Silos Economics

# The ‘profit margin’ defence in cartel damages cases

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## Introduction

In cartel damages cases, defendants sometimes rely on observed profit margins during the cartel to challenge claimants’ overcharge estimates. For instance, if profit margins were small or zero, defendants may argue that the overcharge must be small or zero. Anything higher is considered implausible. This line of reasoning assumes that overcharges are reflected in observed profitability. We have labelled this approach the ‘profit margin’ defence.

Some practitioners have recently proposed analytical frameworks to assess the plausibility of overcharge estimates that broadly embrace this defence and recommend using observed margins as an upper bound.

This article argues that a key concern with this approach is that in many circumstances observed margins may not reflect the overcharge, contrary to its core assumption.

First, when there is entry into the cartelised market and the cartel accommodates it, cartel profits can be eroded even when prices remain at the collusive level. Second, cartels may be formed to prevent prices from decreasing or collapsing and avoid losses. So-called ‘crisis cartels’ are one example. In such cases, the cartel just wants to ‘keep afloat’. Third, cartels suppress healthy rivalry, creating productive and dynamic inefficiencies and leading to higher costs. Higher costs from the cartel would tend to counterbalance the impact of the overcharge on profit margins. Fourth, cartel profits may be shared with workers with bargaining power, reducing margins. Fifth, shocks to supply and demand may also compress margins. In all these circumstances, observed profit margins could be low or zero even if the overcharge were high. As a result, profit margins would fail to capture the overcharge.

We conclude that observed profit margins provide limited guidance when assessing the plausibility of overcharge estimates. We recommend not relying on them as an upper bound when sense checking such estimates. Doing so would risk underestimating the magnitude of overcharges and denying proper compensation for cartel victims.

We stress that the assessment of whether an overcharge estimate is plausible should focus on critically evaluating the overall approach to quantification within the context of the case, rather than on simple metrics that carry a high risk of error.

The rest of the article is organised as follows. First, we provide a detailed account of the profit margin defence and discuss some recent proposals to use profit margins as an upper bound when assessing the validity of overcharge estimates. Second, we review the main reasons why profit margins may not reflect the overcharge. Third, we present our recommendations and conclude. We include references at the end.

## The 'profit margin' defence

A recent case before the Competition Appeal Tribunal (CAT) in the United Kingdom (UK) helps illustrate how the profit margin defence works. In *Royal Mail Group Limited v. DAF Trucks and Others [2023] CAT 6*, the CAT ruled on claims for damages brought by Royal Mail Group Limited and three BT Group companies against DAF Group companies. The action followed a 2016 European Commission (EC) decision (Case AT.39824) that fined five truck manufacturers for collusive arrangements on pricing and gross price increases for medium and heavy trucks, as well as for coordination in relation to emission technologies. During the cartel period, the claimants purchased or leased large volumes of trucks from DAF.

The claimants submitted overcharge estimates in the range of 6.7%-14.7% (para 480). The defendants challenged these estimates on several grounds. One relied on the profit margin defence. They argued that *"it was implausible to suggest that the prices paid by the Claimants in the counterfactual would have been lower than the actual prices paid because of the extremely low, and sometimes negative, margins that DAF was making on the trucks sold to the Claimants"* (para 89). They considered that *"this both supported DAF's expert's conclusion that there was no Overcharge but also provides a sense-check on the Claimants' expert whose conclusion was that there was an average market-wide Overcharge applicable to the Claimants"* (para 89). In other words, according to the defendants, low or negative margins made it implausible that there had been an overcharge in this case.

Some practitioners have recently proposed analytical frameworks to assess the plausibility of overcharge estimates that broadly embrace the profit margin defence. For instance, Padilla, Dubowitz and Venturini (2025) recommend using margins as a practical upper bound to test the plausibility of an overcharge. They note that *"margins are not necessarily a hard constraint. It is possible that the costs, not just prices, would be lower*

*absent a cartel – particularly one with a long life. However, they do stress test the plausibility of an estimate"* (p. 4).

Padilla *et al.* (2025) illustrate their approach using the claimants' overcharge estimates in the trucks cartel damages case cited above. Using observed profit margins as a 'plausibility ceiling', they claim that claimants' estimates were implausible. They argue that extrapolated across all producers and markets, the overcharges implied *"aggregate damages of nearly €100 billion, significantly greater than the total operating profits for the truck manufacturers during this period. The estimated overcharge therefore implied that, absent the cartel, the industry would have suffered losses greater than the profits it actually earned or that counterfactual costs would have been very substantially lower than they were – a result that strains plausibility"* (p. 3).

