

What Do Consumers Believe About Future Gasoline Prices?

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Crucial for research on auto demand

- Key determinants of car choice
 - Purchase price
 - Attributes (e.g., size and power)
 - Lifetime fuel expenditures
 - Fuel economy (EPA tests)
 - Miles, scrap rates (odometers, registrations)
 - Discount rates (auto loan APRs)
 - **Gas prices today and in the future (i.e., beliefs)**
- “Energy paradox” findings
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- Researchers typically assume “no change” forecast
 - Results often hinge on assumptions about beliefs
 - But what do consumers *actually* believe?

Why don't we *ask* consumers?

- Michigan Survey of Consumers (MSC)
 - Monthly survey of 500 U.S. households
 - Nationally representative sampling
 - Asks about economic outlook (sentiment index)
 - Expectations for inflation, personal finances
 - Basic demographics
- We approached the MSC, proposing to add questions about expected gasoline prices

MSC already asks about gas prices!

- Do you think gas prices will go up during the next 5 years, go down, or stay the same?
 - By how many cents per gal will they go up/down?
- Previously unknown to research community!
- Also asks “next 12 months” since 2006
- Less than 1% non-response rates
- We use 5-year forecast data for 1993-2009

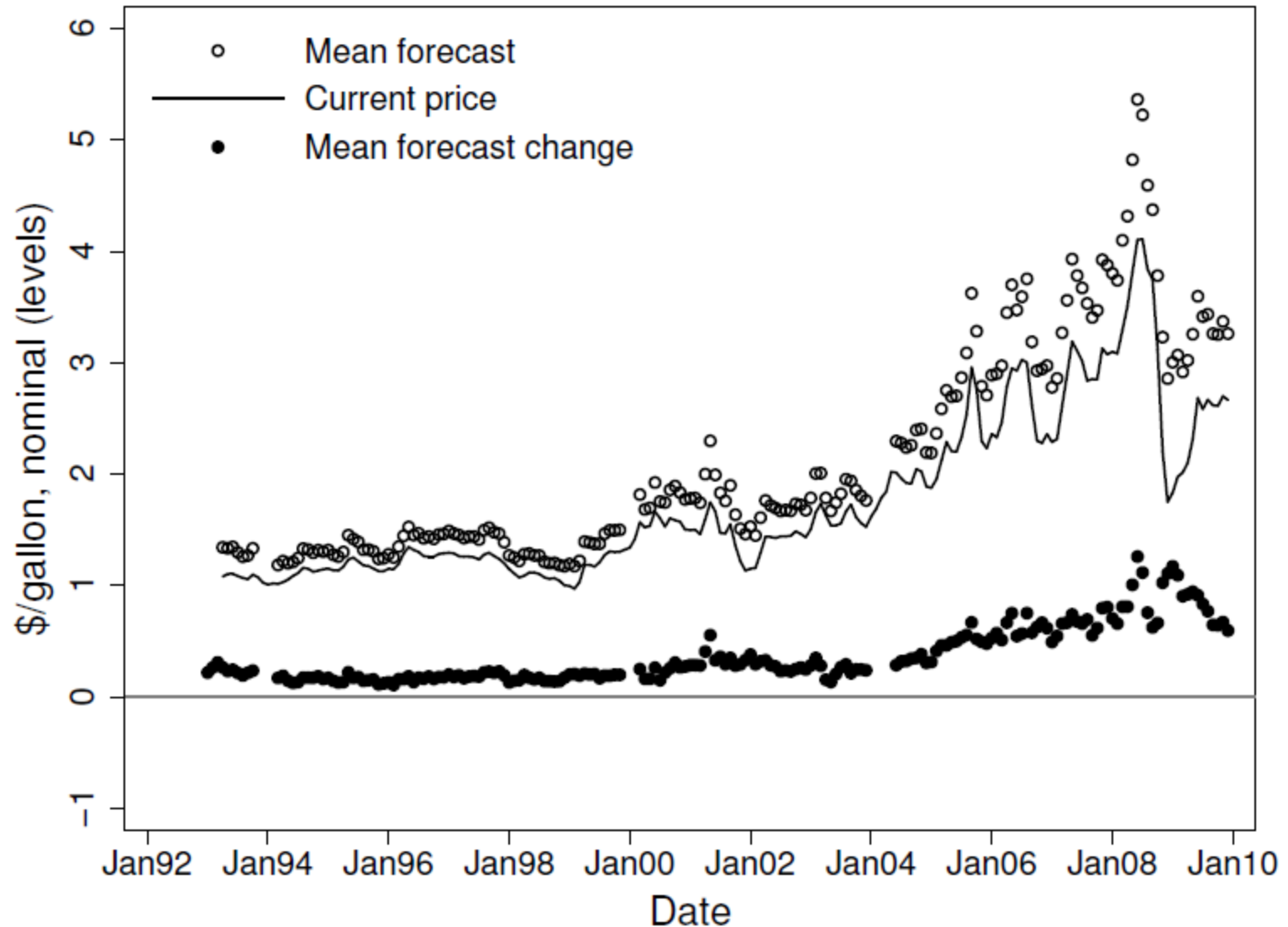
Similar question about inflation

- Do you think prices will go up during the next 5 years, go down, or stay the same?
 - By what percent per year will they go up/down?
- Useful for constructing real gas price forecasts
- We add nominal forecast change to current gas price, then adjust using inflation forecast

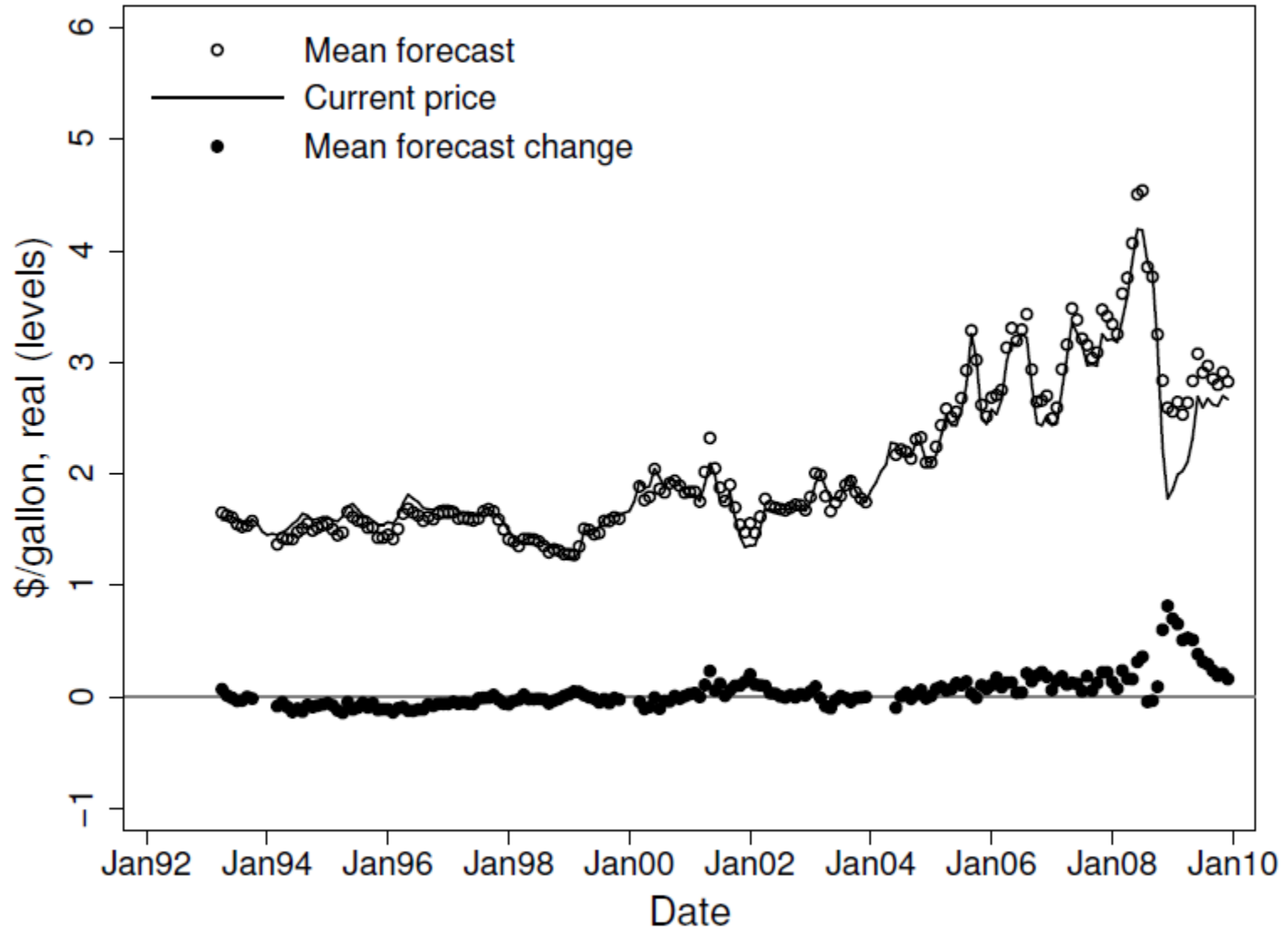
Specific questions we study

1. Are beliefs consistent with “no-change” forecast for gasoline prices?
 - Two tests: (a) zero change, (b) 1-for-1 correlation
2. Does it depend on *which* gas price we examine?
 - National vs. state-specific variation in gas prices
 - State gasoline taxes vs. pre-tax prices
3. How large and important is variation in beliefs?
4. How accurate are consumer forecasts?
 - Anderson, Kellogg, Sallee, and Curtin (2011)

