How do firms set prices?

A Bank of England working paper by Hall, Walsh and Yates (1997) reported on a 1995 survey in which 654 companies in the UK were questioned on their price-setting behaviour. The survey set out to explore the extent of price rigidities and the factors and firm characteristics that influence them. Price rigidities are important as they determine the extent to which demand shocks are transmitted into output rather than prices- and are a fundamental factor in explaining the Post-Keynesian theory of the business cycle. A further consideration is that when prices are sticky money is no longer neutral with respect to output.

How are prices determined?

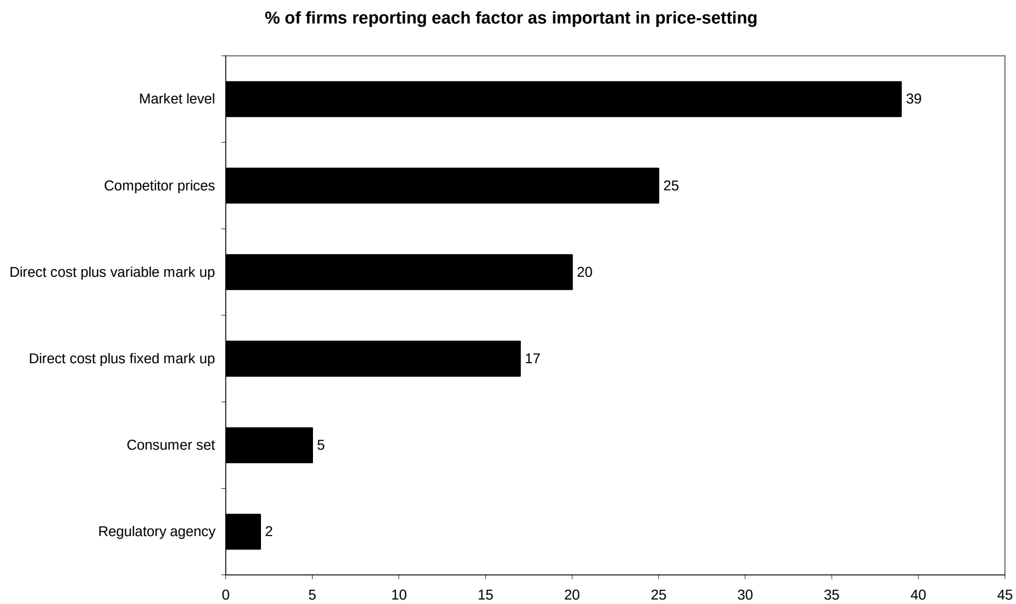

Figure 1: Source Hall, Walsh and Yates (1997)

According to the survey, the most important factor reported by firms is to set prices at the highest level the market can bear. However, another important factor is to set price in relation to competitors. This response was particularly evident in the retail and manufacturing industries where there is a high concentration (oligopolistic competition). Finally, company specific factors in terms of mark-ups over costs were important, and especially for smaller companies which cannot afford expensive market research.

How often are prices reviewed and changed?

If there were few informational costs in assessing market conditions then market reviews would be conducted frequently. The evidence from the survey though suggested that price reviews were undertaken much less frequently, with approximately 28% of firms reviewing prices annually, and 19% quarterly.

There are two models describing how prices are reviewed and changed. Time-dependent reviews were the most popular, with 79% of firms reporting to this approach. Here, a firm reviews prices at fixed time intervals. State-dependent reviews are when firms review prices is response to a significant shock in demand or costs, but only 11% of surveyed firms followed this rule. The remaining 10% responded to following a mixture of the two. Both types of price-setting rules suggest that prices will remain fixed and only move in discrete jumps every so often. Therefore, this might account for short-term price rigidities.

Actual price changes though are far less frequent than price reviews. There are two factors which might explain this. The first is that having undertaken a market review of prices it is found that there has been no change in market conditions. Given that most price reviews are at fixed time intervals rather than in response to market or cost developments this might not be surprising. The second is that the cost of changing market prices towards the optimal level may outweigh the profit advantages of operating at that optimal price level. The factors might cause this are: menu costs where firms face real costs in changing prices; the fear of losing consumer loyalty by breaking implicit price contracts; and the risk of starting a price war.

