CASHING IN ON CUSTOMERS?

-COOPERATIVE PRICING THEORY WITH AN APPLICATION ON THE SWEDISH BANKING SECTOR

PÄR EMANUELSSON & OSKAR LINDHOLM
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Pär Emanuelsson & Oskar Lindholm

The reason for this study of the Swedish banking sector is that we suspect that collusion is at hand in the sector. We ground our suspiciousness on the extensive revenues and high retail banking fees. Swedish banking fees are the highest in EU. Based on this and that the banking sector is oligopolistic with only a few significant competitors we found it interesting to apply theories concerning tacit collusion on the banking sector.

Our main conclusions are that cooperative pricing could be successful for banks since prices are a poor means of competition whereas customers focus on service quality instead of price. There is little asymmetry among the established banks and they cooperate through a number of systems. Since they cooperate through these systems the banks experience similar cost pressures and information is available. The Swedish bankers’ association plays an important role in the exchange of information. Thus, the facilitating features are strong and cooperative pricing can be profitable.

An effective banking sector is essential for an economy and has a central role in the society as a whole. The presence of collusion can therefore have important implications, not only for the customers but also for the society. Efficiency costs also appear when collusion is at hand and can exceed the society’s welfare losses.

Cooperative Pricing, Collusion, Strategy, Bank, Swedish Banking Sector, Competition, Market Structure
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INDEX OF ABBREVIATIONS

ATM       Automated Teller Machine
BGC       Bankgirocentralen
CEKAB     Central for electronic card transactions
DDB       Den Danske Bank
EC        European Commission
EU        European Union
FB        Föreningsbanken
FSB       FöreningsSparbanken
MNB       MeritaNordbanken
RIX       Central Bank’s system for clearing and settlements between banks
SB        Sparbanken
SCA       Swedish Competition Authority
SBA       Swedish Bankers’ Association
SEB       Skandinaviska Enskilda Banken
SFSB      Swedish Financial Supervisory Board
SHB       Svenska Handelsbanken
SkB       Skandiabanken
Wb        Wasa banken
ÖEB       Östgöta Enskilda Bank
1 Introduction

This chapter contains a background to why the area of strategic behaviour is an important feature to consider for companies on an oligopoly market. Below we will present the purpose, limitations and other important factors for the framework of this thesis.

1.1 Background

Everyday situations in both work and private life demand a continuous stream of decisions. The decisions that are made influence other active members in the environment and consequently they, in their turn, influence you in your actions and thinking. It is important to recognise this interaction at all times when making decisions. When deciding on a business strategy it is essential to be aware of competitors’ responses to your own actions. One way to anticipate other actors’ responses is to use game theoretic models and through the models decide on suitable actions, which maximise the utility of the firm. (Dixit, Nalebuff, 1991)

Forming a strategy for a company is an important task for companies since the strategy is their means to attain their goals. For many firms the goal is to create a sustainable growth and satisfy the owners’ desires. In a highly competitive environment it is not easy for firms to fulfil the goal to be highly profitable. To facilitate prosperity a firm must focus on lowering costs and value creation at all times. (Hill, 1998) If the firms on an oligopoly market would choose to collude and form a cartel-like agreement it is possible for all competitors on that market to gain profits. The magnitude of the profits could then vastly exceed the expected profits when competing without collusion¹. (Scherer, 1990) According to some researchers a one percent increase in price creates, on average, a twelve percent improvement of the firms operating margin. (Leszinski, 1992) To create supranatural profits is essential for firms since they want to satisfy their owners and survive in a competitive milieu. Retained profits can then be used in accordance with the managers and owners wishes e.g. as dividend on stock or to finance investments. Internally generated funds are

¹ The extent of the profits depends on a number of factors e.g. the stability of the agreement and cost structures facing the firms. This will be dealt with further in chapter five and six.
the most important source of finance for firms. Through collusion, on an oligopoly market, a firm can increase the size of their funds dramatically, which can appreciate the company’s value\(^2\). (Brealey, Myers, 1996)

Collusion is most often needed to be tacit as a result of antitrust laws and other governmental regulations. Overt cartels are often illegal and therefore tacit collusions without explicit agreements have arisen on different oligopoly markets. Even if cooperative pricing is legally defensible it can sometimes be questioned if it is defensible from a welfare perspective. In this thesis we will study cooperative pricing strategies. The choice of pricing strategy depends on market structure, how the actors view one another and their expected behaviour\(^3\). (Scherer, 1990)

When firms collude they have an incentive to cheat since they want to increase their profit. The threat of destruction by firms who defect from the collusion differs in size depending on many factors, which will be discussed further forward in the thesis. It is important to analyse the prospects of creating a successful collusion with the other participants on the oligopoly market. Both the markets and the firms can have facilitating features and thereby increase the chances of success over time with supranatural profits. Before participants on markets initiates a pricing strategy it is important to dissect the different facilitating factors and their relative importance for a sustainable and lucrative tacit collusion. On some markets it is directly inappropriate to try to establish a collusion since it lacks facilitating structural conditions and will fail promptly. Still, even with the difficulties facing collusion on oligopoly markets it is attractive because of the possibilities, for the participants, to earn supranatural profits. Even if the pricing strategy is somewhat short lived it might be beneficial to collude because of the magnitude of possible profits in comparison to the returns under competitive pricing. (Besanko et al, 1996)

The reason for studying the Swedish banking sector is that we suspect that collusion is at hand in the sector. We ground our suspiciousness on the extensive revenues and high retail banking fees. Swedish banking fees are the highest in EU, according to a report from the

\( ^2 \)Using internally generated funds can be explained by the avoidance of transaction costs and speculative and disturbing forces, which can appear when using external funds. Internal funds also offer the managers more freedom in their decisions.

\( ^3 \)Game theory is of great importance when trying to anticipate the competitors’ behaviour and their responses.
European Commission (EC). The results from the EC’s report can be seen in Figure 1.1, where Sweden’s retail banking fees for consumers exceeds all other EU countries.

**Figure 1.1 Average Cost\(^4\) for Consumers in ECU in the EU, 1996**

![Bar chart showing average costs for consumers in ECU in the EU, 1996.]


Based on the high retail banking fees, high profitability in the Swedish banking sector and the presence of four dominant banks we found it interesting to apply theories concerning cooperative pricing in the sector. The four dominant banks are MeritaNordbanken (MNB), FöreningsSparbanken (FSB), Svenska Handelsbanken (SHB) and SEB and their turnover accounts for 90 percent of total turnover on the banking market. Through the theories we want to investigate the market conditions and see if the theories can imply or confirm our suspicions. An effective banking sector is essential for an economy and has a crucial role in the society as a whole. The presence of collusion can therefore have important implications, not only for the customers but also for society.

\(^4\) The costs are a rough average of all consumer groups’ costs, for a more elaborate presentation of prices the reader can study table 7.1.
1.2 Purpose and Questions

The purpose of this thesis is twofold. Firstly, we will study how firms can influence the price level on a market through strategic behaviour and how these theories correspond with the Swedish banking sector. Secondly, we discuss possible welfare consequences.

In order to answer our purpose we present four questions, which will permeate our discussion throughout the thesis.

- What elements determine the choice of pricing strategy?
- What structural factors, on both the market and within the firms themselves, influence the durability of tacit collusion?
- Does the analysis of the Swedish banking sector indicate cooperative pricing?
- What are the welfare consequences of collusive behaviour?

1.3 Limitations

In this thesis we will study the Swedish banking sector. We will not incorporate all banks that are active in Sweden in our study. Only banks with their base organisation and main business activity in Sweden are selected. Our empirical discussion is founded on two studies from the Swedish Financial Supervisory Board (SFSB), one from the Swedish Competition Authority (SCA) and another from the EC.

Explicit collusions are not the focus of our analysis, they are in most cases illegal. We aim to dissect possible legal strategies, or at least in the legal grey zone, for tacit collusions in this thesis. Illegal agreements will however not be disregarded completely. Cooperative pricing strategy is our focus in the thesis, non-cooperative pricing will not be dealt with herein. Further, we will focus on economic theory and considerations, instead of competition law, when discussing banking market conditions.

When discussing pricing in the banking sector we only study retail banking fees for certain services and disregard other fees such as loan fees and interest rate differences. We will not study the quality aspect of the retail banking services.
1.4 Critique

No econometric study will be carried out on the relationships and significance on the variables in the banking sector. Empirical facts have been gathered from four different reports from three different institutions. Results in the report from the EC are somewhat exaggerated but still valid, this will be discussed further in chapter 7.1.

The historical data is limited and the data used in our discussion is therefore based on present figures. In some cases we have not used the original sources of theory. Instead we have utilised modern interpretations when suitable, especially two books from Scherer (1990) and Besanko et al (1996).

Internet sources have been used, though sparsely, but the sources are fairly reliable. We have only used official and well renowned locations therefore we believe that they can be regarded as trustworthy.

1.5 Disposition

Firstly, an empirical presentation of the Swedish banking sector, which can be categorised as an oligopoly, will follow in chapter two. Economic theories will be presented in the third, fourth, fifth and six chapter. Chapter three consists of an introduction of game theory and is focused on repeated games. If the reader is well acquainted with game theory this chapter can be disregarded. The fourth chapter describes oligopoly and price collusion and brings in welfare aspects of collusion. Theories that cover cooperative pricing on market level are introduced in the fifth chapter. In chapter six the reader is introduced to facilitating features that influence cooperative pricing on firm level.

Chapter seven present empirical findings from the European and Swedish banking market. The analytical section of this thesis is introduced in chapter eight. Lastly, concluding remarks are presented in the ninth chapter along with our answers of the questions and purpose, presented earlier.

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5 SCA, SFSB and EC.
2 The Swedish Banking Sector

In this chapter an overview of the Swedish banking sector is presented. The overview will help the reader to comprehend the discussion in coming chapters and create a foundation for the analysis.

2.1 Banking Sector and Deregulation

Banking activities in Sweden have remained roughly the same over a long time span. The most notable change on the market was the deregulation that was set in motion in the beginning of the 1990s. Prior to deregulation the aim of regulatory institutions was to uphold stability within the banking system and govern the banks’ activities. Deposits, withdrawals and interest rates are examples of monitored and influenced banking businesses that were governed through the regulations. Since the deregulation was accomplished the objective has changed and the new purpose of regulations is to ensure a security for the banking system and also individual safety for depositors. The market now determines interest rate setting and distribution of loans. At the same time the market was opened up for insurance companies to procure financial firms to increase the competition. (Konkurrensverket, 1999)

Deregulation enabled entry in the banking sector and as a result new, and somewhat different, actors emerged. The new actors are often called niche banks, which indicate their specialisation in banking activities. Niche banks often use other forms of communication than the older and well-established banks. Client/bank communication for niche banks is often carried out through telephone or Internet instead of traditional bank offices and reflects technology advancement. Even if niche banks have offices they are not as common or as extensive as the traditional ones. There is now a greater demand for new technology services and the large and established banks have adapted to this and supply equivalent services. The large use of ATMs has decreased the need for banking offices further. Technology has thereby reduced the need for traditional bank offices and as a result entry is less costly for actors and greater competition is made possible. (Finansinspektionen, 1998)

2.2 Actors in the Banking Sector

The number of actors on the Swedish banking market has changed over the last three decades. In the 1970s there were only four large and dominant banks, namely PK-banken, SE-banken,
Handelsbanken and Götabanken. Above these banks about ten province banks were active and a considerable number of smaller and independent banks, called Sparbank. Almost all of the smaller banks have been taken over by the larger banks or absorbed through mergers, for example Sparbanken Sverige, which arose through a merger, by the independent Sparbank’s. (Konkurrensverket, 1999)

From the mid 1980s through to early 1990s the number of banks in Sweden have increased. Foreign banks have been permitted to operate in Sweden since 1986 when twelve banks set up in business for a start. Thereafter more banks have been established and by 1997 there were 20 active foreign banks. The scale and scope of most foreign banks’ activities in Sweden remain at a fairly low level with the exception of Den Danske Bank (DDB), which acquired the Swedish province bank Östgöta Enskilda Bank (ÖEB). Through the acquisition of ÖEB by DDB it is now the fifth largest player in the Swedish banking sector. As a result of the deregulation, mentioned above, most insurance companies have started banking operations. Banking operations by insurance companies commenced in 1993 and includes around ten actors by 1999. (Konkurrensverket, 1999)

Merger and acquisition hysteria occurred in Sweden in 1997 among financial and banking branches⁶. That year no less than five mergers or acquisitions was accomplished⁷. As a result of this change of market structures five large banks were established. The market concentration was consequently increased. In 1997 the banks operating in Sweden, excluding the Swedish central bank (Riksbanken), had a turnover of circa 2000 billion SEK. The total turnover is equivalent to 125 percent of GNP. Of this the four largest banks, namely FSB, MNB, SHB and SEB, accounted for 90 percent, which elucidates their dominance. (Konkurrensverket, 1999)

2.3 Turnover and Profitability

Historically the interest rate margins between deposits and withdrawals have accounted for an important part of the return for banks. Nowadays the income from the interest rate margins


⁷ Stadshypotek and Stadshypotek bank was acquired by Handelsbanken (SHB); Föreningsbanken merged with Sparbanken Sverige (FSB); Nordbanken merged with the Finnish bank Merita Bank (MNB). Den Danske Bank acquired Östgöta Enskilda Bank and lastly SE-banken bought the insurance company Trygg-Hansa, including Trygg-Banken (SEB).
has declined. Retail banking has taken over its previous role as primary source of income. The importance of retail banking on the operating results is presented below in table 2.1.

