Wage and Price Setting:

New Evidence from Uruguay Firms

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Discussion by
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This is a very interesting paper, based on a broad survey of Uruguayan firms, done in February 2013, about their price-setting behavior.

My comments:

1. A brief review of the highlights of the survey results.

2. A contrast with the results from Blinder's (1994) survey of U.S. firms.

3. Implications for theories of price setting.

Summary of some central findings

The following charts show that

1. The survey is broad-based, but with a concentration in responses from manufacturing firms.

2. Prices are set as a mark-up over costs, indicating firms have pricing power.

3. This is true across a broad range of manufacturing sectors.

4. Note that competitor's prices did not seem to play a central role.

Figures

Figure 1. Sample Distribution by Sector (in %)

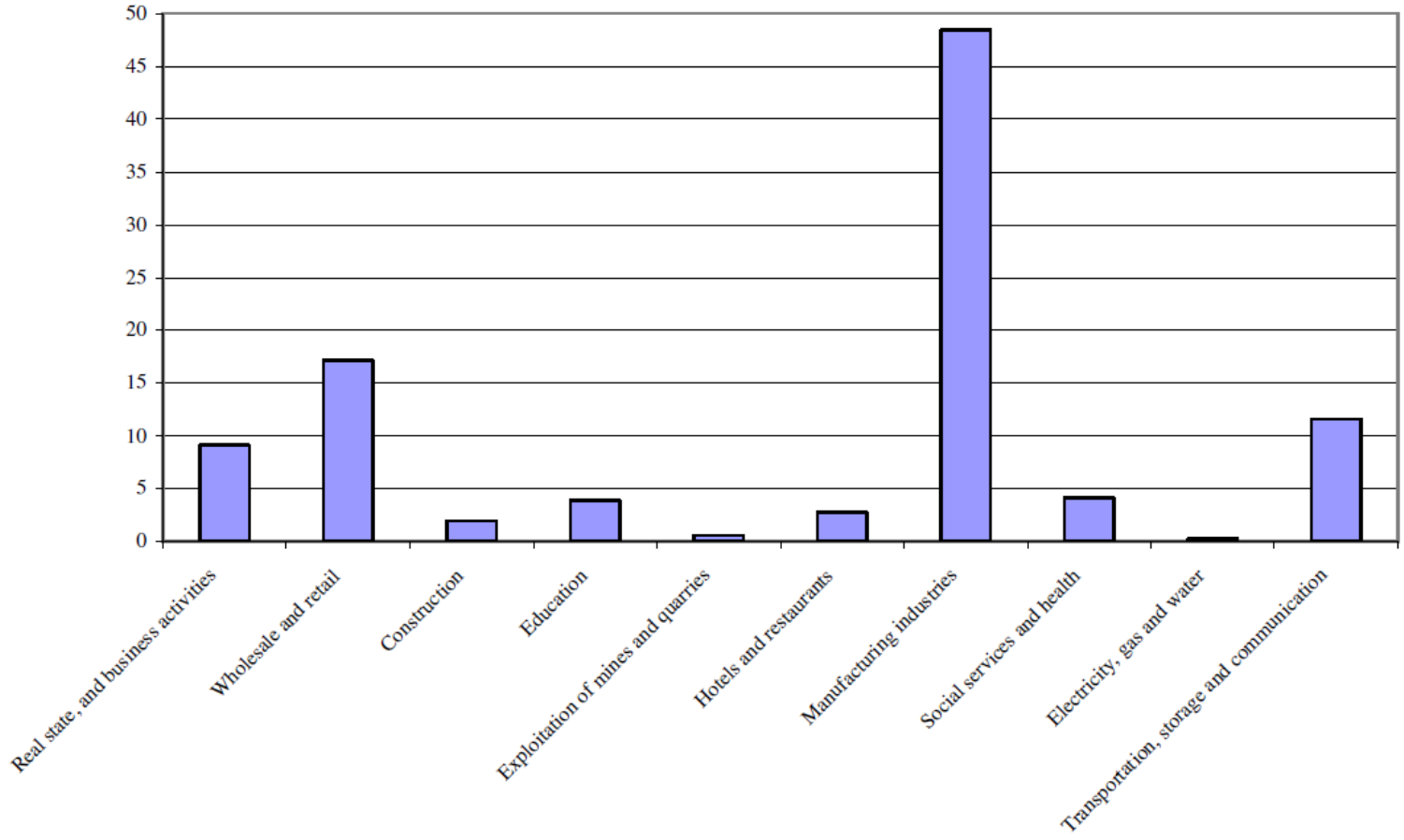


Figure 2a. Pricing of the Firm's Main Product (in %)

