KONKURRENSVERKET
Swedish Competition Authority

Ansökan om forskningsmedel

Datum

2015/01/30

Observera att ansökan med bilagor endast ska skickas elektroniskt till konkurrensverket@kkv.se

1 Sökande (huvudansvarig för projektet)

Namn

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Bankgiro/Plusgiro

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3 Projektbeskrivning

Projekttitel *För att radbryta texten, använd Alt + Enter*

Collusion vs. Mergers: Evidence from the Swedish Market

Projektet avses starta, datum

2016/01/01

Projektet beräknas vara slutfört, datum

2017/06/30

Sammanfattning av projektets syfte, betydelse och genomförande (högst 1400 tecken).
För att radbryta texten, använd Alt + Enter

Antitrust enforcement efforts against cartels stepped up enormously in the last two decades, both in terms of sanctions and tools. However, cartels remain a widespread phenomenon and the time allocation within Competition Authorities often favors the tight deadlines imposed by merger control. This project adopts an empirical approach to evaluate two of the main alternative arrangements which increase firm's profitability and introduce entry barriers: cartels and mergers.
In particular, this project intends to examine empirically the reasons underlying the decision to merge after being fined for collusive behaviour, instead of continuing to collude, entering a new cartel agreement or competing. This will be done with the help of a unique dataset on cartels and mergers in Sweden. We have received some data on cartels from the Swedish Competition Authority and we will extend this dataset by matching firms with a merger dataset and with unsuccessful merger notifications.
Our analysis will allow drawing policy recommendations for current cartels and for the detection of undiscovered cartels, particularly regarding how mergers and collusive behaviour are related.

Bifoga en utförligare projektbeskrivning (max 10 A4–sidor).

4 Kostnadsredovisning

Fyll i de ofärgade cellerna med för projektet gällande information, så uppdateras de färgade automatiskt. Ge akt på de felmeddelanden i rött som visas vid överträdelse av Konkurrensverkets riktlinjer för anslag till forskningsprojekt.

Projektår 1 Personalnamn, akademisk titel (bifoga CV)	Månadslön enligt KKV:s riktlinjer	Anställningstid i projektet, månader	Arbetstid i procent av hel id	Lönekostnad inkl. sociala avg.
Chloé Le Coq, Disputerad forskare	34000	12	25%	150,960
Catarina Marvao, Disputerad forskare	34000	12	25%	150,960
	Summa övriga kostnader (hämtas från tabell 4a)			346,029
	Total kostnad inklusive sociala-, och förvaltningsavgifter			874,731

Projektår 2 Personalnamn, akademisk titel (bifoga CV)	Månadslön enligt KKV:s riktlinjer	Anställningstid i projektet, månader	Arbetstid i procent av hel id	Lönekostnad inkl. sociala avg.
Chloé Le Coq, Disputerad forskare	34000	6	25%	75,480
Catarina Marvao, Disputerad forskare	34000	6	25%	75,480
	Summa övriga kostnader (hämtas från tabell 4a)			20,000
	Total kostnad inklusive sociala-, och förvaltningsavgifter			230,796

Projektår 3 Personalnamn, akademisk titel (bifoga CV)	Månadslön enligt KKV:s riktlinjer	Anställningstid i projektet, månader	Arbetstid i procent av hel id	Lönekostnad inkl. sociala avg.
	Summa övriga kostnader (hämtas från tabell 4a)			0
	Total kostnad inklusive sociala-, och förvaltningsavgifter			0

4a Redovisning övriga kostnader

	År 1	År 2	År 3
Material och utrustning			
Resor	10,000	20,000	
Övriga kostnader	336,029	0	
Summa	346,029	20,000	0

Observera! Summan av de övriga kostanderna för något av åren överstiger den i riktlinjerna fastslagna övre gränsen för övriga kostnader, med hänsyn till antalet projektmedlemmar samt deras akademiska titlar.

5 Kostnadssammanfattning (anges i kronor) för nu sökt anslag

Total projektkostnad

1,105,527

Därav söks från

Tidigare erhållna anslag från

Konkurrensverket	Annan anslagsgivare *	Konkurrensverket	Annan anslagsgivare **
1,105,527 kr			

*Anslagsgivarens namn		Ansökan inlämnad, datum	Sökt belopp

**Anslagsgivarens namn		Ansökan beviljad, datum	Beviljat belopp

6 Övriga projekt som samtidigt kommer att ledas av huvudansvarig

Projekttitel *För att radbryta texten, använd Alt + Enter*

Namn och institution på personer som beviljas forskningsbidrag kommer att publiceras på Konkurrensverkets webbplats.