## Why profit margins may not reflect the overcharge

The profit margin defence assumes that cartel overcharges are reflected in profitability. However, there are many circumstances where this assumption may not hold. We discuss these circumstances in detail below.

### *Entry can erode cartel profits even when collusion is effective*

When there is entry into a cartelised market, and the cartel accommodates it (e.g. the entrant is invited to join the cartel without disruption to cooperative pricing), firms can still set prices that are substantially higher than in the counterfactual, but profits can be almost zero and fail to reflect the overcharge. This occurs because entry erodes profits in the long run, even when prices remain at the collusive level.

Symeonidis (2024) provides a theoretical account of this mechanism, relying on seminal work done by Reinhard Selten and John Sutton. Consider an industry with free entry. Under free entry, net profits are driven to almost zero (zero, in what follows) regardless of firm conduct. If the industry is cartelised and the cartel accommodates entry, the cartel can still set prices higher than absent the cartel, but cartel participants are unable to make excessive profits. Assume the cartel is broken due to competition enforcement intervention, and price competition increases. In the short run, prices and gross profits decrease given the initial number of firms. However, since some or all firms will be making a loss, mergers and exit will occur, leading to an increase in gross profits until firms can cover fixed costs, which have not changed. In the long run, prices and the number of firms are lower, but net profits remain unchanged. This result would not hold if cartels were effective in deterring entry.

Firms may rationally form a cartel despite a high likelihood of zero profits in the long run. This is because there are short run gains from colluding, as

entry takes time. Further, once the cartel has been established, cartel participants may find it optimal to stay at zero profit, rather than face short-run losses and potential exit.

A key condition for the above mechanism to work is that cartels accommodate entry. The empirical literature suggests that this is not uncommon. Levenstein and Suslow (2006) examine case study evidence from 19 cartels from the United States and Europe and find that entry was accommodated in 10 out of 12 cases for which they had information. Symeonidis (2024) studies cartels in the UK manufacturing sector in the mid-1950s and observes that most of them did not restrict entry.

The empirical evidence supports the theoretical mechanism described above. Symeonidis (2024) assesses the effect of collusion on profitability using evidence from a natural experiment of policy change: the introduction of anti-cartel legislation in the UK in the late 1950s. As a result of the 1956 Restrictive Trade Practices Act, collusive agreements among firms were cancelled (cartels were 'legal' before this reform). This intensified price competition during the 1960s in previously collusive industries but did not affect non-collusive ones. The article uses a difference-in-differences approach to assess the impact of collusion on profitability, using non-collusive industries as a control. The evidence suggests that the breakdown of collusion had no significant overall effect on profitability in the long run, although it had a strong negative effect on firm numbers (on average, these decreased by 15%-20%), due to exit and mergers. The article also finds that the larger was the decrease in firm numbers, the smaller was the decline of profitability in previously collusive industries. Finally, it concludes that while most cartels did not restrict entry, in industries where entry had been restricted, profitability, rather than firm numbers, decreased after the cartel broke down. Overall, this research indicates that entry can erode cartel profits even when collusion is effective.

In sum, overcharges may not be reflected in profit margins when cartels accommodate entry.

### *Cartels may be formed to address falling prices or avoid losses*

Cartels may develop to arrest the decline of prices due to factors such as excess capacity, falling demand in an economic downturn or a decrease in unit costs driven by innovation. For instance, a cartel may agree to maintain prices instead of raising them, or it may agree to allow prices to decline, although at a slower rate than absent the cartel. For example, the cartel may prevent prices from decreasing 15% just to protect a bare positive margin. As a result, even high overcharges may not be reflected in profitability.

This type of cartel is not uncommon. Many cartels have been formed during a period of falling prices. Levenstein and Suslow (2006) report that 6 out of 16 cartels for which they have information were created during an economic downturn.

OECD (2011) reviews a range of case studies on so-called 'crisis cartels', which develop to absorb a negative economic shock to an industry and 'keep afloat'. A classic example are the cartels that developed in the United States (US) during the Great Depression through the National Industry Recovery Act (NIRA) of 1933. In essence, the NIRA aimed to encourage economic recovery through cartelisation. Antitrust laws were suspended, and companies were required to write industry-wide 'codes of fair competition' that effectively fixed prices and wages, established production quotas, and imposed restrictions on entry of other companies into the alliances. NIRA led to the widespread cartelization of US manufacturing between 1933 and 1935 – when the US Supreme Court declared NIRA unconstitutional. Overall, NIRA cartels did nothing to help recovery and were counterproductive. They reduced output compared to the counterfactual – Taylor (2002) estimates a 10% drop in manufacturing output – and aggravated the Great Depression (Cole and Ohanian, 2004). Weinstein (1980) - as cited in Taylor (1999) - estimates an overcharge of 14% arising from these cartels. According to the NBER Macrohistory Database, profit margins in US manufacturing were negative or low during 1933-1935.