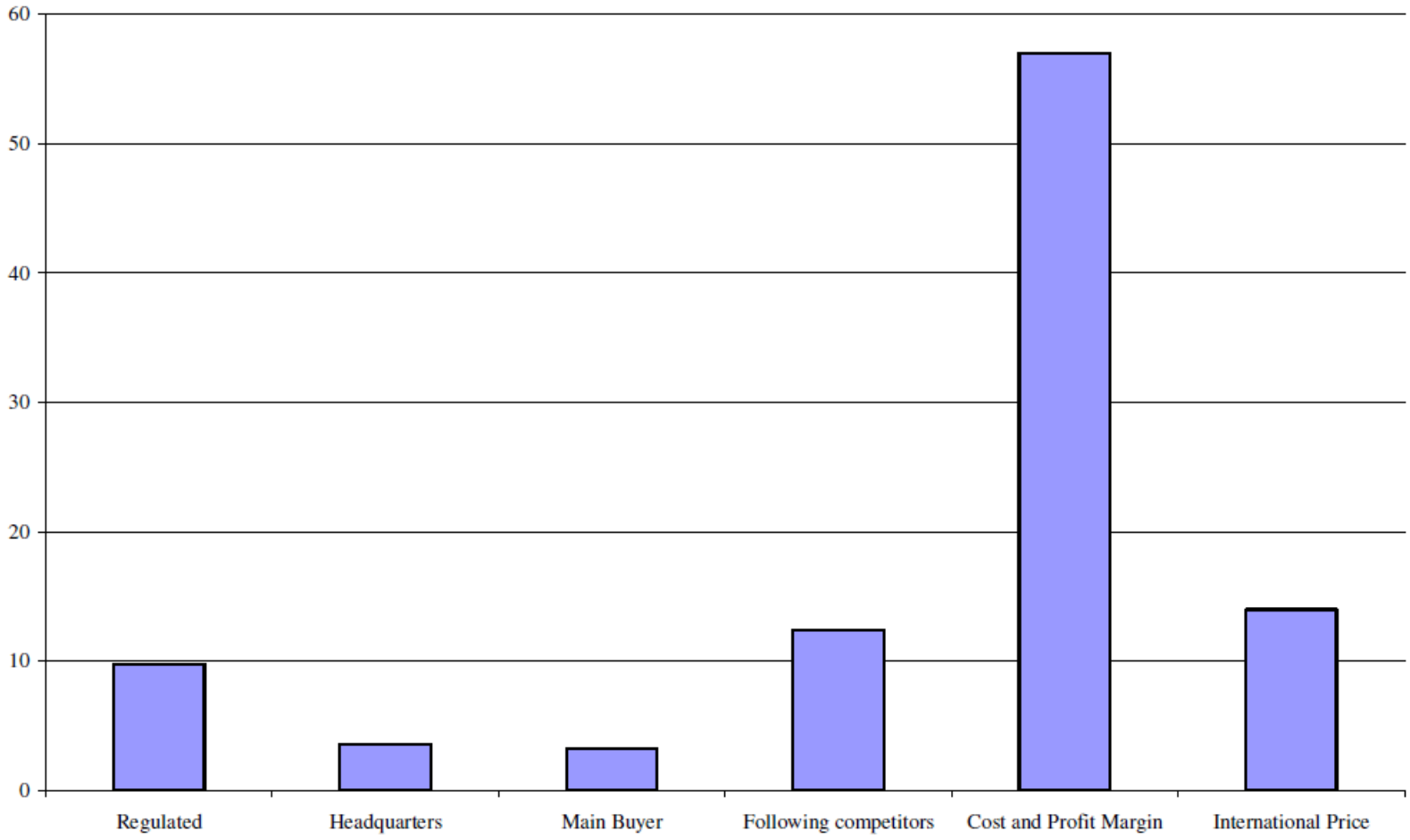


Figure 2b. Pricing of Firm's Main Product by Sector (in %)