Collusion vs. Mergers: Evidence from the Swedish Market

Chloé Le Coq   Catarina Marvão

It has been noticed anecdotally that some firms tend to merge rather than to continue colluding. Marvão (2013), while looking at the determinants of fine reductions granted to cartel members fined by the EU Commission, noticed that repeat offenders often merge with a previous cartel partner. For example, between 1992 and 1998, Akzo, BASF and four other firms participated in an illicit cartel in choline chloride. When in 1998, Chinook (one of the cartel members) reported the cartel to the EU Commission and the firms were fined (with 20% leniency reduction for BASF and 30% for AKZO), Akzo acquired BASF's decorative coatings business in Europe, increasing its market share in coatings from 5% to 60%. Several other examples can be found in the pharmaceutical industry and other sectors.

This project examines empirically the reasons underlying the decision to merge after being fined for collusion (or involved in a cartel). In particular, it aims at understanding whether firms are likely to merge (rather than to collude or form a cartel), as a response to a specific market environment and possible past conviction(s). This empirical project will use a unique dataset on cartels, mergers and merger notifications in Sweden.

The literature has mainly focused on the benefits and costs of merging over colluding, while this project focuses on the likelihood of mergers when firms have been part of a cartel or illicitly colluding. This analysis will allow drawing policy recommendations for current cartels and for the detection of undiscovered collusive agreements, particularly regarding how mergers and collusive behaviour are related.

The project will be divided in two parts.

Collusive behaviour vs. Merger: An overview of the Swedish case

The first part of this project will focus on the overlap between the firms which exited a collusive agreement and those which posteriorly merged or attempted to merge. We will characterize the sequentiality of firms' decisions, potentially: collusion, conviction and merger. This part of the project will thus empirically analyse sequential collusion and merger behaviour. Most of the literature has focused on the choice between merger and collusion (Kumar et al., 2013; Nocke and White, 2010; Dargaud, 2008; Vasconcelos, 2005; Crémer, 2003). Our focus is different, however, as we are interested in analysing the sequentiality of both decisions. The project is also related to the literature on endogenous mergers (see e.g. Ganslandt, Persson, Vasconcelos, 2012), which focuses on the impact of a merger on the likelihood of collusion. Our focus differs in the sense that we will consider the case where collusion precedes a (potentially) less damaging merger. As far as we are, Hüschelrath and Smuda (2013) is the only paper that looks at sequential collusion and merger behaviour. These authors consider the impact of cartel breakdowns on merger activity within EU between 2000 and 2011. However, they only consider accepted mergers cases. Instead, we will be able to use data on mergers' notification. More precisely we will match data from the *Swedish Cartel Register*, the *Sweden Merger Case-Law Database*, and the *Swedish Merger Notification Cases*. This is an important difference as many mergers may have been blocked by competition authorities if one or more of the firms have participated in collusive agreements. Furthermore,

firms which participate in cartels are often large or have a significant level of market power and this may also lead to an unsuccessful merger.

Finally, some other studies have used some parts of our Swedish dataset to address different research questions. The Swedish Cartel Register data was used by Fölster and Peltzman (1995) and Ciarreta (2010) to measure the effects of cartels and regulation on prices, output and productivity. Berg (2011), using the same cartel data, analyzed the features of the institutional design and characteristics of these cartels. Rönnholm (2010) used the Swedish Merger Case Law Database to analyse the determinants of merger control decisions in Sweden. This study is however different from the above mentioned literature, as it merges the two datasets and specifically identifies the overlapping firms, so as to infer their behavior regarding firms' decision to merge after being in a cartel.

Collusive behaviour vs. Merger: The trade-off

The second part of the project will empirically analyse different reasons for firms to merge after a cartel ban or a conviction for collusion. More specifically, we will consider three different hypotheses that look at the trade-off between mergers and cartels.

