



OESTERREICHISCHE NATIONALBANK

Stability and Security.

WORKSHOPS

Proceedings of OeNB Workshops

*Price Setting
and
Inflation Persistence
in Austria*

December 15, 2005



No. 8

Comment on “Price-Setting Behavior of Austrian Firms: Some Survey Evidence”

Thomas Y. Mathä¹

Banque centrale du Luxembourg

1. Introduction

This paper reports the findings of a survey on the price-setting behavior of Austrian firms, which was conducted at the beginning of 2004 among over 2,400 Austrian firms. It is part of a wider initiative that aims to analyze the price rigidities and the degree of inflation persistence in the Eurosystem. In this respect, surveys constitute a research methodology only recently exploited for the analysis of price rigidities. Blinder et al. (1998) pioneered using surveys to obtain information of firms’ price setting practices and the reasons for price stickiness in particular. Surveys have been conducted for firms in Canada, Japan, Sweden and the U.K. since – now also including Austria and several other Eurosystem countries. Surveys help to improve our understanding of the underlying sources and characteristics of the frictions firms encounter when setting prices. Importantly, surveys go beyond the simple quantification of existing price rigidities and provide new important insights at the much desired micro or firm level, thereby helping to improve our understanding of the wider monetary transmission process, an area of key interest for central banks.

However, surveys do not come without problems. There is always a sampling issue. Furthermore, the answers may be sensitive to the way questions are posed. The sincerity of the respondent’s answers is unknown, or worse, the answers may not make sense as contradicting answers are given. Firms are normally given a list of predefined answers to choose from. However, these lists may neglect the most important answer for individual firms. Hence, scrutiny needs to be applied at every stage of the survey.

¹ Banque centrale du Luxembourg, Monetary, Economics & Statistics Department, 2, Bd Royal, L-2983 Luxembourg, Luxembourg, E-mail: Thomas.Mathae@bcl.lu. The views expressed in this paper are personal views of the authors and do not necessarily reflect those of the Banque centrale du Luxembourg or the Eurosystem.

2. The Austrian Survey

The survey by Kwapil, Baumgartner and Scharler discloses hitherto unknown and hidden characteristics of Austrian firms in general and their price-setting practices in particular. We learn about price review and price change frequencies, the reasons why firms do not change prices, the factors of relevance for price in/decreases, as well as the speed at which prices are adjusted depending on the direction and sources of shocks. The general survey design, its overall structure, as well as the type of questions asked in the survey are, due to the collaborative effort within the Eurosystem Inflation Persistence Network (IPN), similar to those of other participating NCBs.

However, each participating NCB deliberately designed the survey, such that national characteristics and idiosyncrasies are reflected. Compared to the surveys of other Eurosystem NCBs, the Austrian survey is very detailed in some particular areas of interest. Unlike other surveys, it distinguishes for example between price increases and decreases, small and large economic shocks, and it specifically requests information on price guarantees with clients and the duration thereof. Unfortunately, it only covers industry and industry related services. A broader economic coverage including, construction, services and trade would have been very welcome. The IPN network results show that sizeable sectoral differences in price rigidities exist. For example one of the most robust findings of the IPN network relates to services being different. Services' prices change rarely and even more rarely downwards (e.g. Dhyne et al., 2005).

Overall, the results presented in this paper are comparable with the results reported for other euro area countries (see Fabiani et al., 2005 for a cross-country comparison). Yet explicit comparisons of country results are, while very tempting, a difficult undertaking, as the sectoral composition of the firms surveyed differs substantially from country to country. Without going into quantitative details, the similarities include:

1. that the price setting takes place in two stages – the price reviewing stage and the price-setting stage,
2. that firms use both time- and state-dependent price reviewing practices,
3. that explicit and implicit contracts rank among the most important reasons for price rigidities, and
4. that the adjustment speed of prices depends both on the direction and the source of the shock.

2.1 The Price Setting Takes Place in Two Phases

The prices are first reviewed and then eventually changed. As Kwapil, Baumgartner and Scharler show, Austrian firms tend to review prices more often than they change them. The modal frequency of price reviews is quarterly, while

the modal price change frequency is annual – both results square well with those from other Eurosystem surveys.

One point of interest, extending beyond the actual frequencies, is to what extent these frequencies are governed by existing price frictions and to what extent firms review and change prices at the same frequencies. Put differently under what circumstances would we expect this not to be the case? In addition, what do different price review and price change frequencies imply for the size of price adjustment costs? For example, those firms that review and change prices at different frequencies, do they face higher adjustment costs at the second stage of the price setting than firms that review and change their price at the same frequencies? What would we expect to be the equilibrium outcome? These are intriguing questions waiting to be explored.