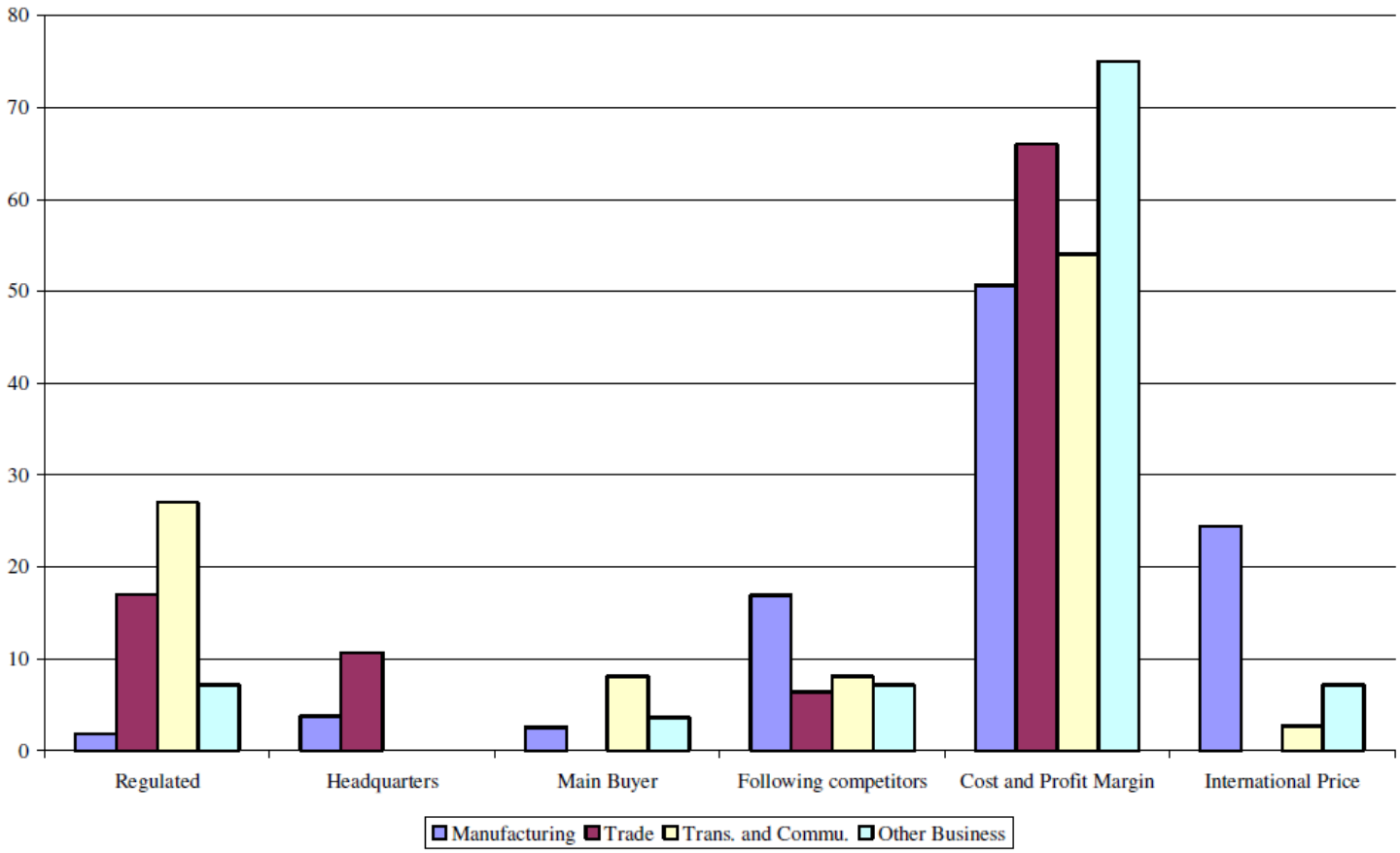
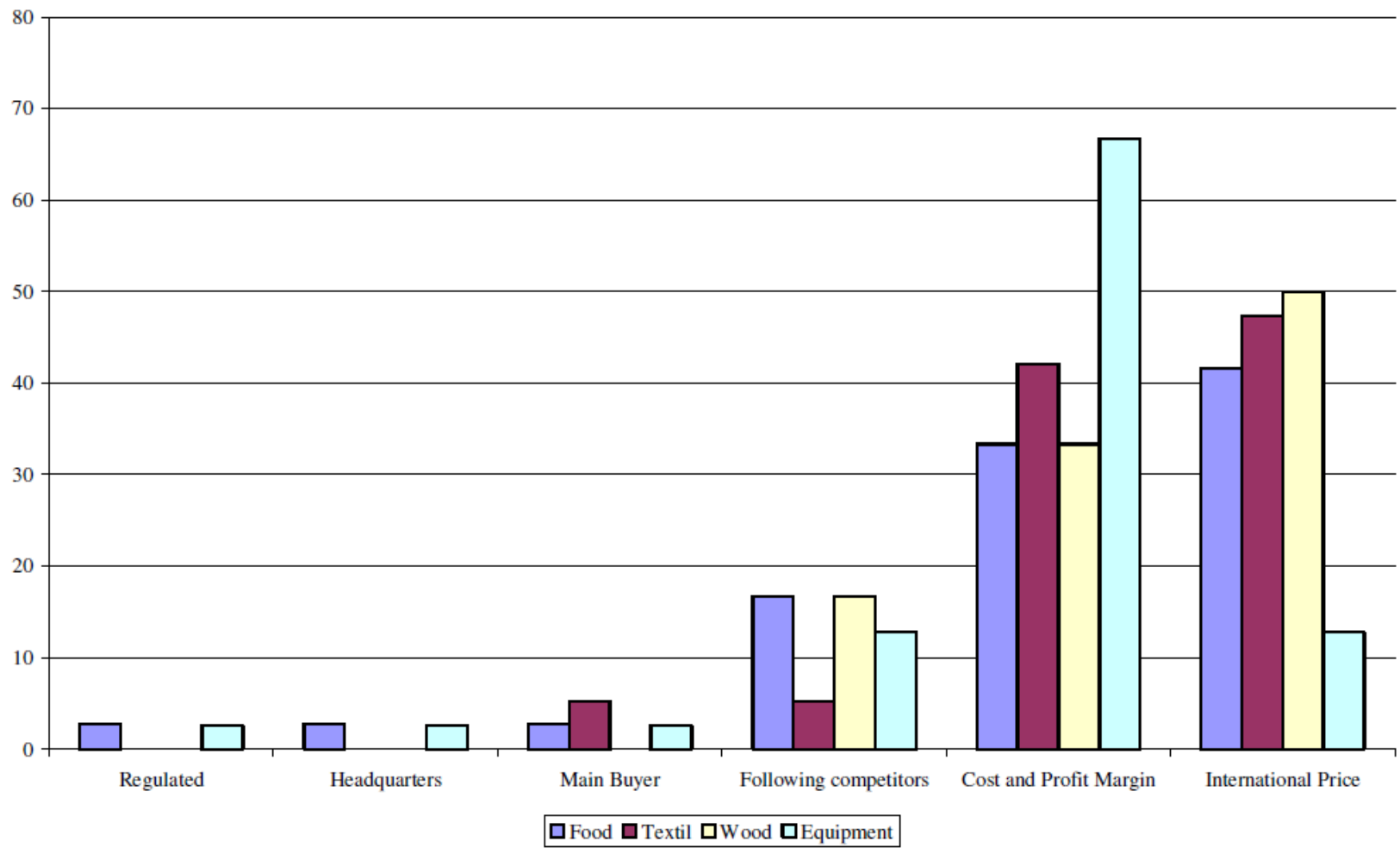