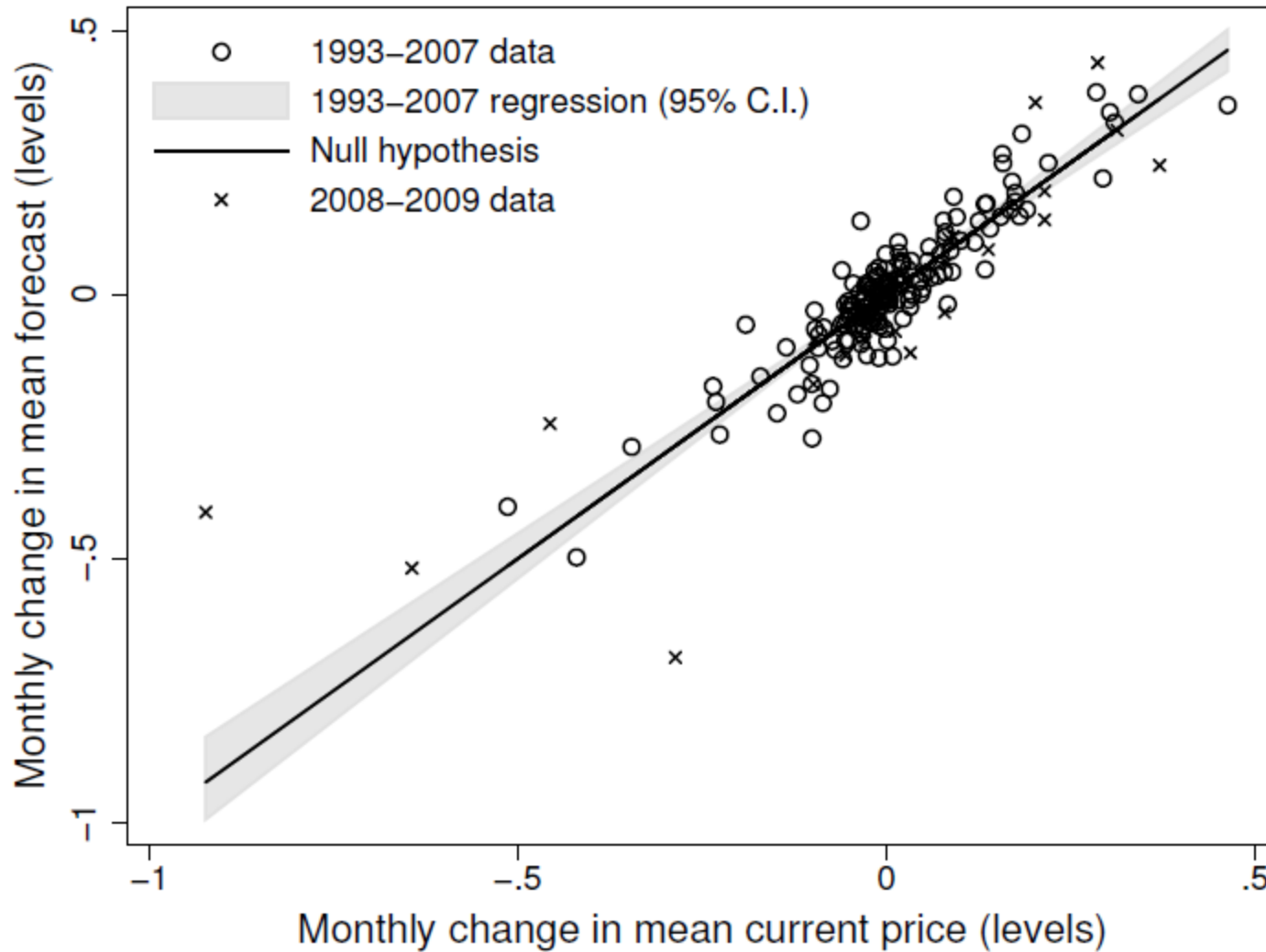
Nominal forecasts: prices will increase



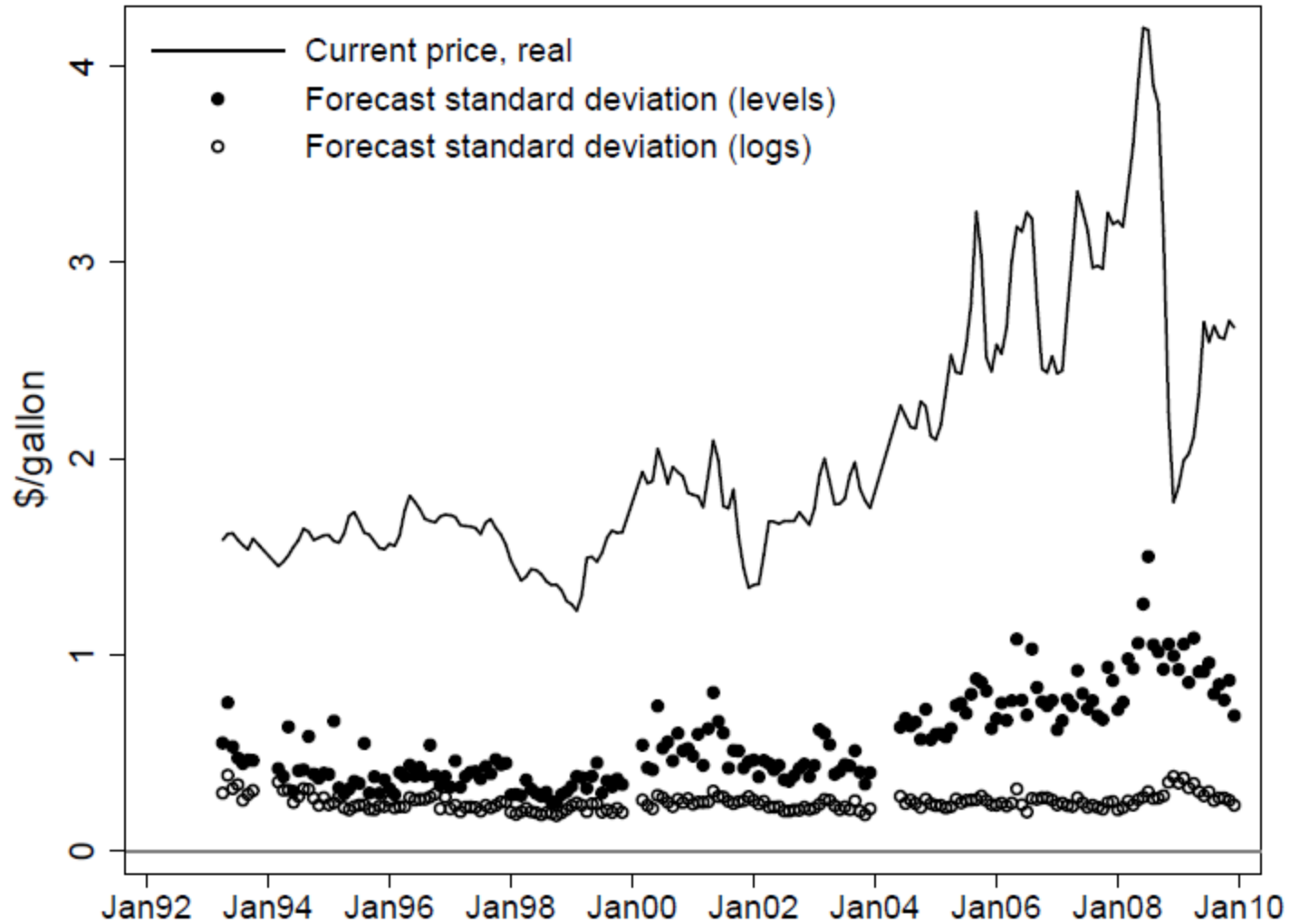
Real forecasts: prices will not change



Forecasts shift one-for-one with prices



Beliefs vary significantly across people

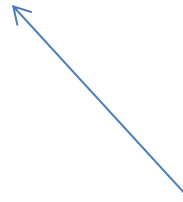


Variation in beliefs is “big” relative to other drivers of demand for MPG

Component	Gas price grows to $t = 35$		Gas price plateaus at $t = 5$	
	Raw forecasts	Persistent forecasts	Raw forecasts	Persistent forecasts
Annual miles driven	33.7	37.3	39.7	42.4
Local gasoline price	0.5	0.7	1.1	1.2
Discount factor	28.3	36.4	48.1	51.4
Gas price forecast	60.4	47.6	19.2	13.9



Stuff that varies across people that influences value of fuel economy



Fraction of variation in value of fuel economy explained by this stuff

Conclusions

- Average consumer uses a no-change forecast, at least during normal economic times
- Significant variation in beliefs that correlates strongly with gas prices (in levels)
- Relevance to energy paradox
 - Average beliefs: cannot explain paradox
 - Variation in beliefs: potentially an explanation