The pricing behaviour of Swiss companies: Results of a survey conducted by the SNB delegates for regional economic relations

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The price-setting behaviour of companies has become the subject of increasing attention in the past few years. This is largely due to two developments. Firstly, the trend towards micro-based models has resulted in analysts needing more detailed information about the behaviour of companies. Secondly, the growing competition unleashed by deregulation and globalisation may have changed pricing behaviour so that we felt it would be useful to know how things currently stand on this front.

The question of pricing behaviour is important for monetary policy because the imperfect flexibility of prices is the reason why output and employment can be influenced – temporarily at least – by monetary impulses. Central banks would like to know what impact their actions have on the economy and – in particular – how quickly inflation adjusts to its new equilibrium value after a monetary policy shock. One of the key determinants of the speed of this adjustment is the pricing behaviour of companies.

In practice, two approaches for investigating the pricing behaviour of companies have developed. The first approach is based on an analysis of the individual price observations that are collected for the purposes of compiling the consumer price index or the producer price index. Under the second approach companies are asked directly by questionnaire in an anonymous survey. The two approaches are mutually complementary and the SNB is currently continuing to work on both.

This paper is based on interviews which the SNB delegates for regional economic relations held with 67 companies between August and October 2006. The interviews concentrated on how these companies set the price of their main product. To facilitate the evaluation, a brief questionnaire was prepared to serve as a basis for the interviews.

1 Selection of companies

All told, 67 private sector companies from all regions of Switzerland were surveyed. Of these companies, 9% were from the construction industry. The remainder were divided almost equally between industry and the services sector. In terms of payrolls, the largest number of businesses surveyed were medium-sized companies (101–500 employees), followed by large companies (more than 500 employees) and small companies (less than 100 employees). This means that compared to the structure of the Swiss economy, small businesses and services companies are under-represented, while large businesses and industrial companies are over-represented.

For around half of the companies surveyed exports account for 50% or more of their total turnover. Just over two-thirds of the companies also state that the proportion of their turnover accounted for by long-term business relationships amounts to more than 50%. The intensity of competition is perceived by most of the contacts as intense. Around a half described the competition facing them in their primary market as "very strong" while 39% described it as "strong" and the remaining 12% as "weak".

2 Results

2.1 Frequency of price reviews and changes

In order to investigate the degree of price flexibility, the companies were asked how frequently they review and adjust the prices of their main product. The answers to both questions cover a wide range. Most companies (44%) review the price of their main product once a year. Around a fifth said that they review their prices on a daily basis. Large companies tend to review their prices somewhat more frequently than smaller companies. The business sector and the degree of intensity of competition, on the other hand, appear to have had no significant effect on the answers. The reason most often cited for the frequency chosen was that more frequent reviews would upset the relationship with the customer (31%). It was also often mentioned that the frequency was not self-determined or that circumstances did not change so rapidly that more frequent reviews would make sense.

Overall, actual price adjustments occur less frequently than price reviews. Just over half the companies surveyed had adjusted the price of their main product either not at all or only once in the previous twelve months. The median was one. Various firms did, however, say that they adjust their prices more frequently than they review them. These probably include some which subject their price structure to an in-depth review perhaps once a year but in the periods in between allow their front-line staff some scope to set prices. A company may also decide to change prices and do so in several stages.

Companies were also asked whether they adjust their prices in accordance with a fixed cycle or whether the price-setting process is set in motion by specific events. These questions were prompted by the distinction between "time-dependent pricing" and "state-dependent pricing" which has figured prominently in the academic literature in recent years. According to this literature, the response of inflation dynamics to structural changes depends on which of the two forms of pricing predominates. With state-dependent pricing, a decline in trend inflation, for example, results in a flatter Phillips curve, whereas with time-dependent pricing the slope of the Phillips curve is not affected by trend inflation (cf. Bakhshi, Khan and Rudolf, 2005). The answers from the companies surveyed suggest that most prices are adjusted periodically. Nevertheless, a quarter of those surveyed say that they do not only adjust their prices periodically but also react to events, and just under a quarter say that they react only to events.