Figure 2c. Price Setting in the Manufacturing Industry by Subsector (in %)



Prices are Sticky, but not very

1. Prices are clearly sticky, but as we shall see, they are less sticky than in the U.S. survey.

2. There is no set time that firms change price

3. Prices respond relatively quickly to wage changes, but keep in mind that wage changes are infrequent and their timing is known.

Figure 3. Frequency of Price Adjustmetn (in %)

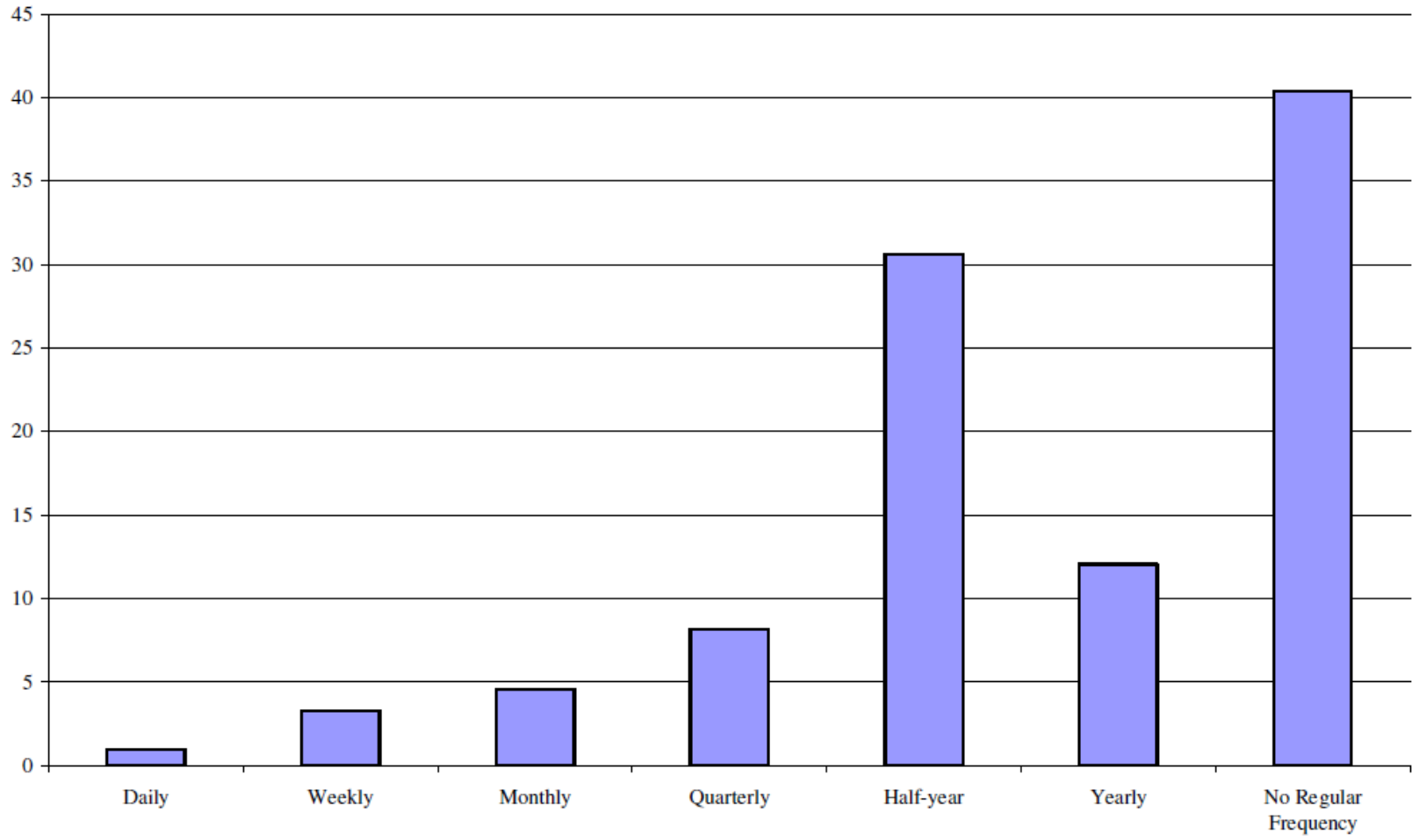


Figure 10. Months to Adjust Prices when Wages Change
(In %)

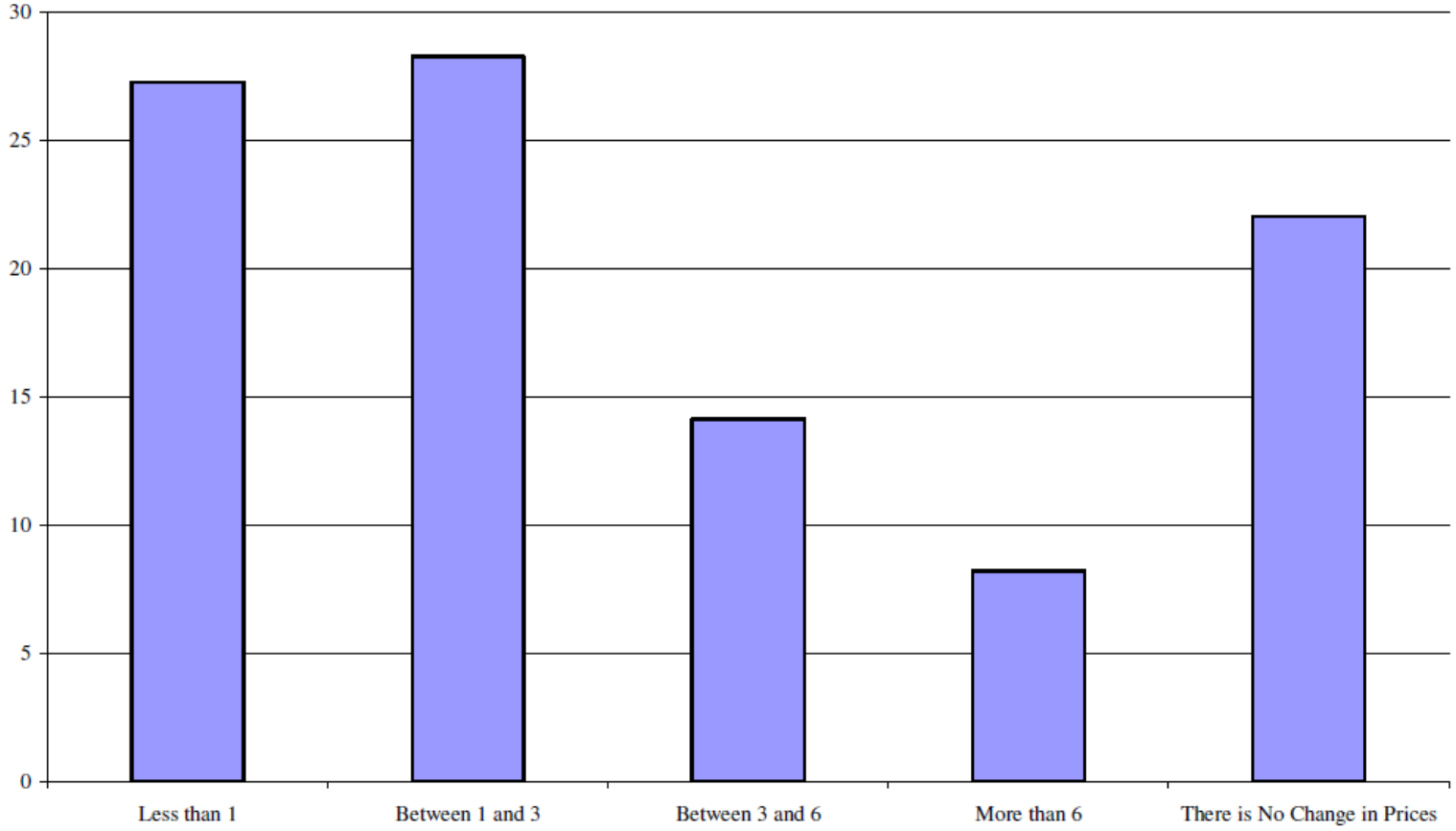


Figure 4. Are Price Changes Concentrated in a Particular Month?