Table 2.1 Turnover and Results for Banks Operating in Sweden 1998, Million SEK.

<table>
<thead>
<tr>
<th></th>
<th>FSB</th>
<th>MNB</th>
<th>SHB</th>
<th>SEB</th>
<th>Total Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover - total</td>
<td>19 350</td>
<td>31 100</td>
<td>16 850</td>
<td>21 100</td>
<td>72 850</td>
</tr>
<tr>
<td>Operating results - total</td>
<td>6 350</td>
<td>12 700</td>
<td>7 700</td>
<td>6 100</td>
<td>26 500</td>
</tr>
<tr>
<td>Turnover - retail</td>
<td>13 450</td>
<td>20 750</td>
<td>12 150</td>
<td>8 800</td>
<td>44 750</td>
</tr>
<tr>
<td>Operating results - retail</td>
<td>5 100</td>
<td>8 450</td>
<td>6 200</td>
<td>2 500</td>
<td>18 300</td>
</tr>
</tbody>
</table>

Source: Konkurrensverket, 1999, page 33, with own revisions.

From the table it can be seen that, for the four banks, total results from retail accounts for 18 300 million SEK out of the total operating result of 26 500 million SEK, which is approximately 70 percent of the total returns. The size of returns from retail banking differs somewhat but its role is still considerable. Profitability is also visualised in the table by the hefty returns of 26 500 million SEK from a turnover of 72 850 million SEK. In comparison with other markets the profitability can be perceived as high. If the recession from 1990-1993, with its extreme pressures in the banking sector, is omitted the revenue has been high and stable. Profitability in the banking has been 13 percent, whilst in the manufacturing industry the level has been 11 percent during the years 1974-1996. In case the recession is excluded returns are yet higher. This result in a more distinct difference between the bank sector and the manufacturing industry, returns are then 22 percent and 12 percent respectively. (Konkurrensverket, 1999)

**2.4 Cooperation and Institutions in the Banking Sector**

Banks cooperate in a number of ways among themselves. The cooperation can stem from a need to enable transactions between banks or other financial institutions and create cost-effective solutions to control, administration and security. Collaboration can also arise through the recognition of mutual interest on different matters such as information exchange, an example of this is the Swedish bankers’ association (SBA). (Finansinspektionen, 1998)
2.4.1 Swedish Bankers’ Association

SBA includes banks, financial companies, mortgage institutions and foreign banks with branches in Sweden. (SBA 1) Today the number of members is 39. (SBA 4) The association acts as representative for its members in contacts with authorities and other institutions. It is also a member of several international organisations in Europe8. (SBA 1)

A sound development of the Swedish banking system is the goal of the association. This development shall be achieved through the association’s compliment of its main functions and through its ownership of clearing systems. To quote the SBA the main functions of the association are:

- to act as an organisation to which matters are referred for consideration and to be a negotiation party in matters of importance to member companies,

- to be a cooperation organisation for the member companies in matters of common interest,

- to inform the member companies about matters affecting their operation/business and also to inform external organisations and individuals about conditions on the credit market, and

- to represent the banks internationally, mainly in the Banking Federation of the EU. (SBA 2)

2.4.2 Cooperation in the Payment System

Within the payment system there are different subsystems in which the banks cooperate. The subsystems are for example the mutual data clearing, bank giro service/postal giro service, the central bank’s system for payments within the financial sector (RIX) and the central for electronic card transactions (CEKAB). (Finansinspektionen, 1998)

In the data clearing system information concerning transactions between customers’ accounts in different banks is transferred and administered. Owner of this clearing system is the SBA

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8 The organisations are European Banking Federation of the EU, European Mortgage Federation and Eurofinas, Eurofactoring and Leaseurope.
but the contracted Bankgirocentral (BGC) manages it. The clearing system is a part of RIX where the settlements are administered, as seen in figure 2.1. (Finansinspektionen, 1998)

By law the Swedish Central Bank is obligated to support an effective and secure payment system, this is provided through RIX. The system liquidates gross payments between banks. Interbank payments, customer related clearing payments and the central bank’s own transactions are liquidated in RIX. All transactions are registered in RIX since all accounts among the banks are finally settled in the RIX system. A schematic picture of RIX’s role in the payment system is presented below in figure 2.1. (Konkurrensverket, 1999)

**Figure 2.1 Swedish Payment System**

1Bankgirocentralen (Central of bank giro); 2Värdepapperscentralen (The securities register centre); 3Optionsmäklarna (Option brokers)

Source: Finansinspektionen, 1998 page 14, with own revisions.

In figure 2.1 the transaction system is depicted. A payment between banks take place through debiting the payer’s bank account and a settlement between the payer’s and the receiver’s bank, which is done in RIX. Thereafter the receiver’s bank account is credited and the payer is notified by a confirmation.

The bank giro is managed by BGC, which is owned by eight banks but have 21 participants who are both national and international. Bank giro is a so called multilateral net system and is
CASHING IN ON CUSTOMERS?

an important feature in the RIX system. It can be described as a daily procedure that results in that each bank receives a net sum that is to be paid or received to/from other banks. Each net sum consists of all payments to recipients in the bank minus the net sum of all payments from remitters in the bank to other banks. Consequently the sum of all participating banks’ accounts will be zero. (Finansinspektionen, 1998)

In comparison, the postal giro and the bank giro system is quite different from each other. The postal giro is a part of the Swedish postal services and is owned by the Swedish government and is not a part of the BGC system. Since 1994 the postal giro is named Postgirot Bank AB and is now acting as a bank with payment and information services, see figure 2.1. Postal giro services have companies and individuals as their customers and sell some services to banks whilst the BGC’s customers are the banks. Through its integration with all banks the BGC can perform postal giro payments but the postal giro cannot execute transactions to customers with only a bank giro. In the near future it is probable that the postal giro will be integrated in the bank giro on application. (Konkurrensverket, 1999)

Electronic card transactions are another service that the banks cooperate with through CEKAB. It is owned by FSB, SHB, DDB and MNB, above the owners other banks such as SEB, Skandia banken (SkB) and Wasa banken (Wb) use CEKAB’s services. CEKAB’s activities are aimed at developing, maintaining and operating a system for electronic card transactions. In the operations both a clearing and technical exchange function is carried out but also authorisation and gathering of transactions is performed in the system. Some banks have their own transaction systems parallel to CEKAB but is however still connected to it, as seen in figure 2.2. (Finansinspektionen, 1998)
If a client has an account in FSB, MNB or SEB and makes a withdrawal through an ATM belonging to his/hers bank the transaction is kept within the subsystem of the bank. If on the other hand a customer withdraws from an ATM that belongs to another bank the transaction is transferred, authorised and registered by CEKAB, as can be seen in the figure above. Should both the banks have an own subsystem the transaction is carried out directly through these systems and does not include CEKAB. The SCA has criticised the cooperation with CEKAB and has not approved the participating banks’ application for a non-intervention decision concerning the cooperation. Reason for refusal from the authority was that their price-setting was found to be discriminating for smaller banks. The concern from the SCA can be founded on the large amount of transactions made through ATMs and their importance in daily banking needs where ATMs are used frequently. (Finansinspektionen, 1998)

Table 2.2 Use of ATMs in Sweden

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<tbody>
<tr>
<td>Number of ATMs</td>
<td>2226</td>
<td>2281</td>
<td>2359</td>
<td>2379</td>
<td>2370</td>
</tr>
<tr>
<td>Number of transactions¹</td>
<td>247</td>
<td>270</td>
<td>281</td>
<td>297</td>
<td>312</td>
</tr>
<tr>
<td>Value of transactions²</td>
<td>195</td>
<td>218</td>
<td>226</td>
<td>239</td>
<td>249</td>
</tr>
</tbody>
</table>

¹Million; ²Billion SEK

Source: Finansinspektionen, 1998 page 22 with own revisions.
3 GAME THEORY

Game theory plays an important role in strategic pricing analysis. Basic conceptions are introduced and the chapter will help the reader through discussions that will be presented further forward in the thesis.

3.1 Games and Oligopoly

Games try to predict behaviour and to define a strategy that can ensue this behaviour. There are several important factors when deciding on what type of strategy, which is to be used. It depends on whether it is a single period game or if the game is repeated several times. Another factor, which influence is if it is a cooperative or a non-cooperative game. The players have to consider which one of these circumstances that match their specific game. Firms try to establish equilibrium on the market through their behaviour to improve stability and predictability. (Paulsson, 1996)

Attaining Nash equilibrium is difficult in an oligopoly industry. Firms need to agree on cooperative strategies and the temptation of cheating on the cooperative agreement is always present. This can result in a classical prisoners’ dilemma for the firms. To avoid unprofitable outcomes of prisoners’ dilemma firms can coordinate their behaviour and change the payoff matrix. If players in the game exchange information they can solve the dilemma and utilise the profits from it. Distrust and uncertainty can lead to price wars. The success of cooperation in an industry is to a great extent founded on the information exchange between rivals. Since imperfect information is common in economic life firms need to find ways of creating information channels on the oligopoly market. There is an obvious risk that human error or shifts in demand can be interpreted as hostile behaviour by rivals, when imperfect information is present. (Scherer, 1990)

To avoid price wars and depreciated profits on an oligopoly market firms can collude tacitly. As a result of legislation it is illegal to collude explicitly with formal agreements and therefore is tacit collusion of great importance on oligopoly markets. Using terminology like cooperative pricing indicates the lack of explicit contracts further. Through cooperative pricing oligopolists can sustain prices that exceed the competitive pricing levels. Nash equilibriums can arise above the marginal cost price. (Besanko et al, 1996)
The interaction in the oligopoly industry can be viewed as a game and the firms are then consequently the players. In a two-player zero sum game the Nash equilibrium can be identified quite easily through deriving the best response functions for each player and finding the strategies that are common for them. In reality it is most often more difficult to analyse games but the use of game theory is still valid. In economic activities games differ in complexity and many involve variable sum profits, which occurs when total returns in the industry is not constant but vary depending on firm behaviour and their decisions. Strategies can also vary in number of moves and possibilities from only a one shot game to a game with infinite number of responses and periods. Theoretically it is a question of finding the strategies that are mutually suitable and satisfying for each firm on the oligopoly market, which results in a Nash equilibrium. (Scherer, 1990)

3.2 Repeated Infinite Games

During a repeated game the players can influence each other by threats of punishment and signalling. Because firms gain by colluding, there are incentives to cooperate if the game takes place over a long period. The problem is that explicit collusion is prohibited, therefore they can communicate by choice of strategy. Players can also punish each other if the other part does not cooperate. (Carlton, Perloff, 1994)

When real world markets are studied it is obvious that single period games are not applicable because companies compete over time. This characterises the participants’ behaviour in their actions on the market. Since pricing rivalry on the market is dynamic it is essential for firms to be aware of the long run effects of their actions. Short run benefits may become harmful in a longer perspective once their competitors have had time to react and counteract the previous moves in the oligopoly industry. When firms take long run effects into account they strive to maximise returns over the foreseeable time horizon and not only focus on the previously undertaken actions by its rivals. Short run profits can be obliterated when the other rivals have retaliated on a hostile move, for example a price cut. (Besanko et al, 1996)

When both firms are producing at monopoly price output they are making a better profit than if they were to produce more, e.g. at marginal cost pricing. By cheating on each other, one firm can make a better profit than the others by lowering price and increase output. This can

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9 Market rivalry can be viewed as dynamic since the players base their decisions not only on previous actions but also on anticipated future responses of the rivals.
CASHING IN ON CUSTOMERS?

only proceed for a short time, depending on reaction/retaliation lag. There will be a new equilibrium again but probably with a higher production and lesser profit. If the repeated games are going to end at a specific time and both firms are aware of that, there will be a time when they can raise returns by cheating on each other. The firms are not aware of when the game is going to end if the game is repeated infinitely and they can therefore not decide on when to cheat on the other part. (Schotter, 1997)

3.3 Folk Theorem

The folk theorem was first described in 1971, then it was proved that equilibrium could arise in any position between monopoly price and marginal cost pricing when games are repeated infinitely. Before that equilibrium had been observed and taken for granted but no one had proved, through game theory, how it appeared. (Gibbons, 1992) A key element is that any deviators in a game must be punished. Through the fear of punishment otherwise unlikely outcomes may occur. If there are three or more players in a game, the non-deviators will coordinate in the retaliation and sometimes even force the deviator to cooperate in his/hers own punishment. With public information, the coordination between the actors can be accomplished by the commonly observed outcome. It is possible that discrepancies can arise about the necessity of punishment if the information concerning cheating differ between the actors. To minimise the risk for this, the players can communicate on their strategies through their behaviour. This can end confusions and even result in that they recoordinate their games. (Fudenberg, Levine, 1991)

There are a total of five different theorems and three of them are based on the assumption that there is complete information and the other two on the assumption of incomplete information.

