

# Competition Policy in Europe - Exam

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1. This exam covers the part "Competition Policy in Europe" taught by Prof. Stennek.
2. You have been assigned to groups of 2-3 students. Each group should choose between the merger case and the cartel case, presented below.
3. Each group should hand in a report with your answers to the questions asked at the end of your chosen case.
4. You are allowed to use whatever material you wish, such as lecture slides and the textbook. If you wish, you may also search for additional material in the library or on the Internet.
5. The report should be well formulated and not exceed 2000 words.
6. The report should be handed in as a pdf-file.
7. Reports should be submitted, no later than Friday 14 July at 24:00 (Japanese time).
8. Submit the report by e-mail to [johan.stennek@economics.gu.se](mailto:johan.stennek@economics.gu.se).

Good Luck!

Johan Stennek

## Merger Case

Developing new truck models is an expensive business, which is only profitable if a truck manufacturer succeeds to reach a large scale. It is therefore necessary for truck manufacturers to be present worldwide and not only on their national markets. Volvo cannot focus exclusively on Sweden and MAN cannot be present in Germany only.

As the costs of developing new models rise, it becomes increasingly important to achieve scale economies. One way to achieve large scale is through mergers and acquisitions. Different brands can then collaborate on developing engines and other parts, thereby reducing the cost of development per truck.

Clearly such mergers reduce competition in the truck market. But the large number of truck manufacturers on the world market suggests that competition is intense today, and that competition will continue to be intense also after a few mergers. Thus, any loss of competition must be assumed to be low compared to the substantial gains in the form of cost reductions.

Based on such calculations Volvo and Scania agreed to merge their companies and applied for approval. But, much to their surprise, the European Commission decided to block the planned merger on the basis that it would lead to near monopoly in Sweden, Finland and some other European countries.

One of the Commission's main arguments is that the different manufacturers also have their own networks of service garages, each specializing in their own brand. Also these networks are expensive to maintain which means that countries like Sweden, with a low population density, will only have a few networks. In fact, Volvo and Scania are the only manufacturers with a dense network of service garages here in Sweden. Also independent garages are rare. The road carriers thus have little choice, but to use the specialist workshops for services and reparations.

## Questions

What is your opinion about the European Commission's decision to block the Volvo-Scania deal? Why did the Commission talk about national markets such as Sweden and Finland? Should the geographic market not be defined as the world or at least Europe? Even if there is little competition in one product market (services) there might be more intense competition in the other product market (trucks), which arguably is the more important market.

## Cartel Case

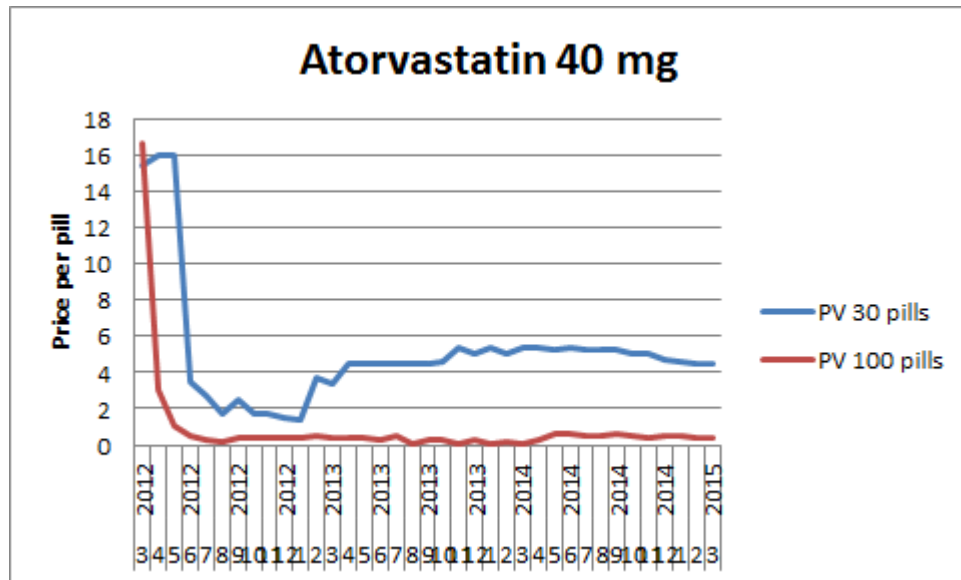
There is empirical evidence that there may be a considerable amount of tacit collusion in the Swedish market for generic drugs.

