

Quantified Narrative Evidence on the Price-Setting Behavior of Publicly Traded Companies



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“During the recent tax season we reduced prices for our Quicken TurboTax product line in response to aggressive pricing by H&R Block and Microsoft.” (Intuit Inc, fiscal year 2000)

1. AN OVERVIEW OF THE PAPER

- Corporate reports often contain narrative discussions of firms' pricing decisions
- I search ~200,000 archived reports for such discussions and then quantify their contents
- The resulting dataset reflects unique causal information not captured by realized prices or price-setting surveys alone

1.1 Methodology

1. Search ~200,000 corporate reports for narrative discussions of pricing decisions
2. Quantify the contents of these discussions
3. Explore causes of price changes and rigidities
4. Explore time-variation in these causes
5. Link this new evidence to aggregate inflation

1.2 Properties of the dataset

- Encodes information on *why* firms did or did not change the prices of their products
- Does not reflect pre-defined answer choices
- Covers more than two full business cycles
- Each observation corresponds to a specific pricing decision a firm has actually taken

1.3 Selected findings of the paper

- Reported pricing decisions are closely related to changes in the aggregate price level
- The causes of price changes are asymmetric
- Real rigidities are important
- Pass-through depends on demand conditions
- Price durations can decrease even when rigidities become more binding
- Commodity prices explain more price changes than labor costs

1.4 Main contributions of the paper

- Introduces a new type price-setting data
- Explores various aspects of the price-setting process difficult to assess using more standard types of data
- Discusses implications for policy and theory

2. CONSTRUCTION OF THE DATASET

2.1 Automatic pre-selection of sentences

Patterns for price-change sentences

1. “we (have) [increased/decreased/raised/reduced/lowered/adjusted/changed] (*word*)(*word*)(*word*)(*word*)(*word*) [price/prices/pricing]”
2. “the company (has) [increased/decreased/raised/reduced/lowered/adjusted/changed] (*word*)(*word*)(*word*)(*word*)(*word*) [price/prices/pricing]”

Patterns for price-rigidity sentences

1. “we (were) [unable to/not able to/did not/could not/have not/had not] (*word*)(*word*)(*word*)(*word*)(*word*) [price/prices/pricing]”
2. “the company (was) [unable to/not able to/did not/could not/had not] (*word*)(*word*)(*word*)(*word*)(*word*) [price/prices/pricing]”