- **Theorem 1**: Both players change strategy at a certain period to minimise the other player’s maximum profit.

- **Theorem 2**: The players can be rewarded if they punish the deviator. This theorem is useful when theorem 1 is not available.

- **Theorem 5**: This theorem is also based on the assumption that the players are rewarded when they punish the deviator by using a mixed strategy. A mixed strategy can be used as a punishment even if only realised actions can be observed and not the mixed strategies. This gives a better result because that
the personally rational profit often is lower at mixed strategies than at pure strategies.

If there is incomplete information in a repeated game there are two alternative theorems that can be used, namely theorem three and four.

- **Theorem 3**: After a deviation, the cheating player will return to the Nash-equilibrium strategy in the continuation of the game.

- **Theorem 4**: After a deviation, the cheating player will return to a mixed strategy for a specific number of periods. (Fudenberg, Maskin, 1986)

The folk theorem is based on the assumption that deviators must be punished and the punisher must also have some interest in this. One way to ensure this is to punish the players who are not succeeding in punishing the deviator. There are a few different angles concerning the punishment feature and the folk theorem. Basic assumptions are that, in an infinite game, all players have got the same output. If one player deviate, he/she will be punished forever by the others. Another not so radical theory is that the deviator is punished until the profit equals the loss. Thereafter the game will return to the original state. If any of the players refuse to punish the deviator, the other players will punish them as well. (Fudenberg, Maskin, 1986)

As described above, the folk theorem proves that there can be an equilibrium at any price between the monopoly price and the marginal cost price. The assumption is that it has to be an infinite repeated game with low discount rate. There is no guarantee that there will arise an equilibrium, but it is highly possible. Basically, it depends on coordination problems and how willing the firms are to cooperate and take part of the game. (Besanko et al, 1996)

### 3.4 Tit-for-Tat

Oligopoly industries sometimes create standards or traditions (focal points) by way of example for price adjustments to minimise risks of misinterpretation and thereby stabilise the environment. The creation of focal points in the pricing strategies by such methods has proved beneficial in many industries. A focal point can be described as a strategy, which is so compelling that a firm automatically count on all competitors to follow it. How focal points emerge differ greatly because they depend on the specificity of the industry’s features. An
example of a cooperation inducing strategy or focal point in pricing is the *tit-for-tat* strategy. (Besanko et al, 1996)

Economists have tried to devise a strategy that would accumulate the best profit of the entire game. The strategy that offered most profitable outcomes is rather straightforward and is based on the assumption that the actors on a market can cooperate without forming explicit agreements with each other. This strategy is called the *tit-for-tat* strategy and its simplicity makes all actors aware of it and can act accordingly. One firm can make the announcement that it will follow the other firms no matter what happens. The other firms are aware of that and if they raise the price, the following firm will also do that. By using this sort of strategy, the members can avoid price wars and they always know what behaviour that is to be expected. (Besanko et al, 1996)

Assume that the players are two and that they have two choices of strategy, prisoners’ dilemma or *tit-for-tat*. Should both players choose the prisoners’ dilemma strategy, they will not cooperate and the profit will be rather low. If they choose one strategy each, the participant who chooses *tit-for-tat* will loose. Finally, if both players choose the *tit-for-tat* strategy they will both receive a higher return. The basic assumption in the *tit-for-tat* strategy is that the actors can cooperate at the first move and thereafter they will do whatever the other actor did in the previous move. If both players are following this strategy, they will not digress from the basic agreement and they can maintain the price level that gives the best profit. (Scherer, 1990)

The *tit-for-tat* strategy can also be used when actors are going to raise or lower the price level. Suppose that all players are going to raise the price to a monopoly price level. If one player is not following the others’ price changes (*tit-for-tat* strategy), he could capture the entire market, or at least sell up to the firm’s entire capacity, for a short period of time depending on lags. In the next period, the other participants will reduce the price again and it will return to a marginal cost price. All participants are going to share the market and the following profit will be lower for the deviator. If he would have followed the other actors to a monopoly price level, that would have been the price level for the resuming game. The total profit would have been higher. (Besanko et al, 1996)
3.4.1 Tit-for-Tat—an Example

The example is based on a case described in Besanko et al. In Sydney there were two dominant newspaper publishers and both of them where distributing morning and afternoon newspapers. John Fairfax and Sons published the *Sydney Morning Herald* in the morning and the *Sun* in the afternoon. Rupert Murdoch’s News Limited was the other distributor and published the *Daily Telegraph* in the morning and the *Daily Mirror* in the afternoon. The morning papers were differentiated and the customers were different so the competition in that sector was limited. Afternoon papers, on the other hand, had the same customers and they were substitutes to each other. During the years 1941 - 1974 there were seven different increases in price for the afternoon newspaper. Four of them where initiated by the *Sun* and immediately followed by the *Mirror*. At three other occasions the price increased instantly at the same time for both newspaper publishers. The *Daily Telegraph* and the *Sydney Morning Herald* did not act this way and did not follow each other instantly.

In July 1975 the *Sun* raised its price from ten cents to twelve cents. The *Mirror* kept the same price (ten cents), and did not follow the *Sun* and a price war started. This price war went on for three and a half years. During this time the *Mirror* increased its market share from 50 percent to 53 percent. The profit was raised with 1.6 million AUD. At the same time the *Sun’s* profit reduced with 1.3 million AUD. In January 1979 the *Sun* returned to a price of ten cents and this resulted in a change of price leadership, as a consequence the *Mirror* became the price-leading distributor in Sydney.

The *Sun* should have returned to the price ten cents immediately. That sort of reaction would have shown the *Mirror* that the *Sun* was prepared to follow the *Mirror*s price-setting, no matter what. This is an example of how to use the tit-for-tat strategy and if the newspaper publishers would have done that, they could have avoided a price war and the equilibrium would have remained. For a Swedish reader the example could resemble the Swedish market for afternoon papers. The two largest newspapers, namely Expressen and Aftonbladet, are acting in a similar manner.
4 COOPERATIVE PRICING

Coordination of oligopolists plays a crucial role in the avoidance of cheating and breakdown of collusive agreements. Possible welfare consequences and efficiency costs of collusion are also presented.

4.1 Oligopoly and Price Leadership

Explicit collusion in price-setting is in most cases illegal and can result in extensive penalties if they are identified. Tacit collusion and cooperative pricing, where firms through an autonomous recognition of mutual own interests and considerations are initiating or responding to price changes, cannot be viewed as illegal in the same sense. (Nagle, 1987)

On an oligopoly market the actors are influenced by one another. The environment cannot be described in the same sense as when pure competition is at hand. On a pure competition market, or a monopoly market for that matter, there are other factors, which are more important to managers than competitor responses. Managers on a pure competition market are not able to influence price-setting or output on the market. They hold clear-cut expectations on future demand and cost structures and they seek to maximise the predicted profits. (Scherer, 1990)

When firms on an oligopoly market act they are aware of their competitors. Since only a few competitors are present on the market they need to consider the choices that the rivals make. Decisions are made on the basis of anticipated responses and opinions by rivals. Profitability and performance are determined by the decisions of firms. Because of the many responses and opinions, which need to be calculated before an actor makes a decision, there is a great deal of uncertainty on an oligopoly market. Industry profitability can vary dramatically as a result of this. Any outcome is virtually possible and this needs to be recognised. Game theory can play an important role when predicting the outcomes of decisions and industry profitability. It is also essential to be aware that different industries and the firms themselves have varying prerequisites, which can provide facilitating features for a collusive cooperative pricing. (Scherer, 1990)
4.1.1 Price Leadership

On an oligopolistic market the firms have to maintain the communication between the actors to ensure a stable future and avoid price wars. The actors also want to avoid a situation like the prisoners’ dilemma equilibrium and thereby become more profitable. One way to maintain a communication between actors is to cooperate in explicit collusions but these are often illegal. Another way, often legal, is to use price leadership as a means for tacit collusion. (Besanko et al, 1996)

Price leadership means that a certain company is accepted by the others as a leader who are to announce price changes so that the others can follow suit. The reason to why one specific firm is accepted as a price leader differs. It can depend on the firm’s special influences over the other firms or its effectiveness to set price that maximise profits for all firms. There are three different types of price leadership, namely dominant firm, collusive behaviour and barometric behaviour. (Scherer, 1990)

A firm that dominates the industry and sets a price that best serves its interests is called a dominant firm. The firm is nevertheless taking into account how the expected supply reaction curve is going to look like for the other firms. Dominant firm occurs when one specific firm has got a large market share, other sellers are to small to affect the price or when a firm has got a sufficient cost advantage over rivals. (Scherer, 1990)

Collusive behaviour is a monopolistic solution on an oligopolistic problem. It arises when an industry is tightly oligopolistic, the sellers’ products are close substitutes (homogeneous) and the cost curves are similar. Other factors are the existence of entry barriers and that the demand is relatively inelastic so that prices increases are profitable. (Scherer, 1990)

Barometric leadership is characterised by a price leader that adjusts the price to fluctuations in demand and supply curves. The price that is set corresponds to the price that should appear on a free market. Leadership is often shifted and all firms are approximately the same size. Therefore no firm is dominating the others, over a longer period, and the shift in price is occurring almost at the same time for all firms. (Scherer, 1990)
When price leadership is at hand, the other firms are giving up their own price strategy to a single firm. The reason for this is to avoid communication problems. According to an example in a previous chapter the price leadership strategy can fault if the price leader does not act immediately to hinder and punish the defectors. In the Sydney newspaper example Murdoch deviated from Fairfax’s price strategy and leadership. Fairfax did not take Murdoch’s deviation seriously and this resulted in a price war that Fairfax lost and Murdoch became the price leader instead.

4.2 Welfare and Cost Efficiency

Welfare losses occur when prices are raised above marginal costs. If firms cooperate and use collusive pricing the price level will often stabilise on a higher level then possible without cooperation. The price stabilises above the marginal cost price. On markets with few firms this sort of cooperation is common. Oligopolists can ensure higher price levels by hindering other actors from entering the market. As a consequence of a higher price level the quantity will be lower than in perfect competition. With a higher price and restricted output a welfare loss is established. The loss is attributable to the diversion and misallocation of resources. It consists of the sum of lost consumer and producer surplus deriving from the deviation of marginal cost pricing. How high the welfare loss is depends on the size of price distortion. (Scherer, 1990)

There are possibilities that oligopolists who experience high market concentration can have positive welfare effects. Welfare gains are potential when firms can exploit economies of scale and scope as a result of their sizeable production. Goods and services can then be supplied at lower price and higher quality than at lower concentration and smaller scale. These potential effects can be obliterated if firms collude and diminish competition. (Cetorelli, 1999)

It is possible that there are other elements, which cause higher costs for the society than the welfare losses. In a report Berger and Hannan (1998) discuss the possibility that efficiency costs associated with market power would exceed the welfare losses. Efficiency costs can appear since successful collusions give rise to extensive profits. Large profits due to market power and/or collusive agreements filter economic signals. The welfare loss is only applied to the units that were foregone as a result of higher prices, charged by colluding firms.
Efficiency cost may apply to every unit of output produced by the firms and that is why these costs are higher. (Berger, Hannan, 1998)

As a result of collusive pricing firms can experience efficiency costs in four different aspects. Firstly managers may not work hard enough to minimise costs in their operations. A “cushion” is created by the difference between the competitive price and actual price. Consequently, managers are not as disciplined in cost reducing objectives. Owners enjoy economic revenues without maximising the results. Secondly, managers can without competitive pressures focus on other tasks than maximising profits, such as activities spurred by managers self interests. Thirdly, it is probable that managers will spend resources on maintaining and obtaining market power. This can increase profits further but is still costly. Fourthly, a “profit cushion” from cooperative pricing might allow incompetent/inefficient managers or practises to continue in operations. (Berger, Hannan, 1998)
5 Structural Conditions and Collusive Potential

Conditions, which affect the sustainability of cooperative pricing on market level, will be disclosed. Structural conditions and their influence on sustainability of tacit collusion are a central component in the discussion. The conditions will later be presented in tabular form in the conclusion of this thesis.