H1. Mergers vs. collusion and the regulatory context

Bittlingmayer (1985) has argued that the great US merger wave in 1880 was a reaction to the newly established antitrust policy. Kumar et al. (2013) recently focused on a similar question but in a very different setup. They show theoretically that firms are more likely to collude than to merge in the procurement context, when buyers show some "resistance" towards high prices.

Making use of our extended and detailed dataset, we will test this hypothesis examining the link between firms' decisions and the context of these decisions. Since merger control legislation was only introduced in 1993, we do not have information on previous mergers and notifications but the legislation was amended in 2008 and we may expect some effects stemming from the amendment.

Some information on buyers' resistance towards high prices can be retrieved from the variables in our data, which account for sales, global turnover and market share of each individual firm. Data on whether the firm had a dominant position or whether another firm did and on entry barriers in each specific market will help us draw further conclusions on this issue.

H2. Comparing the cost of collusion vs. the cost of merger

Whereas both collusion and a merger may give rise to monopoly gains, a merger is often an irreversible strategy, as it is very costly to undo. A collusive agreement on the other hand, allows more flexibility but has the inherent risk of detection. The choice between merger and collusion is thus likely to depend on this trade-off.

According to the current EU cartel fine guidelines, repeat offenders should receive a higher fine. We should then observe that all else equal, repeat offenders are more likely to merge. We will test these predictions using our detailed dataset about cartels and mergers (or their notifications) in Sweden.

H3. Collusion vs. merger and the threat of entry

A merger may trigger entry as, by definition, the number of market participants is reduced. Collusion, however, does not affect the market structure (the number of firms stays constant) and may make entry more difficult. Collusion may in fact be considered as an entry deterring

strategy if entry profitability depends on the number of market participants (as it is often assumed in the literature). We will then test empirically this theoretical prediction, namely the hypothesis that a merger is likely to be preferred to collusion, in case of high entry barriers. For this analysis, we will use the variables in our constructed dataset which concern entry barriers in each specific market. This will help us draw further conclusions on these issues.

Both parts of the project will use the following datasets:

The project will use a unique dataset. Part of the data is provided by the Swedish Competition Authority and we will construct a larger and richer dataset by matching it with data on mergers and merger notifications.
- CARTEL REGISTER DATA: We plan to use a large share of the Swedish Cartel Register, which was kindly provided to us by the Swedish Competition Authority and which covers 3421 cartels registered in the period from 1947 to 1993.
- MERGER CASE LAW DATA: We have also obtained the Swedish Merger Case Law Database which is based on decisions of the Swedish Competition Authority, the Market Court or the District Court and documents available at the *infotorg.se* website. It includes data on mergers which occurred between 1993 and 2009, in total 204 obervations.
- MERGER NOTIFICATION DATA: To complete this already very detailed dataset, we will collect information on merger notifications. We will use the fact that all notifications from 1998 onwards are available from KKV's website and previous ones are available (in physical form) in KKV's archive. The "merger notification" data will allow us to explore the case of mergers that were blocked and whose firms formed or entered a cartel/ collusive agreement instead.

TIMELINE

The time-line of the project will be as follows:

Step1: Construction of the data set (8 months)
> We will first collect and match data on Swedish firms, with a focus on firms which merged after being in a cartel. We will not only look at effective but also at unsuccessful merger notifications.
> Note that this step may take some time, as merger notification data will have to be collected individually from the KKV archives. Furthermore, firms may have changed names and identification numbers so that matching the three datasets may be time consuming.

Step 2: Empirical analysis (6 months)
> We will develop an empirical model to test the three hypothesis described above.

Step 3: First drafts and presentation in seminars and conferences (6 months)
> We plan to write two papers. Paper 1 will be an overview of the Swedish data on cartels and mergers. Paper 2 will explore the link between collusion and mergers, accounting for the regulatory context, the cost of both alternatives and the effects on competition and entry costs.

BUDGET:

The project will last 24 months.

Chloé Le Coq and Catarina Marvao will work on the project 25% of their time during this period and are requesting funding for their salaries. Moreover they are applying for travel money to disseminate results at international conferences (SEK 10.000 in the first year and SEK 20.000).

A Research Assistant (RA) will be hired in the first year of the project and will be working 85% of his/her time. This RA will be instrumental to construct the unique dataset that is needed to implement the project. In particular, the MERGER NOTIFICATION DATA is in a paper format for some years and a significant RA's working time will be devoted to create a dataset in excel format.

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