

Agenda

Advancing economics in business

Supermarket price wars: is government intervention needed?

Following the debate over the fierce price war between supermarkets in the Netherlands, the Dutch government has announced its decision not to introduce a rule that would prevent retailers from selling below the purchase price. Several other European countries do have such a rule in place. This article explores the economic effects of minimum price rules and discusses the existing empirical evidence, including a study by Oxera

On July 1st, the Dutch government announced that it would not propose a minimum price rule preventing retailers from selling goods below the purchase price.¹ This decision concluded a heated debate in the press and in Parliament about the desirability of such a rule, following the price war that has been taking place between supermarkets in the Netherlands since the end of 2003. The price war has resulted in lower prices and has therefore benefited consumers. However, the concern was that, in the medium or long term, it may harm consumers by forcing smaller supermarkets and more specialised retailers to exit the market, thereby reducing the number of players, the variety of products, and the availability of supermarkets close to where people live.

The timing of this debate is somewhat surprising. Other European countries, such as Belgium, France, Austria, Germany, Italy, Ireland and Spain, have had a minimum price rule in place for a number of years, and some of them have more recently considered removing it. Ireland introduced a minimum price rule in 1987 and undertook a review in the late 1990s (although it did not abolish the rule). In France, the first minimum price rule came into force in 1966, but was not considered very effective and was further refined in 1997 and 2001. There has recently been a debate in France as to whether the rule should be abolished or amended, giving retailers more flexibility in setting their prices.²

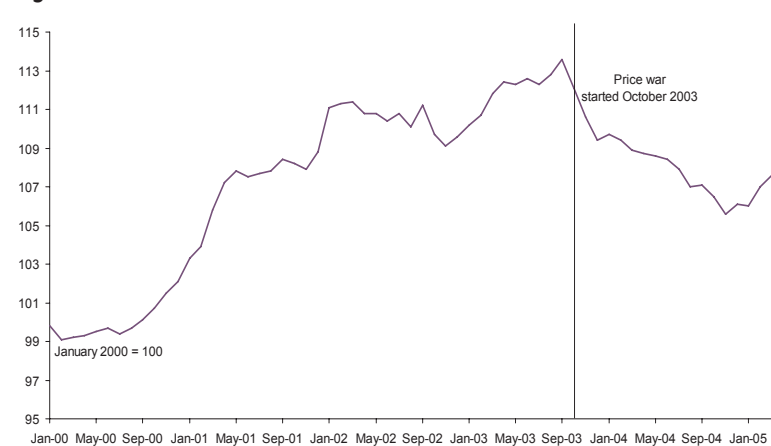
This article focuses on the economic effects of low-pricing policies and the costs and benefits for consumers of a minimum price rule. The possible costs can be described in terms of dampened

competition and higher overall prices, and the possible benefits in terms of greater availability of smaller and more specialised retailers and a broader range of products.

How do price wars arise?

A price war typically starts with a supermarket implementing price reductions for an undefined duration (as opposed to temporary price promotions) on a wide range of products. These price reductions are so significant that they trigger price cuts by other retailers, which are forced to respond to avoid losing market share. In such a situation, the initiator of the price war may opt to reduce prices even further. This happened in the Netherlands after the leading supermarket chain, Albert Heijn, reduced prices across a range of products in October 2003. This triggered price reductions by other supermarkets and resulted in a general reduction of around 3% in food prices, bringing them down to around the level of 2001 prices, as illustrated in Figure 1.

Figure 1 Price index of food and non-alcoholic drinks in the Netherlands



Source: Oxera (2005), op. cit.

In the economics literature, price wars have also been modelled as a strategic ‘punishment’ response when one party in a market deviates (or is perceived to deviate) from the collusive steady-state level of pricing.³ In other words, a supermarket may cut prices to signal that the rival’s initial price cut has not gone unnoticed. In this case, either the previous ‘cosy’ equilibrium is restored, or the price war becomes more permanent and brings down equilibrium prices in the market from a collusive to a more competitive level.