The Swedish market for generic drugs is organized as an auction. In charge of this auction is the Swedish Dental and Medical Benefits Board ("TLV"). Every month the pharmaceutical companies have to announce what price they wish to charge. Following the price announcement, TLV declares the firm with the lowest price as the "product of the month". Usually it is only this "product of the month" and the "brand name product" that are able to sell their product. The brand name product is the product sold by the company that originally invented the drug. They are usually able to sell to consumers, despite not having the lowest price since they are well known to the consumers. There are of course separate auctions for different drugs. These are different products. But each drug also comes in different strengths (e.g. 30 mg and 40 mg pills) and different package sizes (e.g. 100-pill packages and 200-pill packages). This means that TLV has to organize a separate auction for each combination of strength and package size for each drug. There is one auction for 100-pill packages of 40 mg pills and another auction for 200-pill packages of 40 mg pills for each drug and each month.

It appears, however, that instead of competing with each other, some firms share their markets, either by taking turns winning it every second month, or by charging exactly the same price over long periods of time. Over 200 drugs may be affected by such "suspicious" behavior. The prices of the affected drugs are estimated to be approximately 50% higher than they otherwise would be.

### Illustrative example

Let us start with an illustrative example, chosen because it demonstrates the pattern in a very clear fashion. The example concerns two markets for Atorvastatin (40 mg). The first graph, describes how the price of the "product of the month" evolved from early 2012 to early 2015. The blue line shows the price per pill of 30-pill packages and the red line describes the price per pill of 100-pill packages.

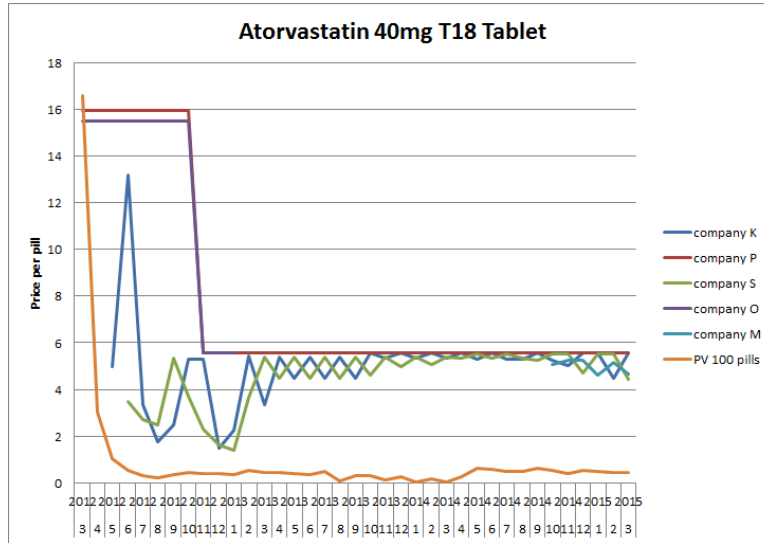


During the spring of 2012, the brand name lost its patent and generics entered the market. In the 100-pill market, the price per pill dropped quickly to a fraction of the original price. The price then stayed fairly constant at this low level. Also in the 30-pill market the price falls steeply during most of 2012. The fall is not quite as large and it comes a little later, which may be due to the fact that there are more competitors in the 100-pill market.

What is more noteworthy is that the price in the 30-pill market starts to increase again towards the end of 2012. It appears to be stabilized around 5 SEK per pill, which is around ten times higher than in the 100-pill market.

Even if we do not have access to cost data, it appears unlikely that a higher cost would explain such a large price difference. Remember, the only difference between the two products is the package size. Moreover, the fact that also the price in the 30-pill market first approached SEK 1 per pill suggests that the price is much higher than cost. Finally, the pharmacy price of a 30-pills package of Atorvastatin 40 mg in Poland is around 40 SEK per package, whereas in Sweden it is 218 SEK (product of the month). The question is then what could explain the high price of 30-pill packages?