5.1 Collusive Potential

Market structures influence the sustainability of cooperative pricing. Coordination of focal points can be facilitated by some structures and ruined by others. To avoid harmful and costly cooperations in industries the oligopolist need to analyse the potential of creating a winning cooperative pricing strategy. The importance of the respective conditions can vary between industries of various kinds. All conditions are valid to incorporate in the analysis when colluding is an option in an oligopolistic industry. Often the facilitating features of the conditions depends on whether they enable exchange of information and diminish uncertainty. (Besanko et al, 1996) It is not sufficient to only incorporate a single condition, or a few, when determining the viability of cooperative pricing. Cartel-like behaviour through cooperative pricing is influenced by a multiplicity of structural factors, which interact between one another. (Fraas, Greer, 1977)

5.2 Market Concentration

The more concentrated a market is, the more likely an appearance of a sustainable cooperative pricing equilibrium is. This is the base of the traditional Structure-Conduct-Performance, (SCP)-paradigm. In recent studies the paradigm has been statistically proven on some markets and the efficiency hypothesis has been rejected. Studies have confirmed that increased concentration fosters collusion and competitive practises10. (Forbes, Molyneux, 1995) Generally, as the number of firms expand and the respective firms’ share of industry output decrease, the individual firm itself is less inclined to take their behaviour’s effects on competitors actions into account. Above that, the probability of deviators from the cooperative pricing strategy increases with the number of firms. There are also problems

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10 Efficiency hypothesis states that industries’ structures are based on superior efficiency by some firms and other are forced to leave and thereby are high profits possible as a result of their superior effectiveness. When studying the European market this hypothesis is statistically rejected in favour of the SCP-paradigm. This will be discussed further in chapter eight.
concerning different views on what level the cooperative price should be set\textsuperscript{11}. Some economists have found that the coordinating problems grow almost exponentially as the number of firms increase, if no coordinating agency is constructed. (Scherer, 1990)

On a concentrated market the benefit-cost ratio increases as the number of firms decrease. Overall benefits are divided between fewer firms the more concentrated the market is. Consequently it is more profitable to collude when concentration is high. The respective firm captures a large fraction of the benefit when the price is raised to a new equilibrium, which exceeds the competitive price level. Gains from cheating on a cooperative pricing strategy are smaller when the market share for respective firm is large to begin with. A firm, with a large market share, can cheat on the collusion. The proportion of the stolen market share from the other competitors is then small compared to the benefits from continuing with cooperative pricing. One reason for the small benefits of cheating on a tacit collusion with few competitors is that defection is recognised quickly. Firms can monitor the other colluding firms. The fewer the competitors are the less costly it is to monitor their pricing and market behaviour. Even if they do not monitor the firm explicitly it is quite easy to detect cheating. Cheating affect the competitors market share in a more pronounced way when the number of firms are large. On a fragmented market firms sometimes experience dramatic changes in their market share as a result of changed customer preferences, which take place randomly. Even small shifts in customer preferences affect them since the shifts are large in relation to their share of the market. These small shifts are hardly recognised by larger firms with a substantial market share. On a concentrated market the shares does not fluctuate as much, relative to firm size, as on a fragmented market. As a result firms can detect and match cheating easier, faster and at a lower cost\textsuperscript{12}. Thus, market concentration facilitates cooperative pricing in a number of ways. (Besanko et al, 1996)

Market concentration’s facilitating features for cooperative pricing has been recognised by policy makers in both the USA and the EU through antitrust laws. Law sections concerning antitrust issues have therefore stated thresholds based on Herfindahl’s indexes\textsuperscript{13}. When these

\begin{equation}
\text{Herfindahl’s index } = \sum_i (S_i^2).
\end{equation}

\textsuperscript{11} Unless there is some form of coordinating institution such as a price leader or trade association these problems can overthrow a numerous tacit collusion strategy.
\textsuperscript{12} Readers can find more information about this topic in George Stiegler’s books oligopoly theory e.g. “A theory of Oligopoly”, Journal of Political Economy, Vol 72, Iss 1, 1964.
\textsuperscript{13} Herfindahl’s index is calculated through the sum of the squared market shares for all the firms on the market, \( S_i \) represents the market share of firm \( i \).
thresholds are crossed, for example when a merger is undertaken, the authorities intervene to ensure competitive conditions on the markets. To avoid challenges from antitrust authorities firms need to be aware of the resulting concentration index that a merger can bring about. The central role market concentration has in antitrust laws emphasises its importance when forming a sustainable tacit collusion. (Besanko et al, 1996)

5.3 Firm Symmetries

When firms on an oligopoly market are faced with different cost structures, capacities or qualities it is difficult to agree on a certain price level. It ought to be obvious for the reader that heterogeneity of goods is disadvantageous when firms try to compete through prices, see subheading 5.4 for further discussion. When product homogeneity precludes any other means to compete than price, the role of cost structures is accentuated. Even if the market concentration is high the impediment through asymmetric cost functions can make collusion impossible. Firms will have divergent views on which price that maximises profits. In other words, it is hard to find a focal point for the industry’s operators and this is shown in figure 5.1. It is possible that one firm can impose its will onto other firms in the industry through price leadership and thereby create a focal point. (Besanko et al, 1996) A leading firm’s effect can also affect the probability of a collusive outcome negatively. It can be argued that a leading firm with a substantial cost advantage would not have much to gain from cooperative pricing. Its potential gains from colluding would be rather small as a result of its leading role and considerable cost advantage. (Schmalensee, 1987)
In figure 5.1 an example with a duopoly is presented. The firms (A and B) have diverging cost functions (MC\textsubscript{A} and MC\textsubscript{B}) and both firms have a marginal revenue curve, which is equivalent to (mr). Demand for each firm on the market (D) is equal to the total revenue (MR) and hence (MR=D). Total market supply (MC\textsubscript{A+B}) is given by a horizontal summation of the two cost curves. Firm (A) maximises its profits at a higher level (P\textsubscript{A}) than firm (B) which maximise its profits at (P\textsubscript{B}). The problem is thereby obvious since neither price will maximise the industry revenue. To achieve a maximisation of the industry’s revenue they must set the price (P*) which arise from equating industry supply (MC\textsubscript{A+B}) to the industry’s revenues (MR). When this price (P*) is set, the market shares are unequally distributed and consequently the gains from a cooperative pricing strategy differ between the two. If the profits of a tacit collusion are very different there is an obvious risk that firm (A), which output is decreased at the cooperative price level, will have an incentive to cheat on the collusion. Cheating on the price can of course be avoided if the firm, whose profits are raised through the cooperation, can compensate the other less successful firm. In reality it appears difficult to achieve a compensation agreement or hinder defection by firms with higher cost functions. (Hay, Morris, 1991) In summation it can be noted that when cost and/or market shares differ
between competitors on an oligopolistic market, conflicts arise. The conflicts interfere with long term maximisation of collective industry profits facilitated through cooperative pricing. Disagreement on price is made more difficult by the need for secrecy and lack of explicit contracts as a result of legislation. (Scherer, 1990)

Asymmetry in size and capacity among the firms in an oligopoly industry affects the sustainability of cooperative pricing. Small firms defect from collusions more often than large operators do. An obvious reason for this is their smaller portion of profits. Larger firms capture a more extensive share of the total profits and thereby they have more to gain from cooperative pricing. Since large firms have a lot to gain from cooperative price-setting they have little incentives to punish small defectors. The fraction of demand, which a small firm captures through undercutting the collusive price is generally too insignificant to result in punitive actions from the large market actors\(^\text{14}\). Before sizeable firms act, if at all, they need to estimate the benefits and costs from punishing the defector(s). If the larger firms recapture the market share through price cutting the profits might not correspond to returns prior to the price reduction. A price cut affects their whole supply on the market and has a sizeable effect on returns and needs to weight against a small reduction in sales. If large firms retaliate on defective behaviour there is also an apparent risk of price war and a breakdown of the collusion. Hence, the impact of smaller firms’ cheating on collusion generally needs to be extensive for the larger actors to act and punish their behaviour. (Besanko et al, 1996)

**5.4 Product Heterogeneity**

Heterogeneous products are hindrances to cooperative pricing and heterogeneity can be found on four different planes. When products on a market are homogenous the rival firms compete only through price. On oligopolistic markets the competitors only need to find focal points in a single dimension if the product offering is homogenous, this makes collusion easier. The more dimensional the heterogeneity is the more complex the coordination is and can, in fact, make cooperation impossible. Product heterogeneity classification can be presented through the increasing degree of dimensionality:

1. Interfirm differences in quality, either real or subjective and consequently price differentials.

\(^{14}\) The reason why the undercutting firm does not capture the whole demand on the market can be a result of its small-scale and thereby limited capacity or horizontal differentiation.
2. Transportation costs, the more varying distances the greater the complexity.

3. Dynamic and unstable product qualities as a result of technological change or fashion pressures.

4. Non-standardised and custom made products.

Higher number indicate increasing level of complexity, where custom made products is the most complex and make collusion very hard to obtain and maintain. Even an emergence of an explicit agreement is unlikely with the high complexity which non-standardised or dynamic quality product offering entails. The most negative impact on cooperative pricing policies appears to stem from multidimensionality of a product’s technological characteristics. (Scherer, 1990)

There are however some features of product heterogeneity that can affect collusion in a positive manner. If the sellers on the market can establish strong brand loyalty, profits can be raised in spite of heterogeneity. It is also possible to attain high revenues if economies of scale in product differentiation can offer a barrier of entry on the market. Hence, the net effects of product heterogeneity depend on the characteristics of the market’s product differentiation. Heterogeneity does not necessarily need to harm a cooperative pricing practise. (Scherer, 1990)

5.5 Multimarket Contact

External factors such as multimarket contact may have an impact on the degree of competition in any industry. Multimarket contact is more prevalent in some industries than others. The interaction does not need to be confined to multiproduct industries but also single-product firms that compete in a number of geographically dispersed markets. Effects from multimarket contacts vary and depend on other market characteristics. Generally, it can be described as a moderating feature which can relax otherwise harmful factors for a sustainable cooperative pricing. (Bernheim, Whinston, 1990)

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15 What influences the consequence of multimarket contact is the number and type of markets that the firms compete over. The behaviour of actors on the market and potential actors (e.g. through entry) also affects its influence on collusive outcomes.
Multimarket competition between a number of firms can relax the problems when cost pressures vary and thereby facilitate tacit collusion. There is a possibility of symmetric advantages among the firms. On some markets one firm may have an advantageous position and on other markets competitors will be faced with lower cost pressures. An example of symmetric advantages could be when transportation costs are important and firms’ production centres are geographically dispersed. (Bernheim, Whinston, 1990)

Punishment for deviating can become more threatening when firms compete over several markets. There is a greater possibility that punishment can be carried out on markets where the deviating firms has yet to cheat on the price collusion. Since it is more costly for a firm to cheat when it is punished on many markets, by the previously colluding firms, the benefit-cost ratio from not cheating on the collusion is increased. (Bernheim, Whinston, 1990)

5.6 Volatility of Demand

When demand is volatile it is harder to detect deviators from the collusion. Firms have problems of identifying whether shifts in demand stems from price cutting, from members in the collusion, or just a change in customer preferences and/or demand. If firms can observe other firms’ price and market share it is possible to identify the source of the decline in sales. Since information often is sparse, firms can base their assumptions on previous experience from market occurrences when making assumptions on the source of demand shifts. The higher fixed costs that businesses in the industry meet the more harmful variations in demand are. When fixed costs have a substantial proportion of production costs the fluctuations in preferred price level will be hefty. As a result of volatility in preferred prices coordination is made difficult. When demand shifts in an industry, cooperative pricing is easier to facilitate if variable costs make up a large proportion of production costs. (Besanko et al, 1996)

5.7 Buyer Concentration

A large number of buyers have a facilitating effect on cooperative pricing. When buyer concentration is high there is little incentive for buyers to reveal price terms. There is an obvious reason for many small buyers to announce the prices that they meet in the industry. Price cuts are reported from the buyers to other producers since they want to experience overall price reductions and pressure prices further. Concentration of buyers shift power from

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16 A certain degree of caution should be taken when drawing conclusions from past experience since firms easily can change their behavioural pattern and price strategy.
the sellers and can consequently affect industry profitability. Large and concentrated buyers have incentives to keep price reductions secret and thereby obstruct a cooperative pricing strategy. (Besanko et al, 1996)