The occurrence of sharp price cuts escalating into a price war may also be explained by switching costs. Many consumers regularly shop in the same supermarket—switching to another supermarket is inconvenient if it requires consumers to travel further and become used to the other supermarket (eg, if products are located differently).⁴ To persuade consumers to switch, supermarkets may have to cut prices aggressively, thereby compensating consumers for their switching costs.

An explanation for price wars that may be of relevance to the Netherlands is that, over time, some supermarkets tend to focus on quality competition, and then begin to lose market share to discounters. To regain market share and rebuild their reputation for offering good quality at reasonable prices, they have to reduce prices significantly, possibly to such an extent that it triggers a price reduction by rivals, resulting in a price war.

How does a minimum price rule affect prices?

In theory, a minimum price rule—defined in terms of sales below purchase price—can dampen competition by removing one of the mechanisms through which retailers engage in rivalry. Retailers can apply various promotional policies that involve pricing below the purchase price, such as short-run promotions and loss-leading. A loss-leading pricing policy means that a limited range of product lines are sold at a loss, with the aim of encouraging customers to visit the outlet and purchase other goods sold at a profit.

The logic behind loss-leaders has been described in the economic literature.⁵ The vast range of products available in retail outlets and the convenience of one-stop shopping lead to imperfect consumer information and consumer switching costs. In other words, consumers are likely to find it difficult to compare all the products, prices and levels of service across retailers. In theory, this degree of imperfect information may give retailers some scope for setting higher prices than in a fully competitive market with complete information. However, economic theory also suggests that, in such a situation, it can be worthwhile for retailers to set

relatively low prices for some highly visible products (eg, those with a strong brand) to attract customers and subsequently set higher prices for the other products (eg, supermarkets’ own-brands). Such pricing policies may result in lower overall prices and, therefore, increased consumer welfare, as they ensure that no retailer can earn revenues above the level they would earn under perfect information—any excess profits on lesser-known products may be competed away on well-known products.

A minimum price rule, as defined in the countries referred to above, only restricts the amount by which prices can be cut, but not the low-pricing practices themselves. For example, under a minimum price rule, it is still possible to engage in loss-leading by setting prices below total costs—which is equivalent to the purchase price plus other costs incurred by the retailer (eg, wages and rent)—but still above the purchase price.

As a result, the degree to which a minimum price rule affects retailers will be determined by the extent to which retailers currently apply a policy of loss-leading or enter into a price war by setting retail prices below purchase prices. Although they may set low prices for certain products, it is unlikely that they will do so for a substantial proportion of them. Setting prices below purchase prices basically means that prices are set below marginal costs, which is an expensive strategy.

If a price war or loss-leading policy involves below-purchase-price pricing on a limited number of products only, under a minimum price rule, retailers will have to increase prices on this limited number of products, but at the same time may be able to reduce prices on other products—ie, products with sufficiently high margins to avoid below-purchase-price pricing. In such a case, the net effect of a minimum price rule on price wars or loss-leading policies may be limited.

A minimum price rule may prevent predation. Predation involves a firm deliberately incurring short-term losses in order to eliminate its competitors, allowing it to charge monopolistic prices in the long term. However, given that predation is already prohibited under EU and national competition law, this would not be an ‘incremental’ benefit attributable to the minimum price rule.⁶

The effect on prices: empirical evidence

Whether a minimum price rule dampens competition to such an extent that it results in higher overall prices is ultimately an empirical question. This section looks at the (as yet limited) available empirical evidence on the impact of minimum price rules.

Analysis of prices in countries with a price rule

On behalf of the Dutch Ministry of Economic Affairs, Oxera undertook a statistical analysis of food prices in a number of countries that have a price rule (Austria, Belgium, Germany, France and Ireland) to assess whether prices were structurally higher after the introduction of (or amendments to) minimum price rules. An ARIMA model⁷ was applied to food and drinks prices in these countries, and a dummy (binary) variable was included to capture any structural price differences between the periods before and after the introduction of the minimum price rule.

