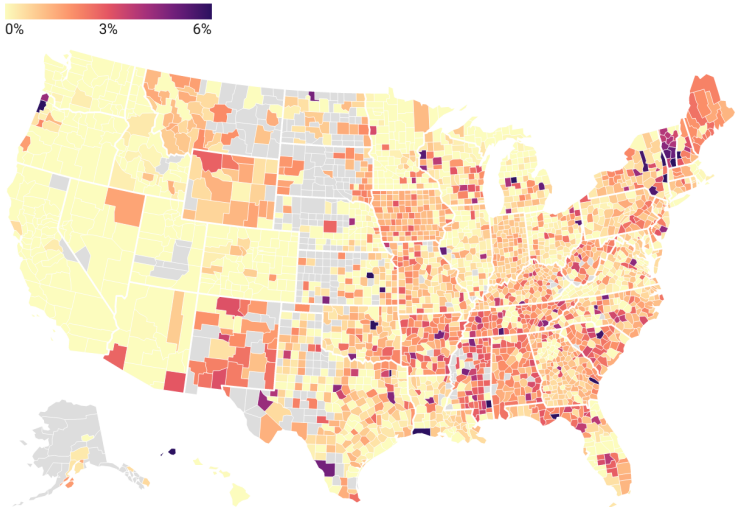
→ Extrapolation both for short and longer time horizons – in contrast to mean reversion of actual home prices over longer horizons

Local home price changes

Quarterly Real Estate Appreciation by County

Last Updated: Q1 2023



SparkRental Real Estate Blog

Map: G. Brian Davis, SparkRental • Source: Zillow • Created with Datawrapper

Kuchler and Zafar (2019, JF)

- To what extent do people rely on **local** price information when forming **aggregate** home price expectations?
  - Local price changes arguably more salient than home price changes in distant markets
  - Different local housing market experiences could potentially explain disagreement

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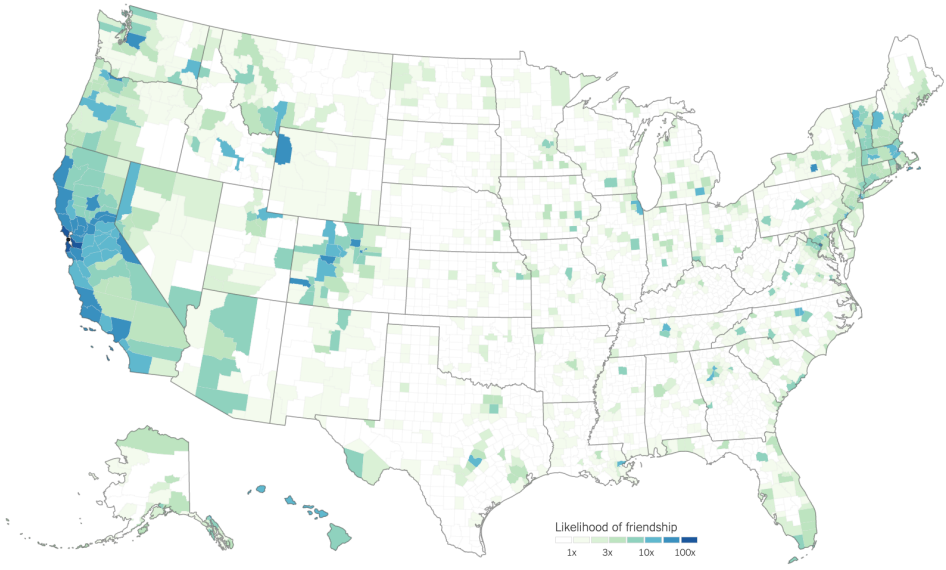
- Data and empirical strategy:
  - Survey of Consumer Expectations:
    - Respondents: **Monthly** measures of 1-year ahead **national home** price expectations
    - Match respondents with monthly data on local home price changes (from CoreLogic)
  - Exploit monthly variation in local home prices to examine updating about national home price expectations