5.8 Lumpiness of Orders

Frequencies of orders help to facilitate collusion. Coordination is difficult to achieve when orders are lumpy and infrequent. If orders are small, frequent and consistent it is easier to coordinate and sustain cooperative pricing strategies. Deviators are then easy to detect and cheating will not be long lived. Certain industries are typically characterised by lumpiness of orders, for example heavy industries that demand considerable contribution of capital. Those industries will find it difficult to maintain sustainable price collusion as a result of poor coordinating features. The lag between cheating and detection/retribution can be of significant length when lumpiness is at hand. (Scherer, 1990)

5.9 Secret Price Terms

When price terms are secret it is obviously difficult to detect cheating on cooperative pricing agreements. Competitors’ prices are arduous to attain and as a result there are incentives for the actors on the oligopoly market to cheat on the collusion. Firms can receive large returns because the detection lag will be considerable, if ever detected. Since little, if any, information is exchanged between the market actors there is a great risk of misreads, which can overthrow the collusion. Temporary shifts in demand or behaviour may be interpreted wrongly as hostile actions and result in price-cutting by all. Thus, when secret price terms are practised in industries, collusion is unlikely to arise since control and thereby coordination is very hard to achieve. (Besanko et al, 1996)

5.10 Information and Trade Associations

Information exchange is an important facilitating feature for price collusions. When uncertainty is decreased it is easier to detect cheating firms and the incentives for defecting is lower as a result of decreased profitability. Misreads are also avoided and the previously discussed problems under secret price terms does not occur. When firms form a trade association, or another type of strategic group, information is distributed effectively. What should not be overlooked are the social interactions in an association. Social connections can create emotional ties between the members and possibly help collusion if cheating seems less desirable. (Carlton, Perloff, 1994) It has been proved in research that trade associations have a
grea of influence on collusions. Fraas and Greer did an extensive analysis of all antitrust cases at the Department of Justice in the USA between the years 1910-1972 and consisted of 606 cases of price fixing. Their results are partly presented in table 5.1, below.

Table 5.1 Number of Firms in Collusions without Trade Associations

<table>
<thead>
<tr>
<th>Category</th>
<th>No of cases</th>
<th>Median number of firms- no trade organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure price fixing</td>
<td>98</td>
<td>6</td>
</tr>
<tr>
<td>Bid rigging¹⁷</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>Standardisation¹⁸</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Trade association</td>
<td>62</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: Fraas, Greer, 1977 page 37 with own revisions.

As can be seen in table 5.1 the number of firms that collude increase when a trade association is present. Cases of pure price fixing reveal a median number of six firms whilst price collusion with trade organisation can incorporate more firms and still sustain the collusion. The results in table 5.1 are significant at a level of one percent. When trade associations are incorporated for all categories of markets the effect of associations is even more obvious which is illustrated in table 5.1.

Table 5.2 Number of Firms in Collusions with Trade Associations

<table>
<thead>
<tr>
<th>Category</th>
<th>No of cases</th>
<th>Median number of firm-trade organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade association</td>
<td>62</td>
<td>14</td>
</tr>
<tr>
<td>Bid rigging</td>
<td>26</td>
<td>12</td>
</tr>
<tr>
<td>Standardisation</td>
<td>15</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Fraas, Greer, 1977 page 38 with own revisions.

The number of firms in collusions increases dramatically when trade associations are incorporated in the market agreements, as seen in table 5.2. With an association the number of players in collusive agreements can rise from relatively low figures, such as in table 5.1, to quite a few members. Evidence from the research show that when the market settings and/or number of actors on the market increase firms must find an instrument to facilitate collusion and joint profit maximisation. Trade associations appear to do just that through its information

¹⁷ Bid rigging is at hand when sealed bidding and sales in large aggregates take place at infrequent intervals. To avoid fierce competition the competitors arrange their bidding through collusion.
channels, social contacts and coordinating characteristics. The association makes collusion possible where structural conditions most often would hinder coordination and cooperative pricing. (Fraas, Greer, 1977)

When products are heterogeneous the actors device special agreements to compensate the lack of price comparison, competition is focused on non-price matters. Standardisation of terms, conditions and basing point pricing can help firms to sustain the collusion when goods are heterogeneous.
6 Facilitating Features on Firm Level

This chapter will describe how firms themselves can affect the sustainability of cooperative pricing. The practices either facilitate coordination or reduce incentives for cheating on the collusion through price-cutting.

6.1 Advance Announcements of Price Changes

When firms proclaim a foregoing price change before it is going to come into effect this is called an advance announcement of price changes. For example, in the USA medical industry, the announcement of future price changes is made 30-60 days before the change is going to appear. The reason to use advance announces of changes is to eliminate the uncertainty about rivals that possibly is holding lower prices. It also gives the firm a possibility to adjust the announced price if the rivals not are following the price change. (Besanko et al, 1996)

Suppose there are two identical companies acting on a market and they announce a future price change one month preceding the actual change. The companies adjust the price until they are satisfied and preferably at monopoly price level. Monopoly price appears because both companies know that the rival always will follow the other’s price-setting. Each company will take one half of the market share and each company’s profit will be one half of the market, no matter what price, all other things being equal. Therefore each company is maximising its profit at monopoly level and sustaining collusion. (Besanko et al, 1996)

6.2 Most Favoured Customer Clauses

Most favoured customer clauses are incorporated in sale contracts and results in that the buyer is guaranteed the lowest price from the seller. There are two types of clauses, namely contemporaneous and retroactive, the respective names of the two types indicate their design. The effect of contemporaneous clauses is that a buyer will always receive the lowest price, the seller is offering its goods for, during the contract period. In a retroactive clause the seller agrees to compensate the buyer if he/she sells the product at a lower price to any of the buyer’s competitors within a certain time period after the expiration of the contract. (Besanko et al, 1996)

Price competition is repressed by most favoured customer clauses. The clauses make it expensive for the seller to undercut collusive prices in the future when retroactive clauses is at
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hand. Contemporaneous clauses discourage firms to pursue selective price cutting in their competition. It may appear that the incentives for firms to adopt most favoured customer clauses would be low and most appreciated if only their competitors were to adopt them. Sellers, without most favoured clauses, could then theoretically cut prices either selectively or generally. Research has however found that there are incentives for firms in an oligopolistic industry to adopt retroactive clauses. The reason for this is its alleviating effect of future price competition. (Besanko et al, 1996)

6.3 Uniform Delivered Pricing

Choice of pricing methods can affect the competition on the market. When sellers and buyers are geographically secluded transportation can play an important role in competitive climate. The extent of transportation costs impact on competition depends on its fraction of the products’ total value\(^\text{19}\). Generally, two different types of policies are most prevalent when pricing policies is discussed, that is free on board (FOB) and uniform delivered pricing. Under FOB the buyer absorbs all transportation cost and collects the goods at the seller’s production facility. This does not encourage cooperative pricing. When using uniformed delivered pricing the sellers offer all buyers a single delivered price and the seller is liable for the transportation costs. (Besanko et al, 1996)

The facilitating feature for cooperative pricing from uniform delivered prices stems from the possibilities of low cost of retaliation on cheating firms. A firm can punish a defecting company in a more precise manner under uniform delivered prices than under FOB-pricing. Firms then only lower their prices on the particular market(s) that the defecting firm is undercutting in. If FOB-pricing were at hand they would be required to lower the price for all customers on all markets, instead of just one. Since firms can retaliate at a lower cost punishment is more probable and cheating become less attractive. Cooperative pricing is thereby facilitated through the increased credibility of retaliation. (Besanko et al, 1996)

6.4 Use of Inventories and Order Backlogs

Inventories facilitating role in collusions partly stems from its credible threat of punishment if deviation take place. Higher inventories facilitate a more powerful punishment and can consequently strengthen cooperation further. Holding inventories serve as a strategic commitment to uphold cooperative pricing. When sales/demand increase the need for
inventories is also increased since the incentives to deviate grow in absence of inventories. Since the possible gains from deviation become larger when demand is high the punishment needs to be more severe and consequently it is necessary to increase level of inventories. (Rotenberg, Saloner, 1989)

Another positive feature from inventories and order backlogs is buffering when demand fluctuates. When demand drops the dominant firm or the price leader can lower the price. Fringe firms can misinterpret this action as an incentive from the dominant firm to capture market shares. To avoid this, the dominant firm can allow the inventories to grow (buffering) and thereby uphold a higher price. The price reduction is not occurring because the supply on the market is still the same while the inventories are growing. When the demand is changing and increasing the dominant firm can reduce the inventories instead of raising the price. When using this strategy the dominant firm sacrifices the opportunity to capture market shares but instead it ensures a long-run balance on the market. (Rotenberg, Saloner, 1989)

6.5 Financial Structures

The financial structure of firms can affect the industries’ ability to sustain collusion. There are important strategic connections between the financial structure of firms and their production decisions. Debt has a negative effect on the incentives to maintain cooperative pricing. Equity holders induce financial leverage to be included when studying sustainability of cooperation through their quest for maximisation of equity value instead of maximising industry profit. Degree of leverage changes the payoff to equity and thereby affects the equilibrium market strategies of the equity holders. (Stenbacka, 1994) The change of equilibrium stems from shareholders change in risk when the debt ratio changes. When the liability is raised through increased financial leverage shareholders demand higher returns and this can result in more aggressive behaviour by firms. (Brealey, Myers, 1996)

Increased debt ratios in oligopolistic firms make deviation from collusions more preferable for equity holders since the level of sustainable collusive price is lowered. Increased debt ratio decreases costs of cheating but the ratio do not affect the actual gains from cheating. When financial leverage is increased, firms are tempted to deviate. As a consequence they lower the price level to avoid cheating. The decrease in price is made in order to overcome these

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19 Problems of transportation costs are also discussed in section 5.4 when product heterogeneity is discussed.
incentives for cheating, lower prices can help to maintain a certain degree of collusion. This is a result of agency costs of the oligopolists and diminishes their returns from the collusion. Financial leverage may also have a facilitating feature if it creates an entry barrier for potential entrants, which can counterbalance some of its negative effects. (Stenbacka, 1994)

20 Other positive effects from increased debt ratios, such as tax advantages, are not dealt with here but the reader can turn to Brealey and Myers book to find a more elaborate discussion concerning debt ratios.
7 Research in the Swedish Banking Sector

The chapter presents current research findings concerning price-setting and behaviour on the Swedish banking sector. Research from three different institutions will be submitted, namely the European Commission, the Swedish Competition Authority and the Swedish Financial Supervisory Board. Results from the findings in the research will have a central role in the analysis.

7.1 European Commission – Fees Charged for Banking Services

In the report “Fees charged for banking services” the EC has studied average costs for banking in the 15 member states in the EU. What caused the EC to undertake the study was that previously free services were becoming fairly expensive. Costs associated with holding a bank account and a credit was scrutinised in the study. Through the study the Commission wanted to increase consumer information and create a greater transparency of the banking costs within the EU. To display a fair picture of fees charged the Commission selected six to nine banks in each country to collect data from.

To enable an analysis and comparison for all member countries customers were divided into different groups. Each consumer group represents a specific demand for service and financial position of the consumer. Best fit for Swedish consumers’ account usage is found in type one or two. These types are low or low-medium users of bank accounts, have no or little indebtedness and have no endorsed overdraft. Consumer type three is a medium user with medium indebtedness. Type four is a high user of bank account with a likewise indebtedness. The difference between the first four and the last four types is that the latter has accounts with endorsed overdrafts. Classification of the consumer types is not a faultless task but is needed to enable a comprehensible comparison. What makes classifications quite difficult is that differences in banking habits are apparent both between member states and banks within the countries. There is a large difference in the size of fees charged among the countries and this is presented below in table 7.1. Sweden stands out as the most expensive country in the EU for all types of consumers.

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21 This chapter is based on the European Commission report, Fees Charged for Banking Services, 1997.
22 In Sweden the selected banks were SB, FB, MNB, DDB, SEB and SHB.
Table 7.1 Average Cost in ECU of Banking and Cost Ranking 1996.