In response to the question asking what factors are taken into account when setting the new price, most companies (43%) replied that they apply a margin to costs (mark-up pricing). A typical answer also frequently given was that the prices charged by their competitors played the main role in pricing (38%). This is the most frequent answer for companies which describe competition as "very strong". The remaining companies describe prices as being regulated or as being set by customers. The first group includes mainly companies in the pharmaceuticals sector.

Almost all companies grant discounts on list prices subject to certain conditions. These are generally bulk discounts. In many cases, though, discounts are also granted according to the time of the year or the state of the market. Some companies also state that they grant price reductions for strategically important orders or customers.

2.2 What prompts price adjustments

In order to obtain a better understanding of the reasons for price adjustments, the companies surveyed were asked what prompted them to change their prices. The answers reveal that the three most important factors are: the prices being charged by their competitors, the prices of intermediate products and the demand situation. Around 82%, 74% and 73% respectively describe changes in these three factors as either "very important" or "important" (cf. Table 1). Pressure from customers is also described by a majority (62%) as "very important" or "important". It therefore ranks well ahead of wage costs or the exchange rate. General inflation and interest rates are at the bottom of the rankings, which is likely to be attributable mainly to the fact that at present they are both close to historic lows.

The various factors are not of equal importance in all sectors of economic activity. Changes in demand appear to be more important as triggers for price adjustments in the services sector than in industry. The same applies to changes in wage costs. Precisely the opposite is true, however, for prices of intermediate products, the exchange rate or pressure from major customers. Changes in these three factors are more important as triggers for price adjustments in industry than the services sector.

In addition, an analysis by types of company suggests that companies that are exposed to very strong competition pay greater attention to changes in the prices charged by competing companies and to changes in demand than companies operating in a less competitive market. The opposite is true for changes in the prices of intermediate products. Such changes are regarded as playing a less important role by companies that are exposed to very strong competition than by companies that are exposed to less intense competition.

The proportion of long-term business relationships in total turnover also plays a role in the weighting of the individual reasons. Thus it emerges that companies with a high proportion of long-term business relationships are less inclined to mention changes in demand as a "very important" or "important" reason for adjusting prices than companies with a low proportion of long-term business relationships.

Reasons for price changes Table 1

	Percentages “very important” or “important”
Price changes by competitors	82%
Change in prices of intermediate products	74%
Change in demand for product/service	73%
Pressure from major customers	62%
Change in wage costs	49%
Change in quality	48%
Change in exchange rates	46%
Sales campaigns	26%
Directives from parent company or authority	18%
Change in taxes and other charges	16%
General inflation (e.g. consumer price index)	16%
Change in financial costs	12%

Theories of price rigidities Table 2

Theory	Description	Percentages “very important” or “important”
Customer relation	Prices cannot be changed more frequently without the customer relation being harmed.	69%
Cost-based pricing	Prices depend on costs and do not change unless costs change.	66%
Explicit contracts	Fixed-price contracts make it difficult to adjust prices frequently.	45%
Kinked demand curve	Company loses relatively many customers when it increases prices and gains few when it cuts prices.	42%
Non-price adjustments	Companies adjust other product features rather than the price.	40%
Coordination failure	Companies do not want to be the first to raise prices.	31%
Pricing thresholds	There are psychologically important price thresholds (e.g. 49.95 versus 50.05 francs).	21%
Cash flow	Prices must be kept up in a recession in order to generate sufficient cash flow for investment.	12%
External financing premium	Prices must be kept up in a recession since the costs of external financing increase.	11%
Menu costs	It would be too expensive to change prices more often (e.g. information gathering, reprinting catalogues, etc.).	10%

2.3 Factors explaining price rigidity

Economic theory offers a number of explanations for the imperfect flexibility of prices. In order to find out which of these theories are regarded by the companies as relevant, the theories were described in simple language and submitted to the contacts. The question was then whether the argument in question could prevent the company from adjusting the price. This approach was first used by Alan Blinder (1991) in an interview study of US companies. A number of investigations for other countries followed this example. Our selection and description of the theoretical explanations is mainly based on Amirault et al. (2004) and Apel et al. (2005).