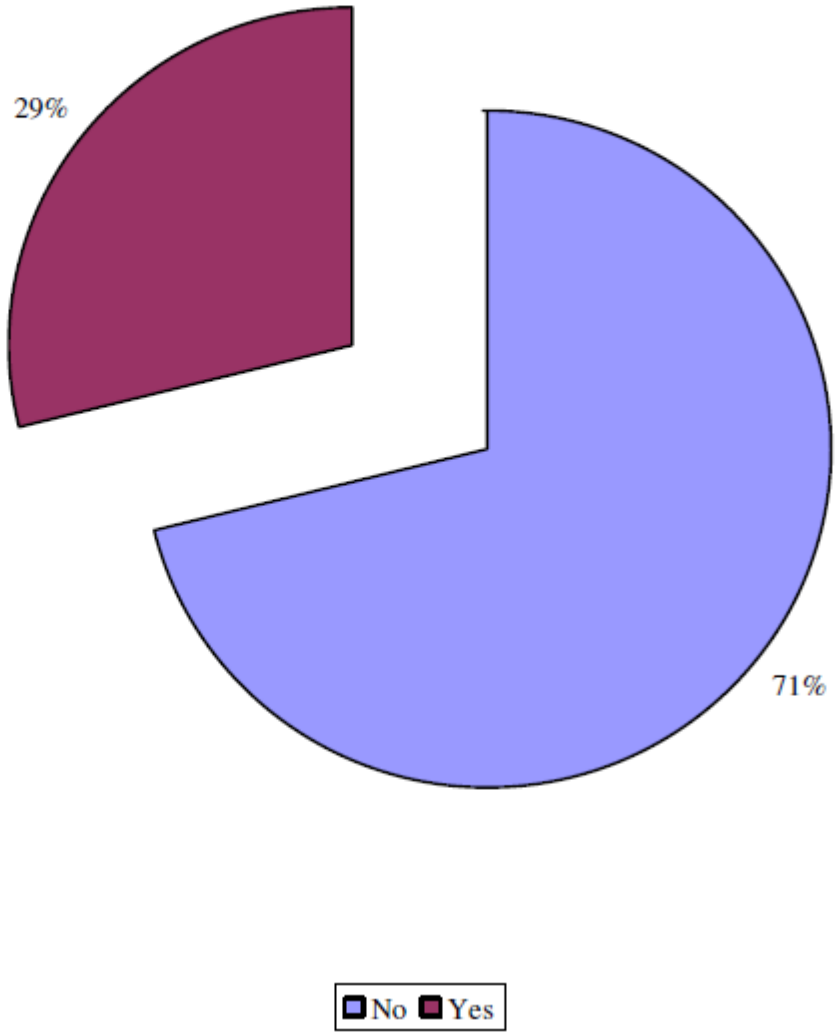
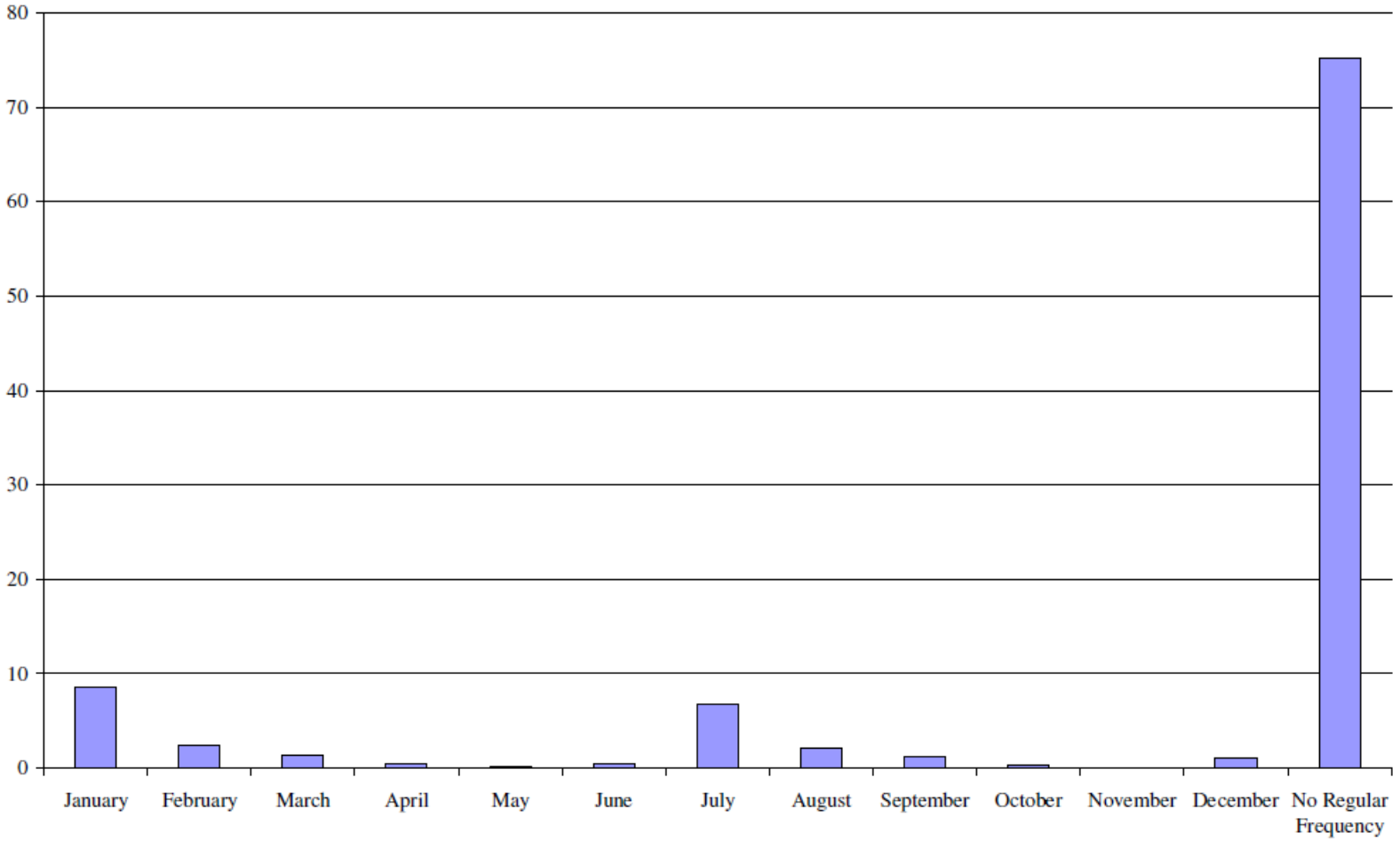


Figure 5. Price Changes by Month (in %)