2.2 Manual removal of false positives

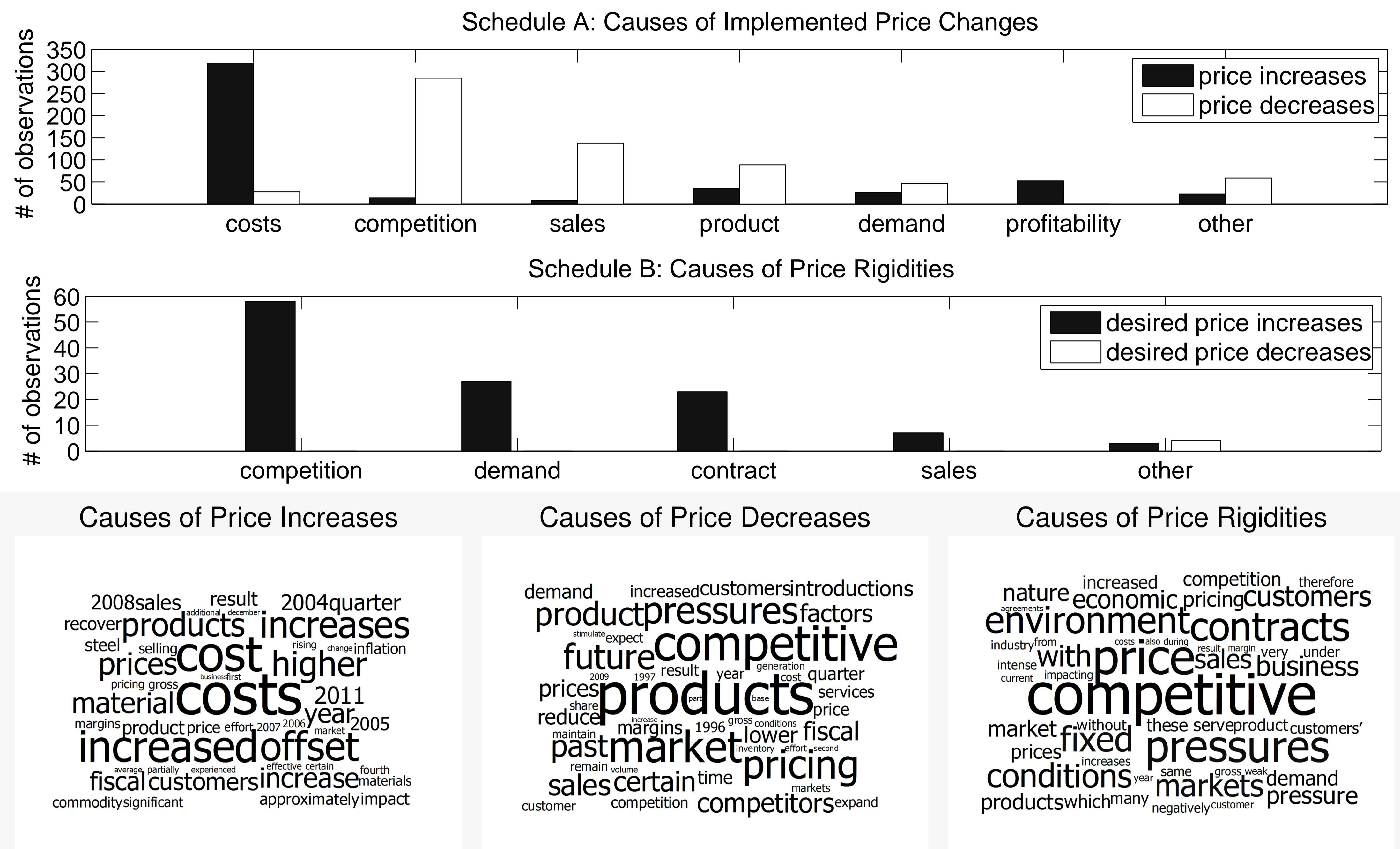
2.3 Manual quantification of contents

3. CODING A SAMPLE SENTENCE

“Due to market conditions, we were unable to increase prices to fully compensate for increased costs.”

- **sentence type:** rigidity sentence
- **direction of desired change:** price increase
- **cause of the desired change:** cost increase
- **cause of the rigidity:** demand conditions
- **company:** Westlake Chemical

4. REPORTED CAUSES OF PRICE CHANGES AND PRICE RIGIDITIES



Finding 1: The drivers of price changes are asymmetric (costs vs pricing of competitors)

- ⇒ Monetary transmission may also be asymmetric
- ⇒ Theoretical and empirical monetary models should allow for asymmetries in price setting

Finding 2: Strategic pricing complementarities (real rigidities) between competing firms are important

- ⇒ Monetary transmission may be affected by the modes and degrees of competition
- ⇒ Real rigidities are an appropriate tool for generating monetary non-neutrality in structural models

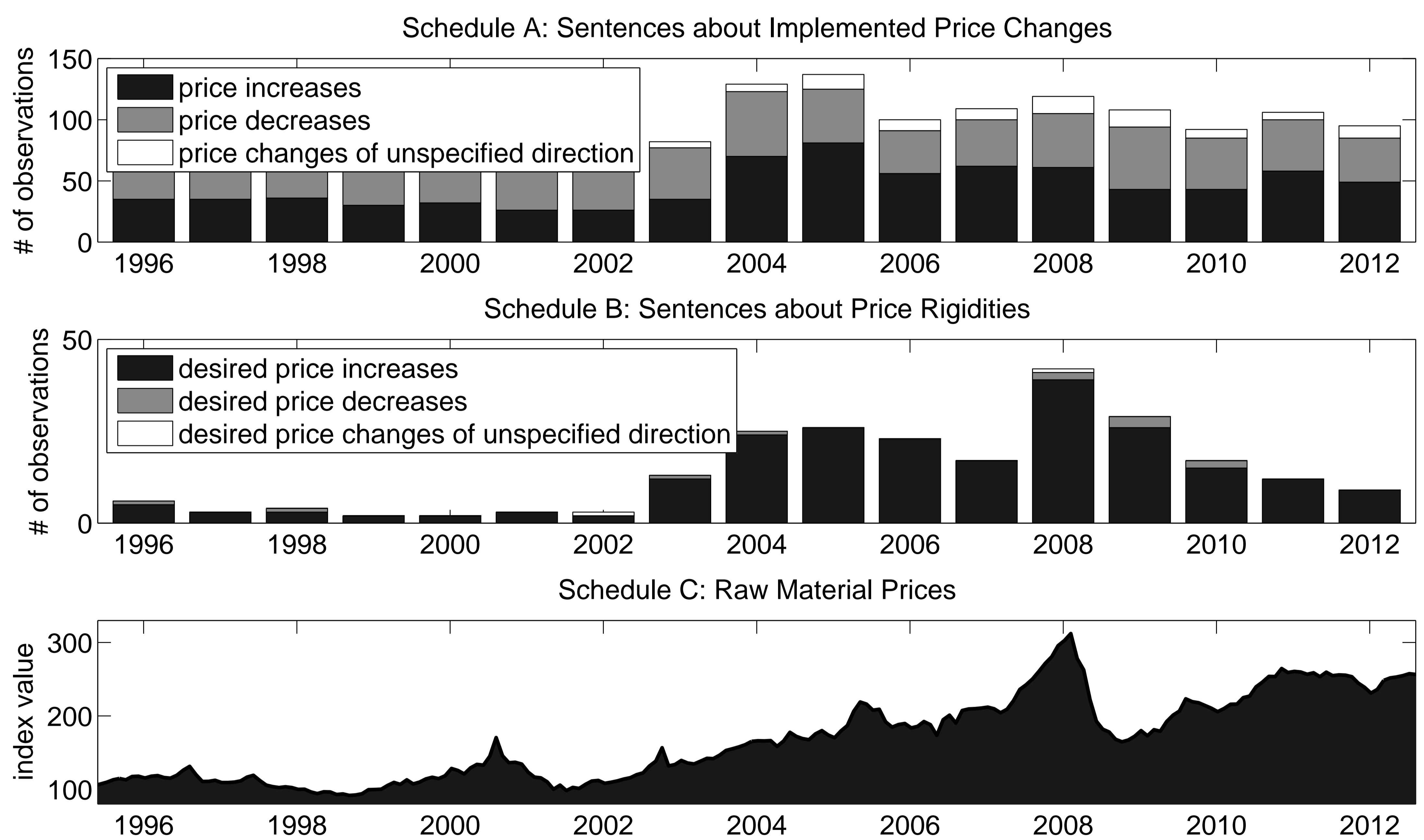
Finding 3: Price increases are impeded by competitor pricing, weak aggregate demand, and existing contracts