<table>
<thead>
<tr>
<th>Country</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUS</td>
<td>45 (9)</td>
<td>71 (7)</td>
<td>80 (7)</td>
<td>114 (6)</td>
<td>63 (7)</td>
<td>88 (6)</td>
<td>95 (6)</td>
<td>129 (4)</td>
</tr>
<tr>
<td>BEL</td>
<td>32 (5)</td>
<td>38 (4)</td>
<td>40 (3)</td>
<td>55 (2)</td>
<td>57 (5)</td>
<td>64 (3)</td>
<td>66 (2)</td>
<td>80 (2)</td>
</tr>
<tr>
<td>DEN</td>
<td>29 (4)</td>
<td>61 (6)</td>
<td>80 (6)</td>
<td>137 (7)</td>
<td>52 (4)</td>
<td>84 (4)</td>
<td>103 (4)</td>
<td>160 (6)</td>
</tr>
<tr>
<td>FIN</td>
<td>40 (7)</td>
<td>71 (8)</td>
<td>93 (8)</td>
<td>140 (8)</td>
<td>58 (6)</td>
<td>86 (5)</td>
<td>108 (5)</td>
<td>155 (5)</td>
</tr>
<tr>
<td>FRA</td>
<td>66 (12)</td>
<td>132 (11)</td>
<td>182 (12)</td>
<td>251 (11)</td>
<td>89 (11)</td>
<td>155 (10)</td>
<td>205 (10)</td>
<td>274 (11)</td>
</tr>
<tr>
<td>GER</td>
<td>40 (8)</td>
<td>53 (5)</td>
<td>66 (5)</td>
<td>81 (5)</td>
<td>51 (3)</td>
<td>63 (2)</td>
<td>77 (3)</td>
<td>91 (3)</td>
</tr>
<tr>
<td>GRE</td>
<td>52 (11)</td>
<td>143 (12)</td>
<td>175 (11)</td>
<td>291 (13)</td>
<td>72 (9)</td>
<td>162 (12)</td>
<td>195 (12)</td>
<td>311 (13)</td>
</tr>
<tr>
<td>IRE</td>
<td>18 (2)</td>
<td>28 (2)</td>
<td>36 (1)</td>
<td>57 (3)</td>
<td>69 (8)</td>
<td>98 (7)</td>
<td>122 (7)</td>
<td>171 (7)</td>
</tr>
<tr>
<td>ITA</td>
<td>85 (13)</td>
<td>159 (13)</td>
<td>199 (13)</td>
<td>288 (12)</td>
<td>106 (12)</td>
<td>179 (13)</td>
<td>219 (13)</td>
<td>308 (12)</td>
</tr>
<tr>
<td>LUX</td>
<td>24 (3)</td>
<td>32 (3)</td>
<td>38 (2)</td>
<td>52 (1)</td>
<td>135 (1)</td>
<td>42 (1)</td>
<td>48 (1)</td>
<td>62 (1)</td>
</tr>
<tr>
<td>NET</td>
<td>33 (6)</td>
<td>118 (10)</td>
<td>130 (9)</td>
<td>238 (10)</td>
<td>50 (2)</td>
<td>135 (9)</td>
<td>146 (9)</td>
<td>254 (10)</td>
</tr>
<tr>
<td>POR</td>
<td>51 (10)</td>
<td>91 (9)</td>
<td>131 (10)</td>
<td>173 (9)</td>
<td>75 (10)</td>
<td>115 (8)</td>
<td>155 (8)</td>
<td>198 (8)</td>
</tr>
<tr>
<td>SPA</td>
<td>96 (14)</td>
<td>200 (14)</td>
<td>305 (14)</td>
<td>440 (14)</td>
<td>111 (13)</td>
<td>216 (14)</td>
<td>321 (14)</td>
<td>455 (14)</td>
</tr>
<tr>
<td>SWE</td>
<td>129 (15)</td>
<td>259 (15)</td>
<td>337 (15)</td>
<td>500 (15)</td>
<td>175 (15)</td>
<td>304 (15)</td>
<td>383 (15)</td>
<td>545 (15)</td>
</tr>
<tr>
<td>UK</td>
<td>11 (1)</td>
<td>27 (1)</td>
<td>43 (4)</td>
<td>60 (4)</td>
<td>124 (14)</td>
<td>157 (11)</td>
<td>185 (11)</td>
<td>212 (9)</td>
</tr>
</tbody>
</table>


Figures in parentheses indicate each countries ranking relating to the cost for the respective consumer type. Number 15 indicate that the country has the highest cost and 1 represent the lowest for that particular consumer. Sweden shows little correspondence when it comes to cost in comparison with its neighbouring countries in the northern part of Europe. If Sweden is not admitted in a comparison of the group of states in northern Europe, for example FIN, DEN, GER and UK, the cost pressures appear to be more similar and remain in a closer ranking vicinity.

High transaction fees for banking services is the reason why Sweden diverges extensively. To visualise the large differences in cost per transaction table 7.2 is presented below with a selection of countries.
When looking at specific transaction fees Sweden distinguishes itself when it comes to
cheques, cards, credits and transfers, even in the high cost group, as very expensive. According to the EC Sweden’s high costs are assumed to be due to:

- costly advanced banking technology is passed onto the consumers
- high interest rates
- low account balances.

The results in the report by the EC with its consumer types might not reflect the actual banking habits in the respective country. Therefore there is a possibility that the results are somewhat exaggerated since some services with very high fees are likely to be avoided by customers. Trends are though believed to be correct and Sweden remains the most expensive country for banking services.

### 7.2 Reports from the Swedish Financial Supervisory Board

The SFSB has on the commission of the Swedish government produced two different reports concerning fees, information and customer behaviour on the banking market. In the instructions the board was requested to produce an overview of demanded bank services,

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how they are used and what costs are associated with the usage. Distribution of information was also a concern to be analysed. One of the reports also wanted to examine if customer mobility is ensured with the technical development and does not hinder it. It is important that the banks do not incorporate factors that obstruct the customers’ mobility on the market.

Fees in the banking sector are often set to influence customer behaviour. Banks try to divert their clients from traditional teller service to more cost-effective services. Self-service and automation impose lower costs for the banks and result in larger responsibility for customers when undertaking banking errands. To achieve this, banks raise fees extensively on certain services that they do not want to handle, such as cheques and transfers. The board criticises that some services associated with low cost for the banks are imposed with high fees to change customer behaviour. In the banking sector there is asymmetry of information since banks does not succeed in their marketing and dispersion of information. Customers’ lack of information is often founded in one of these three causes:

- information from the bank concerning the contracts are unclear
- terms in the contract are imperfect or faulty
- customers have not informed themselves or been able to grasp the information and terms. (Finansinspektionen, 1999)

If information asymmetry is at hand, the instruments on the market will not work properly. On a well functioning market prices are supposed to be one of the most important means of competition. It is difficult for customers to evaluate their opportunities and as a result competition and efficiency is affected negatively. Price information is available for clients, according to the interviewed banks but customers does not share this opinion. (Finansinspektionen, 1998) From the board’s interviews it is fairly obvious that most customers have a very poor apprehension about bank fees and contract terms. In the interview, 69 percent of the group stated that they found it difficult to compare the banks’ fees. The customers also believed that offered services and their respective prices did not differ between the banks. Many clients were of the opinion that the banks tied them up and
hindered them through offering service packages. These packages also make price comparisons difficult between the banks since the cost of each service is not stated separately.

Most of the interviewed clients state that the size of fees does not determine their choice of bank. Other factors, such as service satisfaction, play a more crucial role in their decision and is visualised in diagram 7.1. (Finansinspektionen, 1999)

**Diagram 7.1 Stated Determinants of Bank Changes for Interviewed Customers¹**

In the figure above the results from the 148 deep interviews carried out by the SFSB, is presented. It can be seen that poor service and fees are the foremost reasons to changing from one bank to another. Service satisfaction is crucial to maintain customers. Simplicity, availability, control and quickness are incorporated into the service definition. Though prices influence behaviour, it should be noted that the customers do not believe that they would change their behaviour if fees were removed. Customers’ habits affect the use of services to a great extent. (Finansinspektionen, 1999)

The SFSB has found that the supplied information from the banks is often insufficient. Information concerning increases in fees are found to be inadequate and is not supplied

¹In percent
Source: Finansinspektionen, 1999 page 18.
according to the government report from 1995\textsuperscript{24}. General contracts without specific information about fees connected to the supplied services from the contractual agreement are common. The board finds this unacceptable and concludes that terms should be presented and made clear to the customers. To meet different needs from customers the board finds it important that banks supply adequate, easily accessible and parallel means of distributions. National comparisons of banking fees are requested by the board to ensure that customers can make rational decisions when selecting bank and type of service. International comparisons are also seen as a means to increase the competitiveness, which is believed to increase as a result of the European common market. Comparisons of this sort can also help to identify market disturbances, such as low level of competition. (Finansinspektionen, 1999)

7.3 Swedish Competition Authority\textsuperscript{25}

The SCA initiated their report after observing disturbances in the banking sector. In some service segments the competition is satisfactory as a result of new actors, technical development and new products which are supplied through new means. Within other, older type of services, the competition is unsatisfactory and the established banks have maintained their resistant market position. Poor level of competition is especially common in retail banking services. This is clear when studying the profitability in retail services, which accounts for 70 percent of total returns\textsuperscript{26}. When new niche banks have tried to establish themselves in this service segment the encounters with the older and larger banks have been unfavourable. The study does not focus on an application of competition law, instead it is based on economic theory and considerations.

Cooperation among banks can occur in two ways. \textit{Firstly}, they can cooperate in the execution of services and this is mainly done in processing and transferring information. This can result in efficiency and scale economies, which in its turn can give rise to lower production costs and prices. \textit{Secondly}, economies of scale can also be present in the consumption of bank services. Source of scale is then made possible through cooperation in compatibility between ATMs and accounts. According to the authority there is a possibility of negative effects from the cooperation. A cooperation in technical standards and/or services can inhibit competition in the banking sector. It is probable that poor levels of competition lead to high prices in spite

\textsuperscript{24}See SOU 1995:69, Betaltjänstutredningen, for further information.
\textsuperscript{25} This chapter is based on the Swedish Competition Authority’s report: \textit{Konkurrens på bankmarknaden-betalningförmedling och villkor för nya aktörer}, 1999.
\textsuperscript{26} See subheading 2.3 for further information about profitability.
of low production costs. To ensure competition the authority suggests that the cooperations shall be open for all actors on equal terms.

The SCA categorises the Swedish banking sector as an oligopolistic market. On the market there are four dominant banks of rather uniform size and power. This makes cooperation probable, with or without explicit agreements. These dominant banks can act in such manner that new actors are treated unfairly and thereby increase their returns further. Unfavourable conditions are discernible for smaller banks in the payment system, CEKAB and BGC, which are owned by the dominant banks.

To compete effectively in the banking sector banks need to supply three services. Necessary services are access to ATMs, bank/postal giro payments and cards. Without these three services the authority does not believe that banks can compete effectively on the market. Since the four dominant banks offer niche banks access to the payment system, ATMs, CEKAB and BGC on unfavourable grounds their competitiveness is somewhat reduced. Extensive connection charges and variable costs may cause small banks to remain outside these systems. Instead of joining all cooperations the banks might only join one or two of them. As a result competition from new banks is hindered. Technical development may also become hindered as a result of low levels of competition, which stems from the entry barriers that the high fees create. This will consequently lead to a poor development in an international perspective.

If goals are to be achieved, over a long time period, in scale economies, development and investment cooperation is probably needed. Competition can, according to the SCA, remain if suitable entrance demands to central systems are created. New actors can then enter the market on equal terms. Thus, limiting the cooperation in payment and other service systems is not an appropriate measure if entry barriers are depleted.

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27 It can be noted that 90 percent of all households pay their invoices by either bank or postal giro.
8 Analysis

This chapter will conclude our previous presented material. Herein we combine theory and empirical information from which we will base our analysis. The analysis will form the foundation of our conclusions.

8.1 Cooperative Pricing

Cooperative pricing can be an effective means to achieve high prices and high returns on an oligopolistic market. Through collusive behaviour firms can establish equilibrium on a level above marginal cost pricing. If firms succeed in maintaining cooperative pricing they can maximise their long run returns. Tacit collusion can be an effective means to attain high profits without breaking competition laws. Collusion is an autonomous recognition of mutual own interests that influence price-setting between competing firms. Since there are no explicit agreements when collusion is at hand the oligopolists often need structural conditions to support the cooperation. Without certain facilitating structural features cooperative pricing strategies will fail. Detection and retaliation of price-cutting must be possible. If this is not possible firms will cheat on the collusion in their pursuit to maximise profits. Self-interest will most often only be profitable in the short run. When firms pursue short term interests they jeopardise their long run profit since they risk punishment from other firms and price war. The choice of strategy depends on how open the relationship between different actors is. On some markets the relationship is rather public and the actors can cooperate openly. The Swedish banking market has several institutions through which the banks cooperate. This probably has an important facilitating influence on the price-setting, if the banks are colluding. Since the market is categorised as oligopolistic the banks could improve returns through tacit collusion.

