

Regulations that impose maximum mark-ups are intended to protect consumers from firms exercising market power. But a study by **Christos Genakos** and colleagues suggests that they can have the opposite effect: when Greece lifted controls on the market for fresh fruit and vegetables in June 2011, consumers enjoyed lower prices.

# Regulatory reform in Greece: the benefits of removing maximum mark-ups

**G**overnment regulation of mark-ups is common. State monopolists and ex-monopolists in a variety of markets worldwide, including the telecoms and utility sectors, have long been subject to maximum mark-up regulation. But mark-up regulation has also been used in both high- and low-income countries in oligopolistic markets (those dominated by a few powerful firms), such as the markets for oil, gas and pharmaceutical products.

The typical justification for imposing maximum mark-ups is to protect consumers from the effects of excessive market power. In oligopolistic markets, the main argument in favour of maximum mark-ups is to limit the most extreme instances of market power exploitation.

Regulation is expected to put downward pressure on retail prices, without affecting firms with smaller mark-ups (for example, a competitive fringe).

If mark-up ceilings are binding, it is argued, they will force some firms to reduce prices; if they are not binding, prices will not be affected. Hence, the average price is expected to fall at least a little. The economic logic of the argument is clear (and also easy for politicians to communicate to voters), so much so that the predicted effect of maximum mark-up regulation has never been subject to systematic empirical testing.

Our study takes this seemingly uncontroversial prediction to the data and estimates the impact of maximum mark-up regulation on retail and wholesale prices in an oligopolistic market where

different players compete along the value chain. We take advantage of the repeal of maximum mark-up regulation in the Greek market for fresh fruit and vegetables. First implemented right after the Second World War, mark-up regulation was hastily cancelled in June 2011 as part of a programme of product market reforms aimed at liberalising the Greek economy, which was deeply affected by the global recession.

Regulation consisted of maximum wholesale and retail margins on almost all fruit and vegetables, and it was imposed on both locally produced and imported products. But five products – apples, lemons, mandarins, oranges and pears – were exempt from this regulation. To identify the impact of deregulation on prices, we compare prices of products



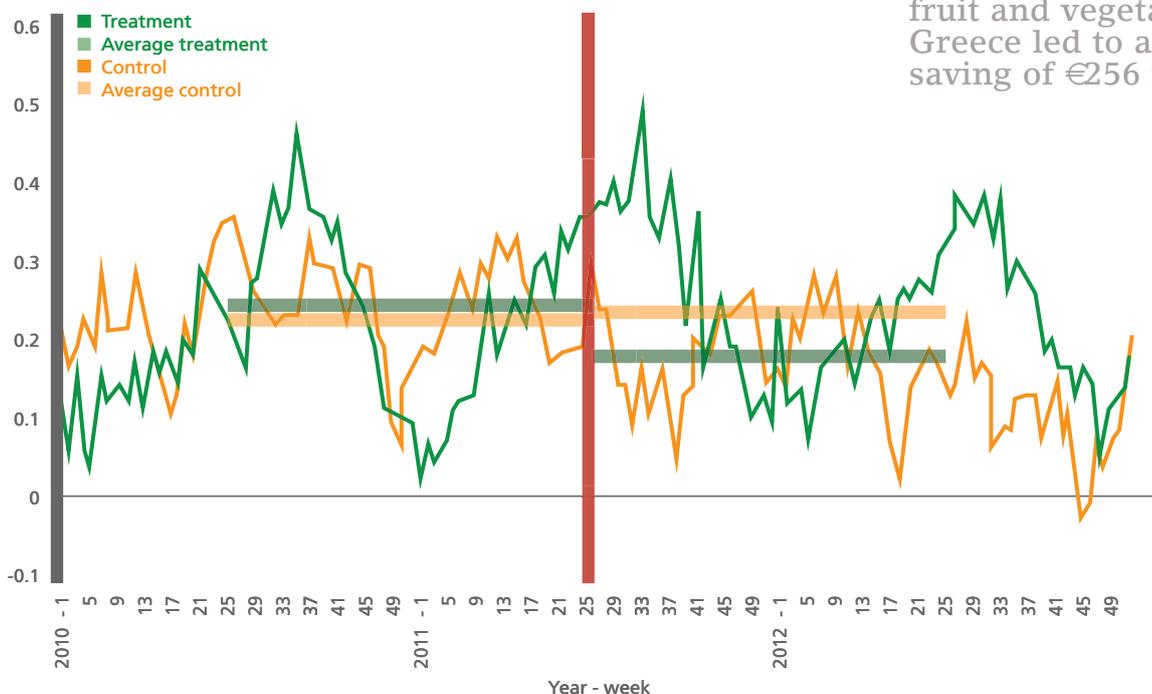
affected by regulation (the 'treatment' group) before and after the policy change and use the unregulated products as a 'control' group.