- ⇒ Nominal frictions alone do not accurately describe why prices are sticky
- ⇒ Pass-through and monetary transmission may vary over the business cycle

Finding 4: Raw material costs matter even beyond the food and commodity sectors

- ⇒ Positive aspect: raw-material prices respond strongly and quickly to monetary policy (e.g. Uhlig 2005)
- ⇒ Negative aspect: raw-material prices may be subject to speculation and at times be detached from fundamentals
- ⇒ Even when targeting core inflation, monetary policy should take the role of commodities into account

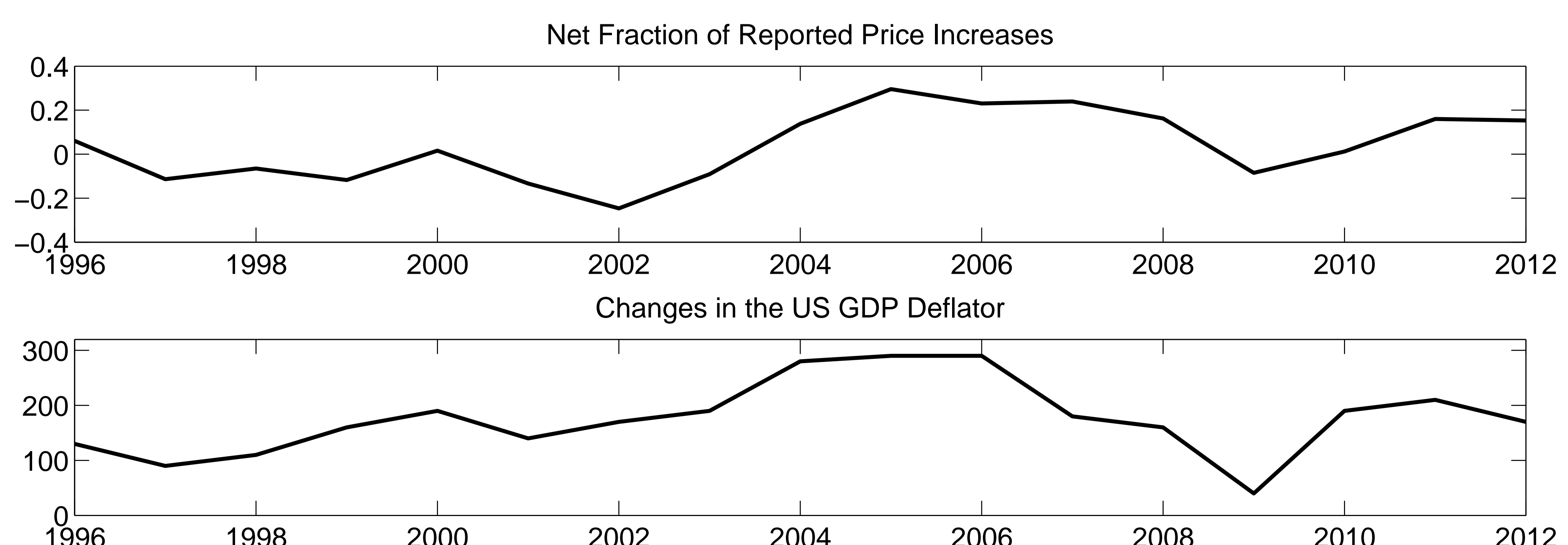
5. TIME VARIATION: PRICE CHANGES, RIGIDITIES, AND INPUT COSTS



Finding: The late-2000 commodity boom caused a simultaneous increase in price changes and price rigidities

- ⇒ Price durations alone do not necessarily measure price rigidities
- ⇒ There appear to be frictions other than fixed costs of nominal adjustment
- ⇒ These frictions stabilized inflation during the commodity boom, but were not binding before

6. COMOVEMENT BETWEEN REPORTED PRICE CHANGES AND THE US GDP DEFLATOR



Finding: The reported pricing decisions are closely related to the actual aggregate price level

- ⇒ The results of this paper are particularly informative for macroeconomists and monetary policy makers