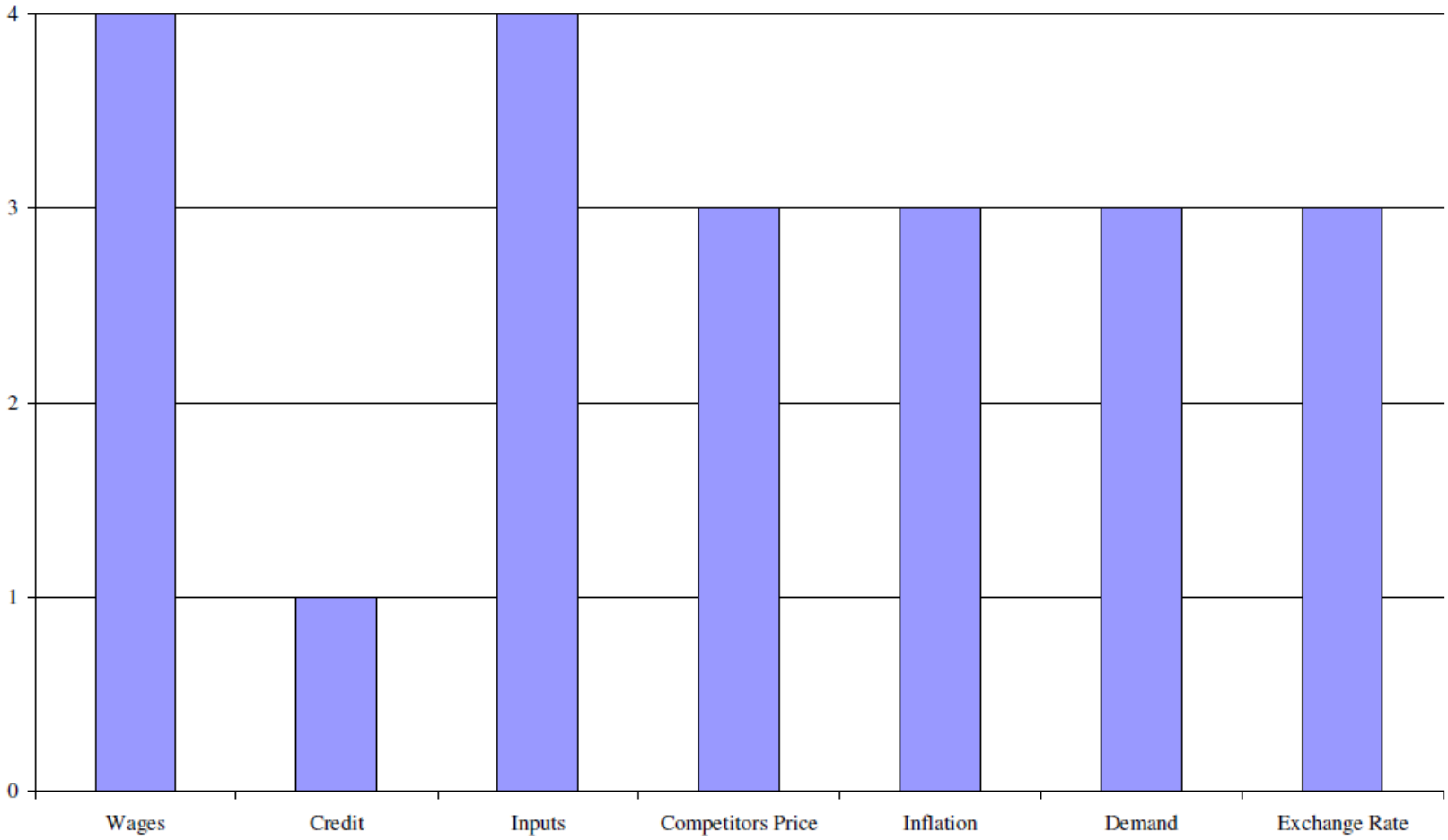


Other factors do matter for price setting

I interpret the following chart to say that firms actually do pay attention to many factors when setting prices:

1. Wages
2. Material costs
3. Competitors' prices
4. Macro factors (inflation and exchange rates.)

Figure 6. Factors Determining Price Increases (Median Response)
1=Not Relevant, 5=Very Relevant