The analysis shows that the dummy was statistically significant in the regression for France—the sign of the coefficient of the dummy was positive, indicating that there was indeed an increase in price after the 1997 introduction (or rather strengthening, as there had been a rule since 1966) of the minimum price rule.⁸

It should be noted that assessing the effects of a minimum price rule on prices is far from straightforward, and that prices during the minimum price rule period could also have been affected by other factors, including the business cycle, the exchange rate and the degree of competition. However, an assessment of such factors for France indicated that they are unlikely to have had a significant effect on prices during exactly the same time period as the minimum price rule.

In the other countries, the coefficient of the dummy variable was not statistically significant. This could indicate that below-purchase-price pricing was not very significant in those countries. It could also be due to relatively lax enforcement of, and compliance with, the minimum price rule, or statistical problems such as too much noise in the data, which may disturb the statistical analysis.

There may be specific reasons why a significant effect was found in France. The price rule in France is applied to the purchase price as it appears on the invoice rather than the net purchase price, which is equivalent to the purchase price minus payments received by retailers from suppliers (eg, for access to shelves and to finance marketing activities). By definition, the purchase price is higher than the net purchase price, resulting in a higher price floor for retailers in France than, for example, in Germany (where the net purchase price is taken as the threshold). Applying the minimum price rule to the purchase price (rather than the net purchase price) is likely to make it more difficult for retailers to pass on the payments received from suppliers to consumers without infringing the minimum price rule. Hence, prices tend to be kept higher.

Other empirical evidence

Nielsen (1997) conducted a study in France two months after the minimum price rule was strengthened.⁹ Its analysis of 1,500 items (all A-brand items—ie, brands created by the manufacturers, such as Kellogg's cornflakes) showed that the average price for these 1,500 items increased by 4.14% after the introduction of the minimum price rule in 1997. (This is an average increase of prices of the 1,500 items included in the study—price increases of individual products may have been higher, lower or zero.) Another study, commissioned by the French Ministry of the Economy, Finance and Industry, undertook a similar analysis over the same time period and estimated the price increase at 0.5%.¹⁰ The difference between these two estimates may be explained by the fact that the Ministry's analysis included not only A brands, but also supermarkets' own-brands for each product. The minimum price rule in France does not affect supermarkets' own-brands.

Both of the above studies measured the initial price effect shortly after the introduction of the minimum price rule. If measured over a longer time period, the effect on overall prices could have been smaller—having increased prices of products sold below the purchase price, retailers may have reduced prices on other products with relatively high margins (without setting them below the purchase price), resulting in a small or no net effect on the average price of supermarket products. However, the ARIMA analysis undertaken by Oxera indicates that there was indeed a price effect over a longer time period also.

An academic study on the minimum price rule in Ireland had access to more detailed data on retail margins, concentration ratios (over time) and other relevant factors, which allowed for a more extensive econometric analysis, taking into account other explanatory variables such as market concentration (assuming that higher concentration may result in higher prices), advertising intensity, and GDP per capita.¹¹ The study found that, after the introduction of the minimum price rule, retail gross margins on the products were on average 4.6 percentage points higher.

So why introduce a minimum price rule?

From a public policy perspective, introducing a minimum price rule would only be worthwhile if the costs are outweighed by the benefits. The analysis above shows that a minimum price rule may result in higher prices, thereby harming consumers. Against this, the question is whether the minimum price rule is successful in achieving its stated aim—ie, protecting smaller retailers from aggressive price competition from the larger

retailers, and thereby ensuring greater product variety, choice, and availability of supermarkets closer to where people live.