Large companies were found to review prices more frequently than smaller companies- which might be a reflection that the costs of undertaking market reviews are fairly substantial. It was also found that companies in more competitive markets tend to review prices more frequently, and those with long-standing customers review less frequently perhaps due to implicit or explicit contracts formed with these consumers.

Explaining price rigidities

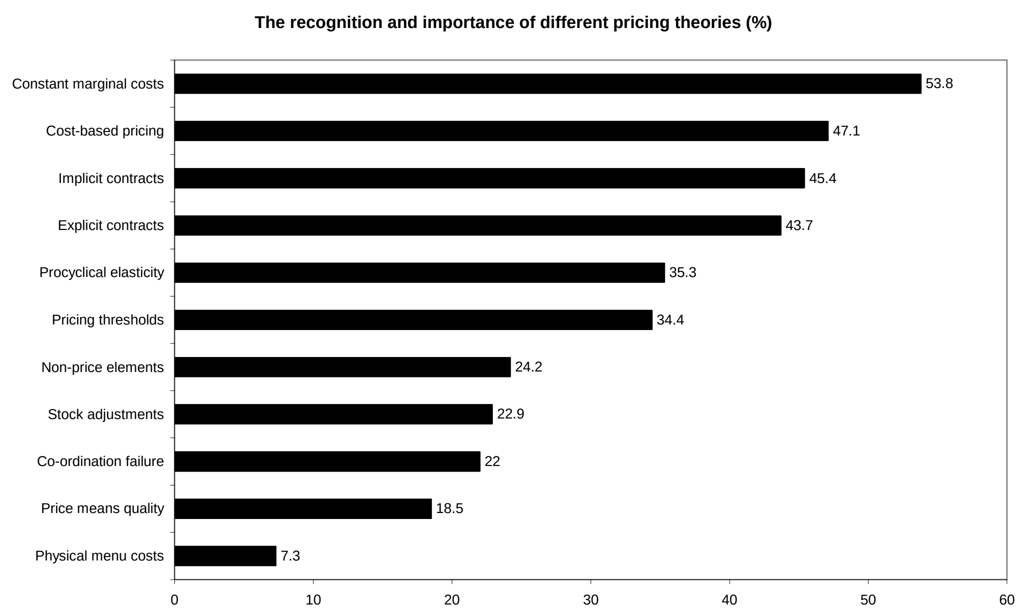

Figure 2: Source Hall, Walsh and Yates (1997)

Figure 2 records firm responses to what are the important causes of price rigidities. These fall into two categories, either because optimal prices do not change much with market conditions or because the costs of changing prices exceeds the benefits of moving to the optimal price.

The main reason for price stickiness is simply that marginal costs are fairly constant with respect to output. Therefore, fluctuations in demand are unlikely to lead to large changes in the firm's optimal price. In a similar vein cost-based pricing is also an important factor. Here, firms do not take changes in demand into account when setting prices but will simply change prices in view of changes in the prices of raw materials and wage rates, or other costs. Cost-based pricing can lead to considerable inertia in the supply chain as one firm's fixed output price becomes another's fixed raw material input price.

Explicit or implicit price contracts with consumers are an important source of price rigidities. These were found to be most relevant in construction, but were fairly weak in retailing. Overall the significance of price contracts is higher where there are longer-term customer relationships. Price thresholds on the other hand are a source of price rigidities where the relationships are more short-term as in retailing. These are scenarios where a price gets stuck at a level such as £4.99 or £9.99 instead of rising through £5 and £10 respectively.

Pro-cyclical elasticity was recognised as a factor but not highly scored. Non-price elements are where the observed prices are sticky but the underlying prices are flexible. This can be achieved by maintaining a fixed list price, but by changing elements such as quality, delivery times or the level of after sales service. Coordination failure captures the idea of a kinked demand curve- where firms are unwilling to be the first to raise prices in case of losing market share, and unwilling to cut prices for fear of sparking a price war.

Stock adjustment is where firms react to market conditions by varying stock levels rather than changing prices. Some firms worried about cutting prices as this may be perceived as a sign of reduced quality- but this was only recognised by 18.5% of respondents as potentially important. Finally, physical menu costs were found to be of little importance in accounting for price rigidities.