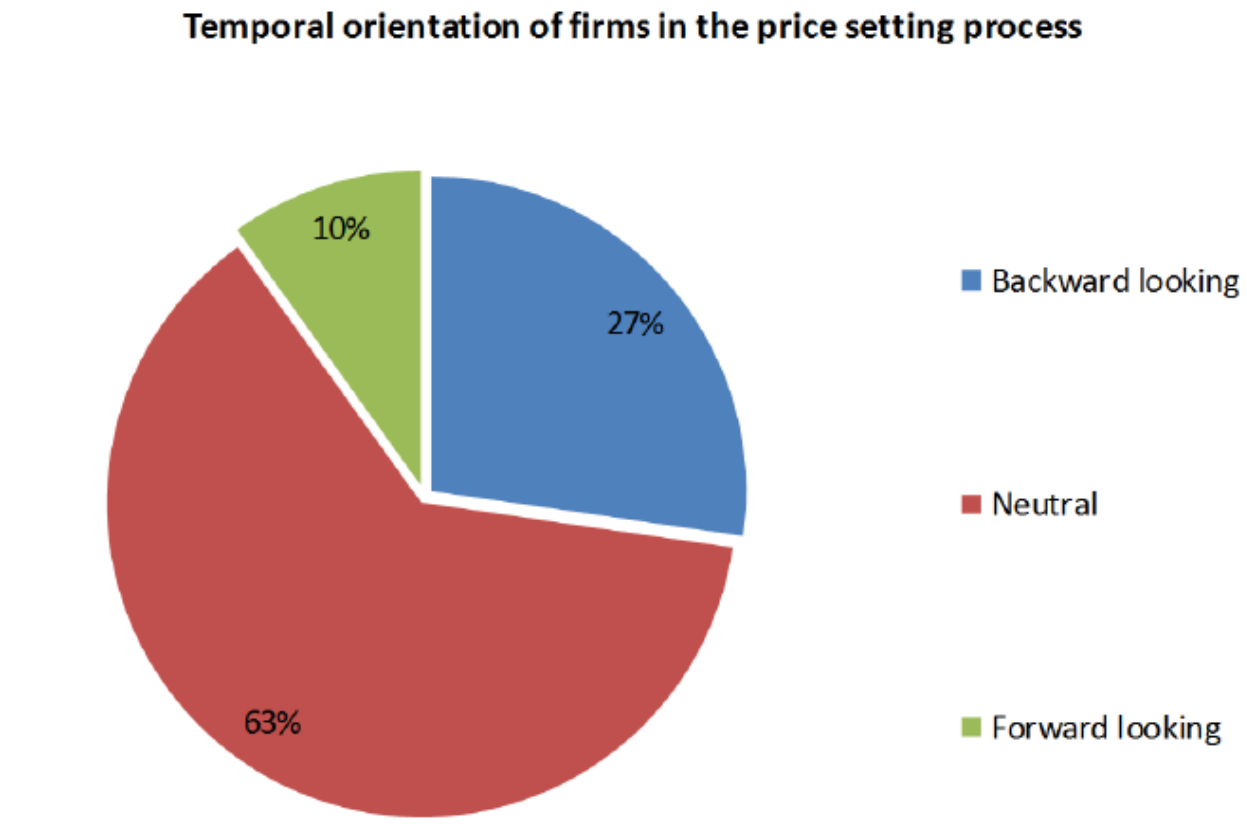


Other findings

1. Firms mostly look at the current state when setting prices – neither forward- nor backward-looking.

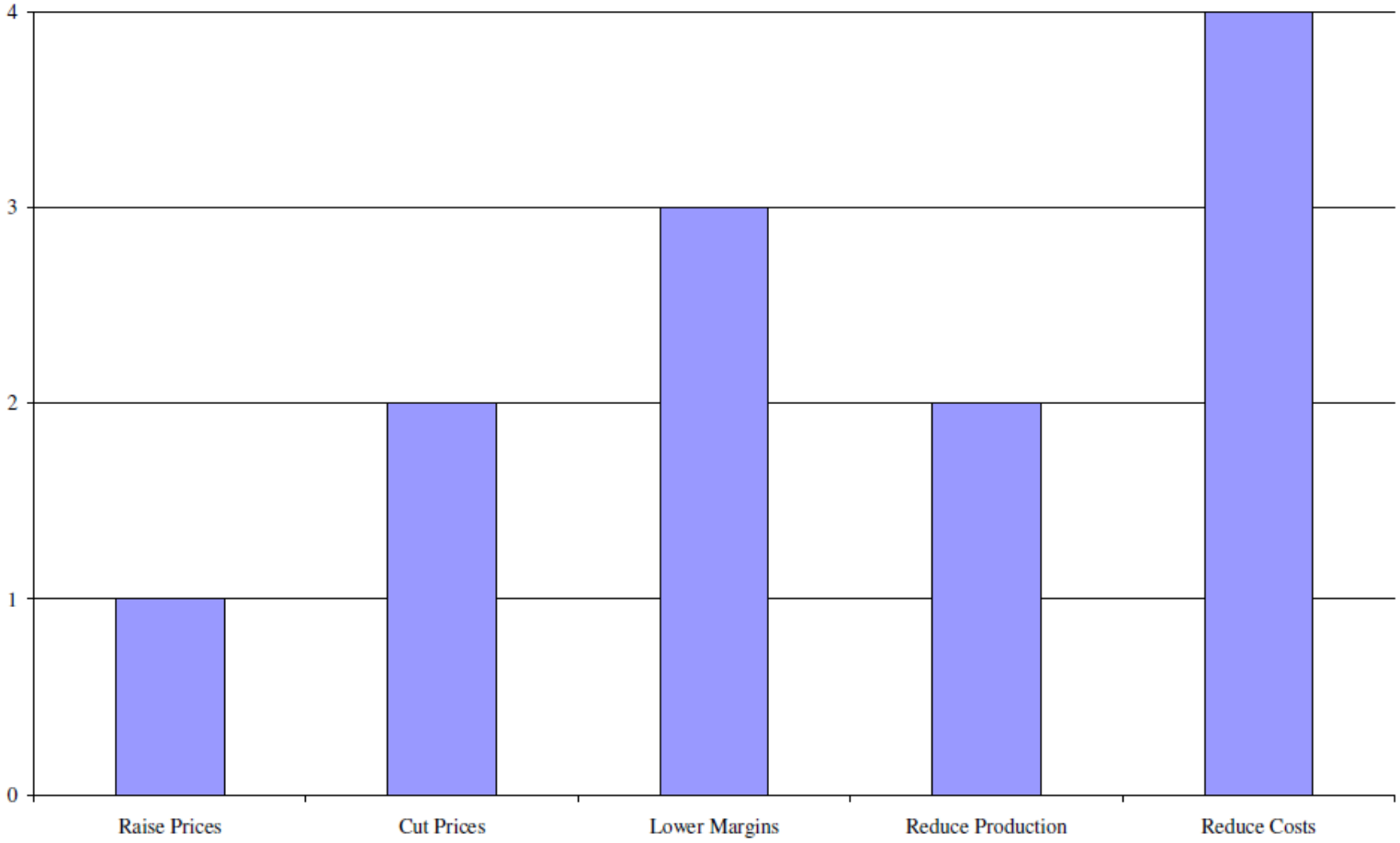
2. Firms react by “cutting margins” or “reducing costs” when demand falls. Cutting prices or reducing output are less common!

Figure 7.



Source: Price setting survey (INE).

Figure 11. Firms Reaction to an Unexpected Sales Fall
1=Not Relevant, 5=Very Relevant



First, I have a reaction similar to the one of Olivier Blanchard, in his comments on Blinder (1994):

“Role reversal may be useful here. Suppose that a businessman decided to find out how economists thought about inflation. Having drawn a list of theories-inflation is due to money growth; inflation is due to changes in relative prices; inflation is due to budget deficits, inflation is due to union militancy, inflation come from depreciation, and so on- he came to Blinder and asked him to rank the theories from 1 to 4. Blinder would boil at the idea of being so constrained in his answers, but would see most statements as having a grain of truth, and would give a lot of 2s and 3s. Being an academic, he would then qualify his answers at length.”

Blinder's (1994) survey finds less frequent price adjustment than the Uruguayan survey.

However, at the time of the Uruguayan survey, inflation was 8-9% annually, but at the time of the U.S. survey, inflation there was around 3% annually. The pressure to change prices is lower in a low-inflation environment.

Table 4.1 **Frequency of Price Adjustment (number of times per year)**

Frequency	Percentage of Firms
Less than once	10.2%
Once	39.3%
1.01 to 2	15.6%
2.10 to 4	12.9%
4.01 to 12	7.5%
12.01 to 52	4.3%
52.01 to 365	8.6%
More than 365	1.6%

Blinder's survey asks different questions.

