Is markup regulation good for consumers? Think again!

Imposing maximum markups is a common market intervention aiming at protecting consumers from the effects of excessive market power. However, as new research from **Christos Genakos**, **Pantelis Koutroumpis** and **Mario Pagliero** demonstrates, markup ceilings can also provide a focal point for collusion among market participants resulting in higher, instead of lower, prices for consumers.

Government regulation of markups 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 markup regulation. But markup regulation has also been used in oligopolistic markets, such as the market for pharmaceutical products and the gasoline market, in both high and low-income countries.

The typical justification for imposing maximum markups is to protect consumers from the effects of excessive market power. In oligopolistic markets, the main argument in favor of maximum markups is to trim the right tail of the markup distribution, hence limiting the most extreme instances of market power exploitation. This is expected to put downward pressure on retail prices, without affecting firms with smaller markups (e.g., a competitive fringe). If binding, markup ceilings will force some firms to reduce prices. If not binding, prices will not be affected. Hence, the average price is expected to weakly fall. 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 markup regulation has never been subject to systematic empirical testing.

In this paper, we take this seemingly uncontroversial prediction to the data and estimate the impact of maximum markup regulation on retail and wholesale prices in an oligopolistic

and vertically nonintegrated market. We take advantage of the repeal of maximum markup regulation in the Greek market for fresh fruits and vegetables. First implemented right after the Second World War, markup regulation was hastily cancelled on June 2011 as part of a larger effort to establish product market reforms aimed at liberalizing the Greek economy, deeply affected by the global recession.

Regulation consisted of maximum wholesale and retail margins on (almost) all fruits and vegetables and was imposed on both locally produced and imported products. However, five fruit and vegetable products (apples, lemons, mandarins, oranges, and pears) were excluded from this regulation. To identify the impact of deregulation on prices, we compare prices of products affected by regulation before and after the policy change and use the unregulated products as a control group.

Maximum protection goes and…prices decrease!

Figure 1 describes the time series of the weekly average price of fruit and vegetable products in the treatment (black solid line) and control group (grey dotted line) in the sample period. The figure shows that fruit and vegetable prices follow a typical agricultural product yearly cycle. More importantly, the average price of products in the control group (the straight grey line) are very similar in the one year preceding and following the policy change (the vertical red line). On the other hand, there seems to be a large drop in the average price of products in the treatment group (the straight black line), suggesting a possible negative impact of the policy change on the price of these goods.

Using appropriate econometric techniques and after accounting for product and store characteristics, time trends and by product yearly price cycles, deregulation provides some

plausibly exogenous variability that allows us to precisely measure estimate the causal impact of regulation. Surprisingly, we find that abolishing markup regulation led to 6 to 9 percent *lower* average retail prices. A 6 percent decrease in the average price of fruit and vegetables corresponds to a 1 percent decrease in the price of food of a typical Greek household, which, on aggregate, amounts to €256 million yearly savings. Wholesale prices also decreased as a consequence of deregulation by about the same amount.

Did regulation affect the behavior 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 devise"?

How could deregulation lead to lower prices? While maximum markups limit the price charged by firms facing a binding constraint, they may also alter the pricing behavior of firms not subject to a binding constraint. The most likely explanation of our findings is horizontal relations. Maximum markups may provide a focal point for tacit collusion among unconstrained firms. Previous research has also documented a similar phenomenon in other markets. For example, Knittel and Stango (2003) show that mandatory price ceilings in the US credit card market in the 1980's had the perverse effect of increasing average prices. Similarly, Albæk, Møllgaard, and Overgaard (1997) show that publication of transaction prices by the Danish competition authority most likely helped firms colluding in the ready-mix concrete market in the 1990's.

In our case, additional data shows that the wholesale market for fruit and vegetable products is more concentrated than the retail market and less affected by entry and exit. Firms (in terms of sale volume) are larger and 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 ex-post policy evaluation highlight the unexpected consequences of a common yet understudied type of regulation. While maximum markup regulation may well serve its intended purpose in some markets, our results show that this cannot be taken for granted.