Do local price changes affect national home price expectations? – **Yes!**

	(1) ZIP	(2) MSA	(3) State
Panel A: Expected One-Year Change in U.S. House Prices			
Past Local House Price Change	0.095***	0.172***	0.217***
	(0.0181)	(0.0332)	(0.0412)
Time Fixed Effects	Y	Y	Y
Demographics	Y	Y	Y
Effect of 1 std	0.516	0.686	0.738
Effect of 1 std when weighted	0.635	0.838	0.809
Number of observations	6,032	6,925	8,104
R^2	0.0436	0.0388	0.0367
Panel B: Expected One-Year Change in U.S. House Prices in Two Years			
Past Local House Price Change	0.0886***	0.116***	0.144***
	(0.0178)	(0.0276)	(0.0390)
Time Fixed Effects	Y	Y	Y
Demographics	Y	Y	Y
Effect of 1 std	0.483	0.465	0.493
Effect of 1 std when weighted	0.657	0.578	0.570
Number of observations	5,881	6,758	7,907
R^2	0.0602	0.0496	0.0494

Social interaction

The relative probability that someone in any U.S. county has a Facebook friendship link to San Francisco County, Calif.



Bailey, Cao, Kuchler, Stroebel (2018, JPE)

- Are experienced local home price propagated through social networks?
- Data and identification
  - Facebook data on individual friendship networks
  - Survey data among LA facebook users (N=1,243):
    "If someone had a large sum of money that they wanted to invest, would you say that relative to other possible financial investments, buying property in your zip code today is…?" [A very good investment, …, A very bad investment]

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    "If someone had a large sum of money that they wanted to invest, would you say that relative to other possible financial investments, buying property in your zip code today is…?" [A very good investment, …, A very bad investment]
  - **Identification**: Compare two individuals within the same zip code with friends who experienced different local home price changes in their county c

$$\text{FriendHPExp}_i = \sum_c \text{ShareFriends}_{i,N,c} \times \Delta HP_{c,t_1,t_2} \tag{1}$$

$$\text{GoodInvestment}_i = \alpha + \beta\, \text{FriendHPExp}_{i,2013-2015} + \gamma X_i + \psi_{\text{zip}} + \varepsilon_i \tag{2}$$

Bailey, Cao, Kuchler, Stroebel (2018, JPE)

	Dependent Variable: Local Housing a Good Investment? (Question 4)				
	(1)	(2)	(3)	(4)	(5)
Δ friend house prices, 2013–15 (%)	.040**	.036*			
	(.017)	(.019)			
Δ friend house prices, 2013–15 (%) × knowledge of house prices where friends live:					
Not at all informed				.002	
				(.036)	
Somewhat informed				.036	
				(.023)	
Well informed				.068*	
				(.039)	
Very well informed				.119*	
				(.069)	
Δ friend house prices, 2013–15 (%) × talk with friends about housing investments:					
Never					−.050
					(.038)
Rarely					.001
					(.028)
Sometimes					.086***
					(.027)
Often					.096**
Demographic controls	Yes	Yes	Yes	Yes	Yes
Zip code fixed effects	Yes	Yes	Yes	Yes	Yes
Sample		LA in 2012			
Observations	1,242	1,110	1,242	1,242	1,242

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3. The experienced price changes of our friends and peers propagate through **social networks** and affect expectations about the local housing market — even if friends live in geographically distant housing markets.

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→ *Heterogeneity* in local experiences and friendship networks can help explain part of the cross-sectional dispersion in expectations.

Questions?

(III) Expectations and Behavior

The role of home price expectations for behavior

- Home price expectations affect important housing market outcomes
  - Homeownership (Bailey et al., 2018; Bottan and Perez-Truglia, 2022)
  - Search behavior, i.e., duration and breadth of search (Gargano et al., 2020)
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- Key challenge: Linking survey measures of expectations with field data on behavior
  - Only a few studies link survey measures of macro expectations with admin data
- **Remainder of the lecture**: What about **non-housing** market outcomes?
  - Example of linked survey-admin data
  - *Bonus material*: How do people reason about home price changes?

Home Price Expectations and Spending: Evidence from a Field Experiment

Felix Chopra[1] Christopher Roth[2] Johannes Wohlfart[1]

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Excluded slides

Work in progress. Reach out if you are interested.

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