When firms deliberate on colluding with competitors they need to reflect on several market features. Most of the features can be attributed to either information or how effective firms can retaliate, if at all. Game theoretic considerations can be of great help when strategies are to be chosen. A report from the EC emphasises that game theories can be used when studying cooperation on a market. In a cooperative game with infinite number of periods players might resort to collusion. Competition on the Swedish banking market can be viewed as an infinite game. Therefore, it is possible that cooperative pricing can arise. (EC, 1999) Below a suitable
decision scheme is presented. Depending on the firm’s analysis of the market it will decide on whether to price cooperatively or opportunistically.

**Figure 8.1 Decision Scheme on Cooperative or Opportunistic Pricing**

![Decision Scheme Diagram]


If the model is to be applied to the Swedish banking market, cooperative pricing appears to be the favourable strategy. Price cutting would probably not be profitable. The reason for poor effects of price-cutting is customers’ little interest in price. Other factors are more important to customers when deciding on choice of bank, according to studies presented earlier. Price is not an effective means to compete through in the banking sector. Customer mobility is low and connected with high transaction fees. Above this customers lack information concerning fees and their concern with prices are low.

**8.2 Structural Market Conditions**

Since banks supply services it is not possible to apply all structural conditions, presented earlier. Certain conditions are solely applicable on goods. The distinction stems from services’ special characteristics, for example the impossibility to store them. Only features
that can be utilised on services and consequently the banking sector will be discussed here\textsuperscript{28}. The importance of the various conditions differs. But they are all valid to incorporate to produce a full picture of the ability to create a collusion and its sustainability.

\textbf{8.2.1 Market Concentration}

A high market concentration facilitates cooperative pricing through several means. Forbes and Molyneux proved statistically that the traditional SCP-paradigm is valid on the European banking industry. They found that the degree of market concentration has a direct effect on the level of competition between European banks. Thus, when market concentration was high in the banking industries those banks earned higher profits through collusion than banks operating on less concentrated markets\textsuperscript{29}.

If there are many banks and low market concentration the probability of defectors increase. There are also more views on suitable price-levels when the number is expanded. On the Swedish banking market the concentration is high. As stated before, the four largest banks account for 90 percent of total turnover. Cooperative pricing is therefore possible from this viewpoint. Disagreement on price-setting appears to be low if retail banking fees are studied among the banks. There is a good correspondence between the banks’ fees. Retail banking fees is nowadays the most important source of income for Swedish banks.

The benefits for the Swedish banks from deviating from a prospective collusion are small. Reasons for this is that detection is easier when the number of banks is low. Monitoring competitors is also less costly when they are few. More obvious reasons for the poor profitability through cheating on the collusion are that price is not the primary means of competition. Other factors, such as service level, influence customer behaviour to a greater extent. Above this the benefit-cost ratio from cooperating increases as concentration is raised. Firms in the cooperation will capture a larger portion of total returns, as their market share is large. It appears as if Swedish banks have managed to establish a price level, which exceeds the marginal cost price. This argument can be supported by the SFSB. The board criticises the established banks’ price-setting on some services, which vastly exceeds the cost of the service. A high price level is also apparent in the EC report where Sweden is very expensive.

\textsuperscript{28} Secret price terms and Multimarket contact is not discussed since they cannot be applied on the banking sector.
in comparison with other EU countries. Another indication of cooperative price-setting on banking fees is that they account for 70 percent of total returns. To deviate from a prospective collusion would probably not be favourable for Swedish banks since their benefit-cost ratio is high.

A reason for the low rate of new entries on the banking market, in spite of very high returns, can be extensive entry costs. To avoid the high costs associated with establishing branch offices niche banks have found new practices for customer services. Entry has thereby been made possible at lower costs.

8.2.2 Asymmetries

If there are asymmetries among firms on a particular oligopoly market it is difficult to sustain cooperation. Asymmetries can arise in cost structures, capacities and quality\(^\text{30}\). Cost structures for the four large and dominant banks are probably similar for banking services. They cooperate on three fundamental service operations, namely ATM access, bank giro and card transactions. The dominant banks meet the same prices when using these joint-owned systems\(^\text{31}\). Thus, it appears to be fairly easy to agree on price level for banking fees that can be mutually feasible for the dominant banks. The SCA has criticised the four banks’ price-setting toward niche banks. According to the authority niche banks does not meet prices that are appropriate to their usage and size/market share. Cost pressures are likely to be different, not only as a result of system usage prices but also niche banks’ alternative operations. It is therefore unlikely that the dominant banks can collude tacitly with niche banks, at least to create a sustainable cooperation.

Since niche banks only captures a small market share they have little to gain from collusion. Dominant firms have poor incentives to punish fringe competitors such as niche banks. Punishment costs often exceed the lost share of customers, which the fringe firms capture through competitive behaviour. Small actors such as niche banks would only obtain a minimal part of benefits from cooperative pricing. They might be able to create higher returns through competition and increasing their market share. This can be one explanation to why niche

\(^{29}\) Forbes’ and Molyneux’s study included 18 European countries and data was pooled over four years (1986-89). The study rejected the efficiency theorem on the European banking market, the high prices and market concentration can therefore not be explained by the banks’ superiority in efficiency.

\(^{30}\) Quality aspects will be discussed under subheading 8.2.3, which deals with product homogeneity.

\(^{31}\) Other cost pressures such as personnel, marketing and administrative costs have not been presented and are therefore not dealt with.
banks offer retail services at lower costs than the established banks. The four large banks have an obvious interest in obstructing niche banks’ entry and expansion. To offer new competitors unfavourable conditions to the joint-owned systems is a cost effective means to do just that. Lowering prices and start a price war could be fatal for the banks since retail banking fees is their primary source of income. As been pointed out earlier, prices are also an inefficient way to compete for retail customers. This points out the inappropriateness of price reduction further. It is possible though that a price war could increase customer’s focus on prices and presumably have devastating effects on profitability on the banking market.

Firm asymmetries do not appear to impose hindrances to tacit collusion on the banking market. This is at least valid for the four dominant banks that control the principal share of the market.

8.2.3 Homogenous Products

When products are homogenous competition is carried out through price-setting. Within the Swedish banking sector the products are not completely homogenous. The offered products consist of the same core product but differ somewhat in the quality and delivery. In the report from the SFSB many customers believed that there is little difference in the banks’ product offering. Service quality is however conceived and may cause customers to change bank. Interfirm differences in quality are often not recognised by the customers. Even if they are recognised this does not pose a serious hindrance to collusion on pricing. The level of complexity of this heterogeneity is not high enough to overthrow cooperative pricing.

Product heterogeneity can also be a positive feature for the sustainability of tacit collusion. If sellers/banks can establish loyalty then heterogeneity can help facilitation of cooperation. Mobility of consumers is then decreased and this makes it difficult for new entrants to steal customers. Defecting from a collusion by the participating banks is less attractive since customers are unlikely to shift service supplier. In the Swedish banking sector there are signs of loyalty among customers. In the interviews 89 percent of the interviewed stated that they were very pleased with their respective bank’s services. There is also a form of forced customer loyalty on the market as a result of high transaction costs when shifting bank. The low mobility on the market is not only enforced by the fees but also by the float, which
confine the access to customers’ funds. As a consequence, cooperative pricing is facilitated further.

8.2.4 Volatility of Demand

Volatility of demand makes detection of deviators difficult. Shifts in demand can be effects from either actual changes in customer demand or price-cutting. On the Swedish banking market there are only small changes in demand. Volatility is probably not large enough to disturb a potential collusion. The four dominant banks have maintained their market share of circa 90 percent over a number of years, according to statistics from SBA. Niche banks’ activity on the market has probably not affected the demand for dominant banks’ services so that it can be classified as volatile. What diminishes a potential defector’s chances to increase its market share significantly is customers little interest in prices. Dominant banks can therefore overlook smaller changes in market share/demand.

Table 8.1 Dominant Banks’ Market Share of Lending 1995-98 in Percent

<table>
<thead>
<tr>
<th>Year</th>
<th>SHB</th>
<th>SEB</th>
<th>FSB</th>
<th>MNB</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>22</td>
<td>27</td>
<td>28</td>
<td>18</td>
<td>95</td>
</tr>
<tr>
<td>1996</td>
<td>23</td>
<td>23</td>
<td>26</td>
<td>18</td>
<td>90</td>
</tr>
<tr>
<td>1997</td>
<td>27</td>
<td>23</td>
<td>26</td>
<td>16</td>
<td>92</td>
</tr>
<tr>
<td>1998</td>
<td>28</td>
<td>23</td>
<td>24</td>
<td>16</td>
<td>91</td>
</tr>
</tbody>
</table>

Source: SBA 5 with own computations.

Table 8.1 shows that the dominant banks have maintained a fairly stable market share in lending. Volatility is low in spite of increased entries by niche banks and foreign branches.

8.2.5 Information and Trade Association

Distribution of information is important for cooperations. In a report from the EC it is established that information exchange is a central element when creating a successful cooperation. The EC stressed the fact that if information is exchanged between colluding firms the prospect for sustainability is raised. (EC, 1999) Trade associations have proved to be an excellent facilitating feature for cooperating firms. Fraas and Greer also proved this in their extensive study of USA’s markets. When a trade association is formed on an oligopolistic market information is easily available and it is possible for many competitors to collude.

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32 Float is the time it takes for a transaction to be carried out between two banks, payment of accounts etcetera. During the float banks exploit the accumulated interest over the transaction period. The float is not justifiable on
successfully. The number of actors in the Swedish banking sector ought not to pose a problem to a potential collusion.

The SBA probably has an important facilitating feature in the banking sector. In the presentation of its main functions it is clearly stated that the association shall inform its members about matters connected to their operations. Another function is to be an institution for cooperation in matters of mutual interest. A matter of common interest could be price-setting strategies. When studying the SBA it is obvious that it could be an excellent tool to enable a tacit collusion if its main functions are fulfilled. Above the association the dominant banks cooperate through their joint-owned transaction systems. This also increases the information exchange and reduces uncertainty concerning certain costs, transaction volumes and services. An important question is whether the association represents all banks on equal terms. There is a risk that niche banks' interests are somewhat overlooked in favour of dominant banks but it still ought to have a facilitating characteristic.

Social interactions among the banks should not be disregarded completely. Even if the actors are supposed to act professionally it is possible that interactions create social ties. There are many contact surfaces between the banks and these interactions can improve cooperative prospects further.

8.2.6 Other Structural Conditions

Buyer concentration is very low, if apparent at all, on the banking market. Low buyer concentration facilitates cooperative pricing since buyers have an incentive to reveal price terms. Through customers’ announcement of prices detection of cheating firms is fast and simple. Information on the banking market is available to all though it might be difficult to comprehend for individual customers.

Lumpiness of orders is probably not a common characteristic in the banking industry. It is improbable that this condition can be applied to banking services at all. Orders/demand of banking services from each customer are small, frequent and consistent and help to sustain cooperative pricing.
8.3 Firms’ Abilities

As mentioned earlier, there is a difference on the facilitating features depending on the firms supply goods or services. Obviously, the banks supply services. Therefore some theoretical conditions that have been presented are not applicable. Uniformed delivered pricing cannot be applied since services are consumed and produced at the same place and time. As a consequence of the simultaneous consumption and production the practise of inventories and order backlogs is not suitable either.

8.3.1 Price Leadership

There are three possible ways for firms to communicate when oligopoly is at hand, namely dominant firm, collusive and barometric behaviour. If the firms do not differ in efficiency and/or market share either one of them can take on the role as a dominant firm. In the Swedish banking sector it appears as if no particular bank has this opportunity. None of the four banks has materialised as dominant over the other. Consequently, it is unlikely that price leadership by dominant firm behaviour is present. Since the market is dominated by four banks of similar size barometric leadership could be at hand. Even if that condition is fulfilled the prices on the Swedish banking market are not adjusted with shifts in demand and supply by the oligopolists. Therefore it is improbable that barometric leadership has arisen.

Thus, out of the three possible types of price leadership collusive behaviour appears to be the most feasible. As the bank sector in Sweden is tightly oligopolistic and products are fairly homogeneous, collusive behaviour is an obvious choice. Further facts in favour of collusion are inelastic demand and entry barriers.

8.3.2 Advance Announcements

Through advance announcements of price changes firms can lower uncertainty. It also gives the firms which announces the change time to adjust its price offering if competitors does not follow suit. This strategy can be applied to both goods and service companies.

Advance announcements of price changes do not appear to be applicable to the Swedish banking sector. Prices are not the primary means of competition on the banking market. Customers’ interest of retail banking fees is low and information is sparse. The mobility of customers is also low as a consequence of transaction costs. It is possible though that advance
announcements could have a facilitating feature on other banking markets where prices affect respective demand to a greater extent.

