

Summary of the Research Project Dnr 66/2007

Competition in the Swedish pharmaceuticals market – what has happened after the substitution reform?

Swedish titel: Konkurrensen på läkemedelsmarknaden - vad har hänt efter utbytesreformen?

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Introduction

The Swedish substitution reform of October 2002 requires pharmacists to replace the prescribed pharmaceutical with the cheapest available substitute product in cases when neither the physician nor the consumer opposes substitution. The Swedish Medical Products Agency defines a product as a substitute if it has the same active substance, strength, and form (e.g. pills or oral fluid) as the prescribed product, and if its package sizes can approximately sum up to the prescribed quantity. The reform was supposed to lower pharmaceutical costs directly, as prescribed pharmaceuticals were replaced with cheaper versions, and indirectly through increased price competition.

Within this project, we have analyzed how the substitution reform has affected pharmaceutical prices and estimated how price-sensitive the demand for pharmaceuticals is. Based on this, welfare effects of the reform are estimated. The project also contains estimates of how pharmaceutical firms have changed their product assortment in response to the increased price-competition that the reform has led to and analyzes of physicians' and consumers' choices regarding opposing generic substitution.

Consumer information and pharmaceutical prices

After the substitution reform, consumers that are not prescribed the cheapest available version of a pharmaceutical are informed by the pharmacist that cheaper alternatives exists, meaning that information about relative prices are increased by the reform. The theoretical result in Granlund and Rudholm (2007) show that such an increase in information likely reduces the prices of brand name pharmaceuticals that face generic competition, while the result regarding generics is less clear. The empirical results of the paper show that the substitution reform has lowered the price of both generics and of brand name pharmaceuticals that faced generic competition at the time of the reform. The results also give some support for that the reform-effect was amplified in markets with high number of firms or low consumer information prior to the reform, for pharmaceuticals that had high markups over marginal costs prior to the reform, and also for generic pharmaceuticals whose competitors had high markups prior to the reform.

Price and welfare effects of the substitution reform

Similarly to Granlund and Rudholm (2007), Granlund (2009a) contains estimates on the reform's effects on pharmaceutical prices, but, in contrast to the former paper, the estimates in Granlund (2009a) is based on all pharmaceutical products sold in Sweden and weights are used in the estimations so that the results give direct information about how the average price-level of pharmaceuticals has been affected by the reform.

The average price reduction due to the reform, within the first four years after the reform, was estimated to 10% and was found to be significantly larger for brand name pharmaceuticals than for generics. The results in Granlund (2009a) also imply that the reform amplified the effect of generic entry has on brand-name prices by a factor of ten. Results of a demand-estimation imply that the price reductions increased total pharmaceutical consumption by 8% and consumer welfare by SEK 2.7 billion annually. This can be compared with total Swedish pharmaceutical sales of SEK 26.4 billion in 2006.

Product-differentiation

The reform might have pharmaceutical firms' incentive to launch new product, since it has reduced the price of exchangeable products and increased the market share of generics. The results in Granlund and Rudholm (2009) show that the reform made generic firms on average 2.9% more likely to launch products of new package size, indicating that the increase in their market shares are more important than the increased price competition.

Brand name firms can temporarily avoid some of the effects of the reform by introducing products that are not exchangeable to existing product, but the result show that the reform has not affected the average probability of them doing so. The explanation is likely that generic firms are quick to launch similar products, and that the reform have reduced the revenues from brand name products that faces generic competition

Physicians' and consumers' choices regarding generic substitution

Under the substitution system, both physicians and patients are allowed to veto substitution. When physicians veto substitution, the extra costs are covered by the pharmaceutical insurance system, but physicians are allowed to veto only for medical reasons, for example, if the patient is sensitive to inert ingredients in some of the substitutes. If patients veto substitution themselves, they have to pay the price-difference between the prescribed and the cheapest available alternative themselves.

The dataset used in this part of the project contains all prescriptions sold in the county of Västerbotten, or sold in other parts of Sweden to residents of Västerbotten, during 43 months after the reform. In the dataset physicians vetoed substitution in 2% of the cases and consumers opposed substitution in 17% of the cases when they were given the question (consumers are not asked if the cheapest available alternative is prescribed). Brand-name products for which substitution was vetoed by physicians were on average 218% more expensive than the cheapest generic alternative, whereas the corresponding figure for other brand-name products was only 15%. This correlation might indicate that physicians' decisions whether or not to veto generic substitution have an important effect on price-competition among pharmaceutical firms. Consumers, on the other hand, primarily opposed substitution when the price-difference was relative low and on average paid an extra cost of SEK 23 (25%) when they opposed substitution.

One main result from this part of the project is that private physicians were 50-80% more likely to veto substitution than county employed physicians (Granlund, 2009b). A possible explanation to this difference could be that private physicians, that for example are less restricted from participating in education organized and paid for by pharmaceutical companies, are more loyal toward some pharmaceutical firms. Allowing substitution might also be time-consuming for the physician, if it worries the patient. Hence, it could reduce the number of patient-visits per day, which would be more costly for private physicians, since their income depends on that number.

The main result regarding consumers' choices is that consumers are substantially more loyal toward brand name pharmaceuticals and branded generics than toward "true" generics (Granlund and Rudholm, 2008). The principal difference between branded generics and generics is that branded generics are sold under their own product name (like brand-name drugs) while "true" generics are sold under the substance name, usually followed by the company name. Thus, these results support the idea that brand-name recognition is important in creating consumer loyalty toward pharmaceuticals.

Papers written within the project

Granlund, D. (2009a) Price and welfare effects of a pharmaceutical substitution reform, *HUI Working Paper*, 21.

Granlund, D. (2009b) Are private physicians more likely to veto generic substitution of prescribed pharmaceuticals? Forthcoming in *Social Science & Medicine*. (An earlier version is under a different title available as *HUI Working Paper*, 14.)

Granlund, D. and Rudholm, N. (2007) Consumer information and pharmaceutical prices: Theory and Evidence, *HUI Working Paper*, 8.

Granlund, D. and Rudholm, N. (2008) Consumer loyalty in the Swedish pharmaceutical market, *HUI Working Paper*, 17.

Granlund, D. and Rudholm, N. (2009) Does Increased Price Competition Affect Entry of New Pharmaceutical Products? *HUI Working Paper*, 26.