### Maximum protection goes and... prices fall!

Figure 1 charts the weekly average retail price of fruit and vegetable products in the treatment group (the green line) and the control group (the orange line). Prices follow the typical annual cycle of agricultural products. More importantly, the average price of products in the control group (the straight orange line) is very similar in the one year preceding and following the policy change (the vertical red line). But there seems to be a large drop in the average price of products in the treatment group (the straight green line).

We are able to measure the causal impact of abolishing mark-up regulation, and find that it led to average retail prices that were 6% lower. A 6% decrease in the average price of fruit and vegetables corresponds to a 1% decrease in the price of food of a typical Greek household,

Figure 1: Average retail prices before and after the change in regulation



Repeal of maximum mark-up regulation for fruit and vegetables in Greece led to an annual saving of €256 million

**Notes:** The chart plots the weekly averages log price of products in the treatment (green line) and control (orange line) groups and their one-year averages (straight green and orange lines) before and after deregulation (vertical red line).

**Source:** Authors' calculations based on data from the Greek Ministry of Development and Competitiveness.

which, in aggregate, amounts to €256 million of annual savings. Wholesale prices also decreased as a consequence of deregulation by about the same amount.

Did regulation affect the behaviour of wholesalers, retailers or both? We find that after accounting for wholesale prices, retail prices were not significantly affected by changes in regulation. This suggests that although regulation had a direct effect on wholesalers, it only indirectly affected retailers, who adjusted their prices to the lower wholesale prices.

### ‘Maximum protection’ or ‘collusive device’?

How could deregulation lead to lower prices? While maximum mark-ups limit the price charged by firms facing a binding constraint, they may also alter the pricing behaviour of firms not subject to a binding constraint. Hence, we investigate the hypothesis that maximum mark-ups provided a focal point for collusion.

Earlier research has documented a similar phenomenon under maximum price regulation in other markets. For example, Knittel and Stango (2003) show that mandatory price ceilings in the US credit card market in the 1980s had the perverse effect of increasing average prices. Similarly, Albæk et al (1997) show that publication of transaction prices by the Danish competition authority seemed to help firms colluding in the ready-mix concrete market in the 1990s. But mark-up regulation differs from price regulation in a number of ways, so the observation that price regulation may facilitate collusion does not imply that mark-up regulation will have the same effect.

In our case, additional data show that the wholesale market for fruit and vegetable products is more concentrated than the retail market and less affected by entry and exit. Firms are larger in terms of sales volume, and they are more likely to be incorporated. A number of factors facilitating collusion seem to be present in this market: product homogeneity (within varieties); limited entry; and frequent interaction and physical proximity of wholesalers.

Further evidence is also consistent with collusion. The supermarkets in our sample typically buy from wholesalers. In contrast, smaller retailers in street markets typically rely on wholesalers for imported goods, buying locally grown products from a

fragmented market of local producers. We find that the average price of goods sold in supermarkets was much more affected by deregulation. Moreover, in street markets, the retail price of goods bought from wholesalers fell as much as in supermarkets, while the retail price of local products was not significantly affected.

Overall, the results of our policy evaluation highlight the unexpected consequences of a common yet understudied type of regulation. While maximum mark-up regulation may well serve its intended purpose in some markets, our results show that this cannot be taken for granted.

Last but not least, because the Greek economy is regulated heavily and inefficiently (Katsoulacos et al, 2015), there are large benefits to reap from regulatory reform. Our example is a case in point: deregulation actually benefited consumers by leading to lower fruit and vegetable prices, even though the regulation in place was in fact meant to serve this objective.



This article summarises ‘The Impact of Maximum Mark-up Regulation on Prices’ by Christos Genakos, Pantelis Koutroumpis and Mario Pagliero, CEP Discussion Paper No. 1310 (<http://cep.lse.ac.uk/pubs/download/dp1310.pdf>).

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## The Greek economy is regulated heavily and inefficiently – so there are large benefits to reap from regulatory reform

### Further reading

Svend Albæk, Peter Møllgaard and Per Baltzer Overgaard (1997) ‘Government-assisted Oligopoly Coordination? A Concrete Case’, *Journal of Industrial Economics* 45(4): 429-43.

Yannis Katsoulacos, Christos Genakos and George Houpis (2015) ‘Product Market Regulation and Competitiveness: Towards a National Competition and Competitiveness Policy in Greece’, in *Reforming the Greek Economy* edited by Costas Meghir, Christopher Pissarides, Dimitry Vayanos and Nikolaos Vettas, MIT Press, forthcoming.

Christopher Knittel and Victor Stango (2003) ‘Price Ceilings as Focal Points for Tacit Collusion: Evidence from Credit Cards’, *American Economic Review* 93(5): 1703-29.