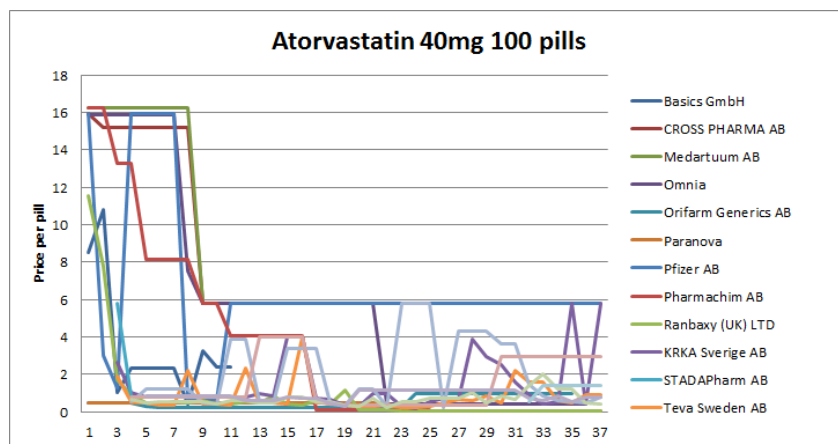
To answer this question, we look closer at the bidding patterns in the two markets. The second graph focuses on the 30-pill market, describing the bids of all firms. It reveals that the brand name kept the high patent-period price until they were forced to lower it according to regulation. The generic companies' bids are consistently lower and fluctuated from month to month. A possible explanation for this pattern is that the brand name can count on a market share even if it is more expensive while the competitors need to be the "product of the month" to be able to sell.



The most striking feature, however, is that the generic companies' bidding pattern changed markedly in early 2013, i.e. at the time when the market price rose. At that time, the generic companies started bid rotation – taking turns – winning the market in a perfectly predictable pattern.

A second striking fact is that the winning price is only marginally lower than the price of the brand name, which is presumably the maximum price that the generic companies could charge and still acquire a substantial market share. This fact suggests two conclusions. The first conclusion is that competition is *potentially* very strong. The generic companies only need to undercut their rivals' prices by a very small amount to conquer a large share of the market. This feature is consistent with so-called Bertrand competition among the generic companies. The second conclusion is that bid-rotation enables the generic companies to not compete at all, since their price is only marginally lower than the "ceiling."

The third graph shows that there is no similar bid-rotation scheme in the 100-pill market.



## General analysis

One of my students, Jadwiga Cleutus, wrote her thesis to investigate if there is any evidence of tacit collusion in the Swedish generics markets. The thesis investigates all the generic drugs from March 2010 to March 2015.

### i. Method

In a first step, Jadwiga studies the incidence of bid-rotation and parallel pricing in the generics markets. By bid-rotation, we mean that two or more firms take turns in winning the market. By parallel pricing, we mean that two or more firms charge exactly the same price. Both bid-rotation and parallel pricing are methods that firms can use to share a market, instead of competing for it. With parallel pricing, the firms share the market each month. With bid rotation, the firms share the market over a couple of months.

In particular, Jadwiga uses a statistical test to identify the markets where bid-rotation and parallel pricing occurs for such a long time that it is unlikely that this pattern would have emerged as a result of a normal competitive process. These markets are called “suspicious”.

In a second step, Jadwiga compares the price level in the suspicious markets with the price level in comparison markets. The comparison markets are markets for the same active substance, but with a different package size. Moreover the comparison markets must not have been classified as “suspicious” in step one. By price level, we mean the price of the product of the month.

### ii. Result

Jadwiga finds evidence of bid rotation and parallel pricing in a large number of generics markets. Over 200 generic drugs are affected. The prices in suspicious markets are on average 3.6 times higher than in the comparison markets.

A complication in this comparison is that economic theory suggests that collusion will occur in markets with few firms but that the price in such markets would have been relatively high also absent collusion. It is therefore important to isolate effects of collusion from the normal effects of limited competition. After control for the number of firms (by using a difference-in-difference methodology), the isolated impact of collusion is estimated to be 47%. The difference is statistically significant.

### iii. Conclusions

Jadwiga’s thesis presents evidence suggesting that some generics companies collude in the Swedish market.

There are no indications that the pharmaceutical companies have met and talked about their prices. But the suspicious bidding patterns, such as winning the market every second month, are so simple that they may be discovered and implemented without any explicit communication between the firms.

Johan Stennek  
July 4, 2017

Still, the Swedish market for generic drugs is constructed to foster competition and cost-based pricing for the benefit of patients and taxpayers. While it appears that the system succeeds in delivering low prices in large markets with a high turnover and many generic competitors,<sup>1</sup> it also appears that the current system is vulnerable for collusion in markets with only a few competitors.

### Questions

In your opinion, should and would the firms on the market for generic drugs be found guilty of violating competition law? Why/why not?

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<sup>1</sup> The Swedish Dental and Pharmaceutical Benefits Agency (TLV) reports that, on average, the prices of generic drugs are lower in Sweden than in other EU countries.