2.2 Firms Make Use of Both Time-Dependent and State-Dependent Price-Setting Rules

Kwapil, Baumgartner and Scharler report that 38% of the firms use purely time-dependent pricing rules, 30% use both time- and state-dependent pricing rules while 25% use purely state-dependent pricing rules. In comparison to other euro area countries (see Fabiani et al., 2005), the share of firms using state-dependent rules is lower. The authors conclude from this that the effect of a nominal monetary policy shock on the real economy could be larger in the short run than would be the case if the share of state-dependent firms was higher. This is intuitive as a higher share of state-dependent firms raises the share of firms that can react immediately to economic shocks, unlike time-dependent firms which have to wait their turn.

Nonetheless, I wonder whether this result per se suffices for this conclusion. Firstly, the paper does not compare the price review and price change frequencies of state- and time-dependent firms, which would give an indication of whether there were indeed differences between time- and state-dependent firms. For example, the survey results for Canadian firms show that state-dependent firms changes prices five times more often than time-dependent firms (Amirault et al. (2004)). Using a non-negative binominal specification, the price change frequency could be regressed on firm-specific characteristics, such as time- vs. state-dependent price reviewing behavior, some competition measures as well as other firm- and sector-specific controls. As state-dependent firms are not requested to disclose how often they undertook a price review, the price review frequency could only be incorporated as regressor when interacted with a dummy variable indicating that the firm is of the time-dependent type. Such a regression would certainly return results that could be interpreted and would strengthen or weaken the above made argument.

However, even a regression analysis, as is suggested, would not be able to deliver entirely conclusive evidence. State-dependent firms may review and change

their prices infrequently simply because there is/was no economic shock. Not knowing whether or not firms were hit by an economic shock renders the comparison between state- and time-dependent firms very difficult. Thus, state-dependent firms may appear very sticky in a very stable business environment, yet very flexible in a volatile environment – difficult to know what the maximum enticed flexibility would be. Lastly, we always assume that the price reviewing process is exogenous to the firm, but this need not be the case. The price review cost may be specific to the firm and may depend on whether the firm adopts a backward- or forward-looking price reviewing behavior. A firm with a high cost price review may find it optimal to review prices only if the economic conditions change, while a firm with a low cost price review may find it optimal to review prices on a regular basis. Moreover, firms may alter their behavior, as the Austrian and other euro area country results show. The Austrian survey results show, 30% of firms demonstrate flexibility in the way they conduct price reviews. They switch from time-dependent behavior to state-dependent behavior in the case of economic shocks.

In a nutshell, I believe that surveys, as they have been undertaken so far, are not well suited to answer the question whether state-dependent or time-dependent firms are more flexible.

3. Reasons for Price Stickiness

A central question in most surveys of the euro area wide research network (including the Austrian survey) is the request of firms to disclose, in a list of various theories, to what extent a particular theory is recognized as important for not changing prices (typically a choice is given ranging from (1) “unimportant” to (4) “very important”). The answers are ranked according to the average score they receive. Implicit and explicit contracts most often figure among the top four theories. However, with an average score of 2.7 and 2.6 for the euro area (see Fabiani et al. 2005), their scores are barely higher than the theoretically expected value of 2.5 of a uniform distribution between (1 and 4). Nevertheless, the existence of im/explicit contracts are judged to highly relevant a reason for price rigidities.

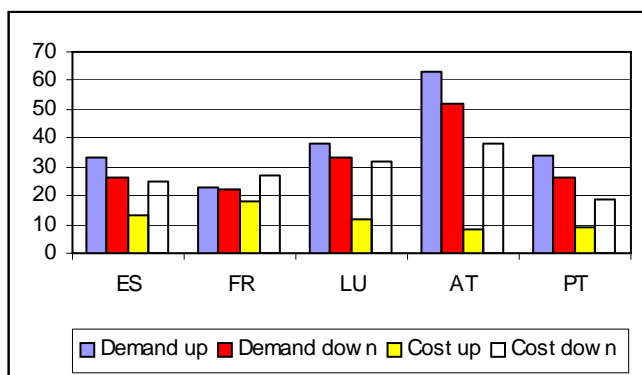
Similarly, the Austrian survey provides a list of reasons for price rigidity and asks firms whether and to what extent they recognize the listed theories as reasons for not changing their prices. In line with the high proportion of regular customers (85%) implicit and explicit contracts are recognized most strongly by firms as reasons for not changing their prices, followed by cost-based pricing, kinked demand curve and coordination failure. Other theories often cited in the academic literature such as menu costs and information costs are in contrast not very well recognized.