Instead of asking firms how they set prices, the survey asked them to assess theories of why prices adjust slowly.

The leading theories were "cost-based pricing with lags" and "coordination failure."

In this sense, really, the results are not very different than what we find for Uruguayan firms.

Table 4.3 The Twelve Theories

Theory Number and Name		Brief Description
B1	Nominal contracts	Prices are fixed by contracts
B2	Implicit contracts	Firms tacitly agree to stabilize prices, perhaps out of "fairness" to customers (Okun 1981)
*B3	Judging quality by price	Firms fear customers will mistake price cuts for reductions in quality (Allen 1988)
B4	Pricing points	Certain prices (like $9.99) have special psychological significance (Kashyap 1992)
*B5	Procyclical elasticity	Demand curves become less elastic as they shift in (Bils 1989; Shapiro 1988)
B6	Cost-based pricing with lags	Price rises are delayed until costs rise (Gordon 1981; Blanchard 1983)
*B7	Constant marginal cost	Marginal cost is flat and markups are constant (Hall 1986)
*B8	Costs of price adjustment	Firms incur costs of changing prices (Rotemberg 1982; Mankiw 1985)
B9	Hierarchical delays	Bureaucratic delays slow down decisions
*B10	Coordination failure	Firms hold back on price changes, waiting for other firms to go first (Ball and Romer 1991)
B11	Inventories	Firms vary inventory stocks instead of prices (Blinder 1982)
B12	Delivery lags, service, etc.	Firms prefer to vary other elcmcnts of the "vector," such as delivery lags, service, or product quality (Carlton 1990)

Table 4.4 Ratings of the Twelve Theories

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rank	Theory Number[a]	Mean Score	Standard Deviation	*t*-statistic[b]	Accept Rate	Premise?
1	*B10	2.77	1.25	1.0	60.6%	100.0%
2	B6	2.66	1.26	0.6	55.5	100.0
3	B12	2.58	1.20	1.6	54.8	77.0
4	B2	2.40	1.26	2.1**	50.5	68.3
5	B1	2.11	1.25	1.8*	35.7	62.2
6	*B8	1.89	1.18	0.4	30.0	64.3
7	*B5	1.85	1.07	0.8	29.7	58.5
8	B4	1.76	1.04	1.8*	24.0	50.8
9	*B7	1.57	1.03	0.1	19.7	48.4
10	B11	1.56	0.97	1.9*	20.9	85.6[c]
11	B9	1.41	0.87	1.2	13.6	100.0
12	*B3	1.33	0.77	—	10.0	21.0

When given the chance, or when the ideas are suggested to them, in the Blinder survey (like the Uruguayan survey), firms acknowledge that many factors affect price setting:

1. Other firm's prices.

2. They don't want to antagonize customers with price increases.

3. Cost of changing prices.

And, like Uruguayan firms, U.S. firms have a variety of strategies for dealing with demand changes (though the Blinder survey offers fewer options.)

Table 4.5 **Why Don't You Change Prices More Frequently Than That? (n = 217 responses from 171 firms)**

Response	Number of Firms
It would antagonize or cause difficulties for our customers	41
Competitive pressures	28
Costs of changing prices (**B8**)	28
Our costs do not change more often (**B6**)	27
Coordination failure, price followership (**B10**)	15
Explicit contracts fix prices (**B1**)	14
Custom or habit	11
Regulations	7
Implicit contracts with regular customers (**B2**)	5
Miscellaneous other reasons	20

Note: Bold-faced numbers in the table refer to the theories listed in table 4.3.

Table 4.6 **Distribution of Ratings of the Coordination Failure Theory (n = 198)**

Code	Response	Percentage of Firms
1	Totally unimportant	27.5%
2	Of minor importance	10.6%
3	Moderately important	19.4%
4	Very important	42.4%

Note: Mean response = 2.77. Mean response among those not answering 1 = 3.41.

Table 4.7 **B10(b). Do You Also Delay Price Cuts Because You Do Not Want to Be among the First Firms in the Industry to Cut Prices? (n = 183)[a]**

Code	Response	Percentage of Firms
1	Rarely or never	61.3%
2	Sometimes	13.8%
3	Usually or always	24.8%

Note: Mean response = 1.63.

[a]Twenty firms answered, "We never cut prices"; hence we have only 163 *numerical* responses.

Table 4.12 **Reactions to Changes in Demand (B8(f), [h]. When your demand rises [falls], do you normally prefer to raise [decrease] your production, increase [cut] your prices, or both? [n = 78 (76)])**

Code	Response	Percentage of Firms when Demand Rises	Percentage of Firms when Demand Falls
1	Level of production	61.5%	36.8%
2	Prices	4.5%	27.0%
3	Both	34.0%	36.2%

Price Adjustment in Theory and Practice

Evidence shows that for many firms, the price setting process is very costly.

Zbaracki et. al. (2004), ReStat:

1. Menu costs
2. Managerial costs (information gathering, decision-making, communication costs)
3. Customer costs (communication and negotiation costs)

Also evidence of fear of antagonizing customers.

Price setting costs are 1.2% of revenue and 20% of margins

Price Setting versus Optimal Price Setting

The frequency of price setting does not measure the speed of adjustment of prices toward the equilibrium price that would prevail under freely flexible prices.

1. The price setting process is costly. Each time prices are changed, information is gathered and analyzed.

    a. When prices are changed more frequently (e.g., when inflation is 8%), it probably makes sense to adjust prices based on less-than-full information.

    b. Wages may play a large role because they may provide information about costs, demand, inflation, etc.

Price Setting versus Optimal Price Setting

2. Even if prices are set optimally, they may not be set at the equilibrium level.

a. When price setting is not synchronized with other firms, each time firms change prices optimally, they must keep in mind prices of those firms not currently changing their price.

b. When price and wage setting are not synchronized, the iteration toward the equilibrium could be protracted.

c. The time to adjustment could perhaps be longer when firms do not have perfect information about other firms and about workers.

Conclusions

This is a very nice paper. There is a lot of value in asking firms what they actually do, rather than just theorizing what they ought to do.

In practice, firms' pricing decisions are probably complex. In addition, firm managers probably do not have coherent theories about how to set prices, as economists do.

So, surveys don't tell us everything. These surveys that tell us what **firm managers say**, and should be combined with empirical work that uses data of what **firm managers do**.