8.3.3 Favoured Customers

The theory of most favoured customer clauses is difficult to utilise in the Swedish banking sector. As previously mentioned, price is not the primary determinant of demand in Sweden’s banking industry. For the clauses to have an effect on the sellers’ behaviour it must result in a significant cost to change the offering of products. If this is to be applied on banking services the clauses probably needs to incorporate more than one buyer of services. To compensate one single customer would probably not incur sizeable enough cost to diminish competitive behaviour from the seller. A possible effect of most favoured customer clauses could arise if the clause include a large number of buyers. This would be possible if an institution arranged a contract that included all employees. If the bank would offer other customers better services, prices and/or higher interest rates it would have to compensate all employees. The bank might be more restrictive in its competitive moves if clauses are used.

8.3.4 Debt Ratios

The financial structure of companies often has an impact on their behaviour. When financial leverage is increased equity holders induce pressure on the management to raise the holders’ returns. This may hamper the sustainability of collusive agreements since firms are likely to act opportunistically and thereby increase competition. Financial structures of banks may affect the potential of successful tacit collusions. What the level of leverage is in the Swedish banking sector is uncertain. As pointed out many times before in this thesis, prices are a secondary means of competition. This leads to that cheating on cooperative pricing strategy would be foolish. What further strengthens the inappropriateness of price-cutting is the low mobility of customers. Banks are for example more likely to compete through service quality than price. Price levels can consequently remain at potentially set cooperative prices and does not need to be lowered to hinder cheating on the prospective collusion. Financial leverage does not appear to affect prices-setting on a conceivable collusion in the Swedish banking sector. Banks on the Swedish market are more probable to compete through other means than price if equity holders demand higher returns.
8.4 Societal Consequences

There appears to be a high price level on retail banking services in Sweden. In comparison with all other EU members, Sweden projects itself as most expensive for all consumer types. The Swedish banking sector is oligopolistic and it is likely that prices are not set at marginal cost price. Thus, a welfare loss is probable. How large this welfare loss is depends on the size of price distortion, which is attributable to the pricing procedure. It is difficult to estimate the difference between marginal cost price and the actual price level. Since other countries’ fees generally are much lower and that Sweden’s technological level often is high it is probable that the difference is extensive. There are obvious sources of misallocation when banks use sizeable increases of certain fees to affect customer behaviour.

Welfare losses can be counteracted when oligopolists can experience economies of scale and scope. There are possible sources of welfare gains in the different transaction systems, which are joint-owned in the Swedish banking sector. Through this joint-ownership technical innovation can be refined. Strategic decisions concerning technology standards can be better substantiated and show a greater correspondence with customers expectations. Establishment of new technological standards can be simplified when many actors in the industry is incorporated in the cooperation. For scale economies to be realised it is important that common industry standards arise. If compatibility is not ensured scale economies will not appear, an example of this is the lack of compatibility for postal giro in Sweden. Aside from these positive effects from coordination on the market it is possible that it can have the reverse effect. A cooperation can result in delayed and poor technological development. When there are no alternatives to existing systems because all actors are incorporated in the cooperation the risk for neglect is high. The suppliers then have poor alternatives to invest in new and more effective systems.

It appears as if the Swedish banks do experience economies of scale through their joint-owned systems. The problem is that prices are the highest in EU. Reasons for the higher costs can be that Swedish banks cannot realise scale economies to the same extent as their European neighbours. Whether this is true or not is unsure. The SCA states that the compatibility is very important for an effective payment system and welfare for the society. They are however sceptical if the banks must cooperate on the technical development and performance. There is a risk that technical development is neglected in the cooperation between banks. An example
of the poor incentive to improve customers’ terms is the accessibility of their funds, which is hindered through the float.

As indicated above there are efficiency costs associated with oligopoly and market power. Management slack arises when successful collusions generate extensive returns. The large returns filter economic signals and create profit cushion for the management. Efficiency costs can be experienced in different aspects of the banks’ operations. In a study by Berger and Hannan the efficiency costs vastly exceeded welfare losses that appeared through collusion. In their study of the USA’s banking sector they found that additional operating costs, as a consequence of market concentration, was larger than the social costs of welfare losses. Their results are somewhat ambiguous but cooperative pricing in banking result in at least an efficiency cost of three times the societal welfare loss. One of their estimations attributes a cost of efficiency losses that is as much as 20 times the size of society costs. Efficiency costs must not be overlooked when studying effects from collusion. It is especially important when cooperative pricing is at hand in the banking market since it has a significant role in the economy as a whole.
9 CONCLUSIONS

Here we will present our conclusions and answer our purpose and questions set forth in the first chapter. The chapter is ended with concluding remarks regarding our findings.

9.1 What Elements Determine the Choice of Pricing Strategy?

On an oligopoly market firms can chose to cooperate on pricing. If they price cooperatively firms can create supranatural profits. Level of competition is then lowered and prices can be raised above marginal costs.

Choice of pricing strategy depends largely on the availability of information on the market. When evaluating whether to collude or not the firms make a rational decision based on economic returns from the respective alternative. It must be possible to monitor potential members of a collusion. The cost of monitoring must be kept at a reasonable level and certainly not exceed the gains from cooperating.

If a firm has the choice to enter a tacit collusion we believe that it must analyse the possibility of detect cheating. If cheating can be detected depends on the availability of information. To what extent information is accessible rely on structural conditions. Possibility to punish and react on cheaters anti-collusive behaviour is an important fact to consider too. Thus, detection and retaliation of cheating has a central role when deciding price strategy. If collusion is to be successful we are of the stance that both terms must be fulfilled. Otherwise, cheating will be profitable and the cooperation will fail.

On the Swedish banking market the choice of price strategy is fairly straightforward since price-cutting is not profitable. Prices are a poor means of competition since customers focus on service quality instead of price. Cooperative pricing could therefore be successful for banks.
9.2 What Structural Factors, on both the Market and within the Firms themselves, Influence the Durability of Tacit Collusion?

There are a number of structural factors that affect the sustainability of collusion. To create an adequate picture of the potential of cooperative pricing all conditions should be incorporated. Although, some conditions have a larger influence than others structural features. In some oligopolistic industries certain conditions are not applicable for different reasons. As an example there is a difference between goods and service productions.

We have divided the structural features, which influence the durability of collusions in two groups. The first group include market conditions whilst the second consists of facilitating features on firm level. In table 9.1 we present market conditions and whether they have a positive or negative effect on cooperative pricing.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Effect on cooperative pricing</th>
<th>The Swedish banking sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>High market concentration</td>
<td>Positive</td>
<td>Existing</td>
</tr>
<tr>
<td>Symmetric firms</td>
<td>Positive</td>
<td>Existing</td>
</tr>
<tr>
<td>Product homogeneity</td>
<td>Positive</td>
<td>Existing</td>
</tr>
<tr>
<td>Multimarket contact</td>
<td>Positive</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>Volatility of demand</td>
<td>Negative</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>High buyer concentration</td>
<td>Negative</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>Lumpiness of orders</td>
<td>Negative</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>Secret price terms</td>
<td>Negative</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>Information and trade associations</td>
<td>Positive</td>
<td>Existing</td>
</tr>
</tbody>
</table>

Source: Own construction.

Effect on collusion stems to a large part from if the conditions create uncertainty or not. The other important facts originate from their effect on the possibility to create focal points in price setting. If focal points cannot be produced equilibrium will be absent and the collusion is fragile. Even if some features may have a negative influence on cooperative potential a successful collusion is still possible. Positive factors can outweigh the negative and vice
versa. We believe that the most central conditions for a sustainable cooperation are *market concentration, homogenous products* and *symmetric firms*.

Firms can by their behaviour affect collusive potential through diminishing uncertainty. They can communicate by their behaviour and thereby increase information to its competitors. In table 9.2 we conclude how different conditions, created by the firms themselves, affect the sustainability of cooperative pricing. Most of the conditions cannot be applied in the banking sector. We are only sure of one feature, namely price leadership but two other characteristics are possible.

### Table 9.2 Features on Firm Level and Cooperative Pricing

<table>
<thead>
<tr>
<th>Condition</th>
<th>Effect on cooperative pricing</th>
<th>The Swedish banking sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance announces of price changes</td>
<td>Positive</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>Most favoured customer clauses</td>
<td>Positive</td>
<td>Existing?</td>
</tr>
<tr>
<td>Uniformed delivered pricing</td>
<td>Positive</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>Inventories and order backlogs</td>
<td>Positive</td>
<td>Non-Existing</td>
</tr>
<tr>
<td>Increased debt ratio</td>
<td>Negative</td>
<td>Existing?</td>
</tr>
</tbody>
</table>

Source: Own construction.

The firm induced conditions can improve the stability of collusions. Despite that most conditions have positive effects on coordination they are not crucial. Structural conditions on market level have a more important role but can be supported by firm behaviour.

### 9.3 Does the Analysis of the Swedish Banking Sector Indicate Cooperative Pricing?

We have found that a number of factors in the Swedish banking sector could sustain collusion. There are facilitating features on both market and firm level, as seen in table 9.1 and 9.2. Some destabilising features are not applicable on the banking market which increase the cooperative potential. The most important facilitating features, in our view, are applicable on the market.

Sweden’s banking sector is oligopolistic with only a few significant competitors. Market concentration is therefore high and the four largest banks dominate the industry. There is little asymmetry among the actors, at least the well-established banks. They cooperate through a
number of systems. Since they cooperate through these systems they experience similar cost pressures and information is available. The SBA plays an important role in the exchange of information. Trade associations have been proved to be a very important facilitator through their coordinating features when the number of firms increases. As a result, coordination can be facilitated even if new actors such as niche banks were to join a prospective collusion.

The products offered on the Swedish banking market are fairly homogenous. Products with only small differences do not pose a threat to successful collusions. The services differ somewhat in quality and delivery but this is heterogeneity of low complexity.

We believe that a cooperative pricing strategy is probable in Sweden. Our opinion is based on grounds presented above and the fact that fees of retail banking services in Sweden are the far most expensive in EU. Another important fact is that prices are a poor means of competition. Bank customers focus on other factors than price when deciding on supplier of services. Mobility of customers is also low and they are of the opinion that they lack information concerning prices. As a result, cheating on cooperative pricing in the banking industry would probably be meaningless and unprofitable. Thus, the facilitating features are strong and collusion can be profitable.

**9.4 What are the Welfare Consequences of Collusive Behaviour?**

We believe that the societal consequences of collusion in the Swedish banking sector are large. The prices and retail banking fees are the highest in EU. If the high prices arise from cooperative pricing authorities ought to view this as a serious problem. We believe, as stated above, that there is a risk that cooperative pricing is at hand in the banking sector. Prices are therefore not set at marginal cost. Since the price level is high in comparison with other EU countries the distortion of prices can be fairly large. As a result, the welfare loss can be considerable. Misallocation of resources can be counteracted if banks can realise scale economies through their cooperation.

The high fees could be a result of low competitive pressures or better quality in services in Sweden. Efficiency losses can be very large and exceed welfare losses. Since efficient banking is an important feature in the economy it is essential that it does not distort the workings in transactions. It is possible that extensive profits and low competitive levels can
result in poor technological innovation and low realisation of scale economies. We do not know whether this is the case on the Swedish banking market. Authorities should be aware of this and monitor the development of the payments system to assure an effective and secure system. To uphold a certain degree of efficiency the authorities might therefore need to change legislation and directives.

### 9.5 Concluding Remarks

We think that the Swedish banking market experience cooperative pricing. Therefore it can be necessary for authorities to intervene to ensure competition. There is a trade-off between possible scale economies from collusion and welfare/efficiency losses when deciding on response to collusions.

To increase competition on the market we have found a few suitable means. The market concentration needs to be analysed together with competition law. Competition authorities should also investigate the SBA’s role. We question if the role of the SBA is legal and rhymes well with a competitive environment. Authorities should also pressure the dominant banks so that new banks are offered access to the payment system on equal terms. All these actions could make entry on competitive terms simpler and enhance competition on the market as a whole.

To increase the competitive level further, customer information and mobility is important. We think that customers’ mobility is an important means to assure competition. Their mobility can be facilitated if the transaction costs are lowered. Information and price/service comparisons need to become more accessible to customers. The consumers’ banking bureau can have an important role in this distribution. Media can also be a good distributor of information and maybe the consumers’ banking bureau should become more mass medial.

In the future we think that competition law needs strengthening to counteract merger mania in the financial sector. Competition needs to be increased to maintain efficiency and welfare. Through new legislation it is possible to achieve this. Technological innovation and new means of communication is also enhancing the level of competition. Since customers can communicate through new channels barriers of entry can be lowered. For this to be possible

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33 Consumers’ banking bureau is called Konsumenternas bankbyrå in Sweden.
we think it is essential to act on the cooperation between banks. The cooperation needs not to be obliterated but it must be monitored to assure innovation and competition on equal terms.
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