Finally, precisely because the Greek economy is heavily and inefficiently regulated (Katsoulacos, Genakos and Houpis, 2014), there are large benefits to reap from regulatory reform. Our example is a case in point where deregulation actually benefited consumers by leading to lower fruit and vegetable prices, even if the regulation in place was actually meant to serve exactly this objective.

This article summarises “The Impact of Maximum Markup Regulation on Prices” by Christos Genakos, Pantelis Koutroumpis and Mario Pagliero, AUEB Working paper 12-2014 (http://goo.gl/LJdq3h).

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Further Readings

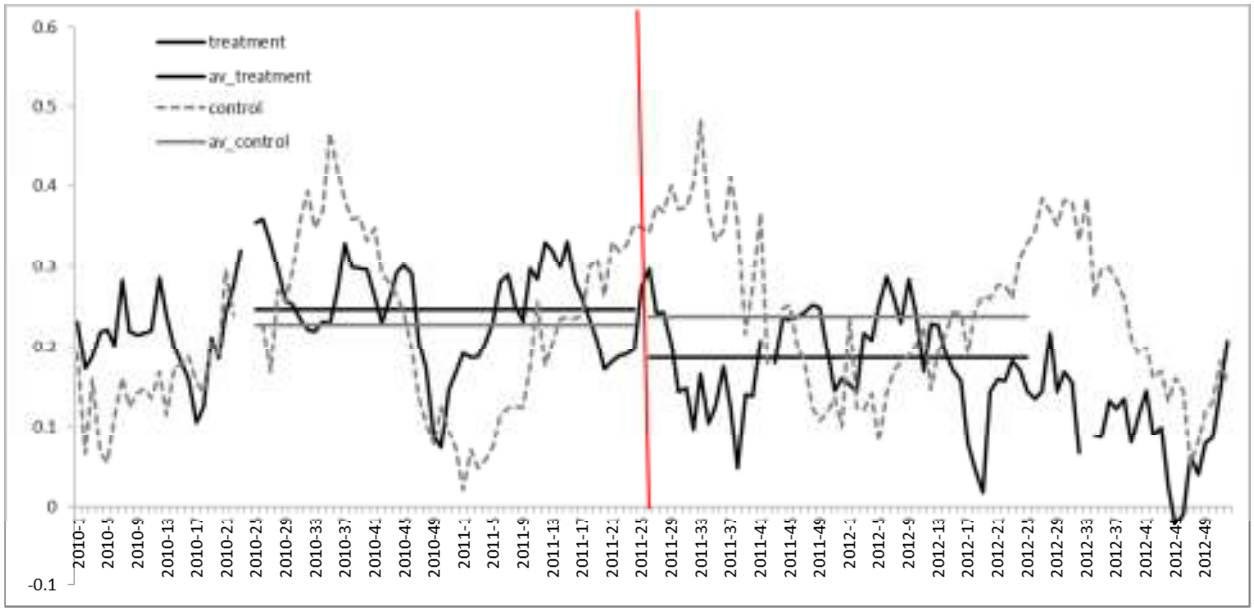
Albæk, S., P. Møllgaard and P. B. Overgaard (1997). “Government-Assisted Oligopoly Coordination? A Concrete Case”, *Journal of Industrial Economics*, 45(4), pp. 429-443.

Katsoulacos Y.,C. Genakos and G. Houpis (2014). “Product Market Regulation and Competitiveness: Towards a National Competition and Competitiveness Policy in Greece”, in C. Meghir, C. Pissarides, D. Vayanos and N. Vettas (eds.), *Reforming the Greek Economy*, MIT Press, *forthcoming*.

Knittel, C., and V. Stango (2003). “Price ceilings as focal points for tacit collusion: evidence from credit cards”, *American Economic Review*, 93(5), pp. 1703-1729.

Figure 1

Average retail prices before and after the change in regulation



Notes: Figure 1 plots the weekly average log prices of products in the treatment and control groups and their one-year average before and after deregulation.
Source: Authors' calculations based on data from the Greek Ministry of Development and Competitiveness.