The results, summarised in Table 2, reveal that the risk that the customer relationship might be harmed if prices were to be adjusted is seen as the strongest argument for not adjusting prices ("customer relation"). This suggests that implicit contracts provide a good explanation for nominal rigidities. Another finding which points in the same direction is that evidently companies often refrain from adjusting prices unless costs have changed ("cost-based pricing"). This reveals that it is important for those companies to be able to cite checkable reasons for adjusting prices. It also emerges from the SNB delegates' detailed reports on selected companies that it is easier for companies to increase prices if they are able to cite a rise in costs than if there has simply been a change in demand.

It also emerges, as expected, that concern for customer relationships is cited as a reason for the relative rigidity of product prices more frequently by companies that are exposed to less intense competition than by companies who are faced with very strong competition. Much the same is true for companies with a large proportion of long-term business relationships. These companies view the risk that the customer relationship could be harmed as a stronger argument against adjusting prices than companies whose long-term business relationships account for a small proportion of their turnover.

The costs associated with reviewing and adjusting prices ("menu costs") appear not to play any great role in the eyes of the companies surveyed. This is noteworthy, since in the literature (General Equilibrium Models) menu costs are the most popular way of modelling nominal price rigidities. The theories that attribute price rigidities to imperfect financial markets ("cash flow", "external financing premium" in Table 2) find little support either.

Concluding remarks

All in all, a very wide spectrum of behaviour emerges from the interviews with the companies on their pricing. A number of trends did become clear, however. Most companies adjust their prices at fixed intervals, with the average (median) company changing the price of its main product once a year. Nevertheless, a significant proportion also, or even only, reacts to special events. This means that, although so-called time-dependent pricing is the rule, state-dependent pricing also plays an important role. Whereas mark-up pricing still dominates when it comes to setting the new price, the most frequently mentioned triggers for price adjustments are changes in the prices charged by competitors. Changes in the prices of intermediate products and changes in demand follow only a short way behind, however, suggesting that both supply and demand factors play an important role. The most frequently cited arguments for not adjusting prices are implicit and explicit contracts and cost-based pricing. Concern for the customer relationship therefore appears to play a key role in companies' thinking on pricing.

Overall it is evident that the typical firm surveyed operates in a market in which imperfect competition prevails, which ultimately offers scope for individual pricing behaviour. Although changes in pricing behaviour over time were not a primary concern of the survey, they were mentioned occasionally. A great deal of evidence suggests that competition has become more intense. As a consequence, traditional mark-up pricing (with a constant mark-up) is tending to lose ground. In some cases it is also associated with more frequent reviews of prices.

A comparison of these findings with those of similar foreign studies reveals that there is little difference between them. This is true not only of the most frequently cited price-change frequency, which in foreign surveys is also once a year. The same also applies to mark-up pricing as the dominant pricing behaviour and to the factors that are mentioned as triggers for price adjustments or as arguments for not adjusting prices. The top positions are occupied in the foreign studies by much the same factors that are most frequently mentioned in the interviews conducted by the SNB's delegates for regional economic relations (see, for example, Apel et al., 2005, for Sweden or Fabiani et al., 2005, for the euro area).

References

Amirault, D., C. Kwan and G. Wilkinson. 2004. A survey of the price-setting behaviour of Canadian companies. Bank of Canada Review, Winter 2004–2005: 29–40.

Apel, M., R. Friberg and K. Hallstein. 2005. Microfoundations of macroeconomic price adjustment: survey evidence from Swedish firms. Journal of Money, Credit and Banking 37(2): 313–38.

Bakhshi, H., H. Khan and B. Rudolf. 2005. The Phillips curve under state-dependent pricing. Swiss National Bank Working Paper 2005–01.

Blinder, A.S. 1991. Why are prices sticky? Preliminary results from an interview study. American Economic Review 81(2): 89–100.

Fabiani, S., M. Druan, I. Hernando, C. Kwapil, B. Landau, C. Loupias, F. Martins, T.Y. Mathä, R. Sabbatini, H. Stahl and A.C.J. Stokman. 2005. The pricing behaviour of firms in the euro area: new survey evidence. European Central Bank Working Paper 535.