Now, it would have been interesting to learn whether these “revealed” impediments can also explain price change frequencies and differences therein. As reported in the paper, the overall price change frequency figures disguise important sectoral variations. Firms in the sectors “consumer durables”, “consumer non-durables” and “services” have lower price review and price change frequencies than the firms in the sectors “intermediate goods” and “capital goods”. Can these differences, at least in part, be explained by differences in the importance attached to the respective theories? Theoretically, all theories should have a negative influence on the price change frequency. Similarly, the indication whether the firms’ clientele is mostly comprised of long-term or short term customers should matter.

4. Double Asymmetry in Price-Setting Behavior

An important finding is what I would refer to as a double asymmetry in the price-setting behavior of firms. The response depends on both the source and the direction of the shock. A result common to some Eurosystem surveys, including the Austrian survey, is that prices react faster to rising costs than to strengthening demand, while the opposite is the case for reverse shocks. Furthermore, prices react faster to rising costs than to weakening demand. Noteworthy from an Austrian perspective is that the share of firms not responding (i.e. not changing prices) to demand shocks is seemingly larger than in the other euro area countries depicted in Figure 1. A possible explanation may be the high or relatively higher importance attached to implicit and explicit contracts and cost based pricing in particular in explaining the price stickiness of Austrian firms than in other euro area countries (see Fabiani et al., (2005)).

Chart : Percentage of Firms Not Changing Prices after Specific Shocks



Source: Fabiani et al. 2005.

Furthermore, asking Austrian firms to disclose the relevance of specific factors for price increases and decreases reveals that wage costs, intermediate goods prices followed by quality improvement and taxes are most important for price increases, while changes in competitors' prices followed by intermediate goods, productivity improvements and weakened demand are most important for price reductions. Noteworthy from the Austrian perspective is the high size of the asymmetry in case of labor costs.

As the authors argue, these results point to an asymmetric monetary policy response – an important contribution of surveys to our understanding of monetary policy.

5. Summing up

As stated in the introduction, surveys are very good means to obtain information that would otherwise not be available. Surveys should be seen as a good complement to the use of quantitative micro data sets in order to get to the roots of price rigidities. The price-setting survey by Kwapil, Baumgartner and Scharler is the first survey of this kind undertaken for Austrian firms.

The survey provides plenty of new material and insights. Too plenty for everything to be exploited in one single research paper. In the follow up papers we might learn more about the competitive environment and the backward versus forward looking behavior of firms. One answer to the observed degree of inflation inertia in the Eurosystem and its member countries may rest in the extent to which firms' price reviewing behavior is backward looking or depends on the usage of rules of thumb or the like – a question the Austrian survey posed, but that hitherto has not exploited. Questions, such as this are relevant, as the popular New Keynesian Phillips Curve model, which emphasizes rational expectations and in its pure form is entirely forward-looking, has difficulties to generate the sluggishness of the price movements observed empirically. In contrast, hybrid versions of the New Keynesian Phillips Curve include both backward- and forward-looking behavior of firms and do much better in this respect.

References

- Amirault, D., C. Kwan and G. Wilkinson (2004): A Survey of the Price Setting Behaviour of Canadian Firms, in Bank of Canada Review, Winter 2004-2005, pp. 29-40.
- Blinder, A.S., E. Canetti, D.E. Lebow and J.B. Rudd (1998): Asking About Prices: A new Approach to Understanding Price Stickiness, Russell Sage Foundation, New York.

Dhyne, E., L. Álvarez, H. Le Bihan, G. Veronese, D. Dias, J. Hoffman, N. Jonker, P. Lünnemann, F. Rumler and J. Vulminen (2005): Price Setting in the EuroArea: Some Stylised Facts From Individual Consumer Price Data, ECB Working Paper No. 524.

Fabiani, S., M. Druant, I. Hernando, C. Kwapil, B. Landau, C. Loupias, T.Y. Mathä, R. Sabbatini, H. Stahl, A. Stokman (2005): The Pricing Behaviour of Firms in the Euro Area: New Survey Evidence, ECB Working Paper No. 535.