It is not clear whether, in practice, minimum price rules result in these benefits. Another study for the Dutch Ministry of Economic Affairs compares the market structure of the grocery sector in countries with and without a minimum price rule.¹² Although there seems to be some evidence that, in countries with a minimum price rule, the rate of decline in the number of small supermarkets is slower than in countries without such a rule, this effect is limited and may be due to other factors—ie, the causality is difficult to show. The number of small and medium-sized supermarkets appears to be mainly determined by exogenous factors such as population density, and town and country planning policies.

In sum, although a minimum price rule may affect to some extent the way larger supermarkets compete, thereby leading to higher prices, the price increase may not be sufficient to enable smaller retailers to stay in the market—in other words, consolidation is to a large extent inevitable. Competition between larger and smaller retailers is mainly determined by economies of scale and lower purchase prices (as a result of the larger supermarkets' buyer power). This means that, under a minimum price rule, smaller retailers may still find it difficult to compete with larger retailers.

For these reasons, the decision was made not to introduce a minimum price rule in the Netherlands. It remains to be seen what the other European countries do with theirs.

If you have any questions regarding the issues raised in this article, please contact the editor, Derek Holt: tel +44 (0) 1865 253 000 or email d_holt@oxera.co.uk

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¹ The Oxera study on this subject for the Dutch Ministry of Economic Affairs was published on July 1st 2005. Oxera (2005), 'What is the Impact of a Minimum Price Rule? A Study Prepared for the Ministry of Economic Affairs', June, available at: www.oxera.com.

² See for a discussion of the debate Grall, J.-C., Lamy, T. and Wagstaff, J. (2005), 'Questioning the General Prohibition on Resale at a Loss and its Effects on Competition, the French Experience: Simple Words for an Intricate Problem', *European Competition Law Review*, **26:4**, 201–04.

³ See, for example, Rotemberg, J. and Saloner, G. (1986), 'A Supergame-theoretic Model of Business Cycles and Price Wars during Booms', *American Economic Review*, **76**, 390–407; and Green, E. and Porter, R. (1984), 'Non-cooperative Collusion under Imperfect Price Information', *Econometrica*, **52**, 87–100.

⁴ Klemperer, P. (1989), 'Price Wars Caused by Switching Costs', *Review of Economic Studies*, **56**, 405–20.

⁵ See, for example, Walsh, P. and Whelan, C. (1996), 'The Optimality of Loss Leading in Multi-Product Retail Pricing—A Rationale for Repealing the 1987 Groceries Order in Ireland', Trinity Economic Paper Series, Dublin; and Nelson, P. and Hilke, J. (1991), 'Retail Featuring as a Strategy Entry or Mobility Barrier in Manufacturing', *International Journal of Industrial Organisation*, **9**, 533–44.

⁶ It should be noted that the minimum price rules in Austria and Germany are in fact incorporated into the national competition law, rather than as separate legislation.

⁷ The emphasis of ARIMA (autoregressive integrated moving average) models is on analysing the probabilistic, or stochastic, properties of economic time series on their own—ie, they do not analyse the influence of other explanatory variables on those time series.

⁸ Technically, the ARIMA model had to be estimated in first differences because the price data is not stationary. This means that the coefficient of the dummy can be interpreted as the percentage point increase in the growth rate of prices, rather than as a change in the level of prices (as might be more likely).

⁹ Nielsen (1997), 'Loi Galland: Jusqu'où les Prix vont-ils Grimper?' Linéaires no. 1529, March, cited in Chambolle, C. (2004), 'Stratégies de Revente à Perte et Réglementation', Laboratoire d'Econométrie de l'Ecole Polytechnique, Paris.

¹⁰ Cited in Allain, M.L. and Chambolle, C. (2004), 'Below Cost Pricing as Vertical Restraints', Cahier du LORIA no 2004-01, August.

¹¹ Collins, A. and Oustapassidis, K. (1997), 'Below Cost Legislation and Retail Performance', Agribusiness Discussion Paper No. 15, April.

¹² EIM (2005), 'Verbod op verkoop beneden inkooprijzen—een internationale vergelijking', May.