Recent case law provides examples of cartels that have been formed to restrain the decline in prices, correct excess supply, and avoid losses. An interesting case is the TV and computer monitor tubes cartels, fined by the European Commission (EC) in 2012 (Case AT.39437). Seven international groups of companies participated in either one or both of two distinct cartels in the sector of cathode ray tubes that operated worldwide. For almost ten years, between 1996 and 2006, cartelists fixed prices, shared markets, allocated customers between themselves and restricted their output. The sector was in decline and during the infringement period prices actually declined. Internal documents assessed by the EC show that cartel participants aimed to *"hold market prices and ensure profits"* (Case AT.39437, para 218). Oversupply and falling prices were a key concern for this cartel. The cartel considered it necessary to coordinate to *"avoid operating at a loss"* (para 258). The counterfactual situation absent the cartel was loss-making, as cartelists acknowledged themselves. To prevent this situation, they agreed on bottom prices to stop declining prices and also on output restrictions (para 258-259).

In sum, collusive prices may not show up in profit margins when cartels are formed to prevent the decline or a collapse in prices.

### *Cartels suppress rivalry and increase costs, reducing profit margins*

Cartels dampen competition and reduce productive and dynamic efficiency. This leads to higher costs than absent the cartel. Higher costs from the cartel would tend to counterbalance the impact of the overcharge on profit margins. Consequently, profit margins may fail to capture the overcharge.

Cartels reduce productive efficiency (e.g. they operate at higher costs than absent the cartel) for various reasons. First, cartels disrupt the 'Darwinian' selection mechanism whereby more efficient firms force less efficient firms to exit. This mechanism is one of the virtues of competitive markets and a key driver of increases in productivity. However, cartels dampen rivalry and 'business stealing', shielding less efficient firms from exiting the market and protecting their market share. This lessens productivity.

Second, if cartels cannot restrict entry, artificially high prices produced by the cartel will incentivise entry by less efficient firms, who would not have entered absent the cartel.

Third, cartels reduce incumbents' incentives to minimize costs by moving closer to the technological frontier. They enjoy a 'quiet life', one of the best monopoly profits (Hicks, 1935).

Fourth, cartels can further lessen productive efficiency because they incur costs that are wasteful from a welfare perspective, such as costs linked to setting up the cartel and enforcing it, or costs arising from investing in excess capacity to make their threats to act competitively more damaging and hence obtain a more favourable agreement (Osborne and Pitchik, 1987).

Cartels also increase costs because they reduce dynamic efficiency by hindering the development of cost-reducing innovations and slowing technological progress. One reason is that the incremental profits from innovating are higher under competition than under monopoly (Arrow, 1962). Another reason is that the opportunity cost from innovating is higher under monopoly than under competition. This occurs because innovating disrupts production temporarily and the 'disruption cost' in terms of lost sales revenue is higher for the monopoly as it charges a higher price (Holmes, Levine and Schmitz, 2012).

There is ample evidence showing how cartels reduce productivity and increase costs. Symeonidis (2008) finds that widespread cartelisation in UK manufacturing sectors until the 1960s substantially reduced labour productivity growth. During 1954-1963, after controlling for many relevant factors, average labour productivity growth in non-collusive industries was 11%-16%, compared with only 2%-3% in collusive ones. One key reason was that collusive agreements allowed less efficient firms to survive or

maintain significant market shares. Bridgman, Qi and Schmitz (2015) examine the US sugar cartel created during the Great Depression and in operation between 1934 and 1974. They find that the cartel led to a significant misallocation of production from high productivity to low productivity producers. They estimate a lower bound for the losses (relative to value added) of 25% and 42% in the beet and cane industries. Ng and Seabright (2001) find that at the start of the 1990s, restrictive regulation in European airline markets – still operating as a set of legal duopolistic cartels in many city-pair routes - resulted in their costs being up to 35% higher compared to a by then fully liberalised US airline industry. CMA (2015) and Holmes and Schmitz (2010) review the empirical literature showing how competition fosters productivity - and hence cartels dampen it - and provide additional evidence.

In sum, cartels reduce productivity and increase costs, eroding profit margins. This is a concern for the profit margin defence because in such a context the overcharge would not be reflected in profitability. Padilla *et al*. (2025), cited above, broadly embrace the profit margin defence though acknowledge that increased costs from collusion can affect profit margins. However, it is unclear from their proposal how this cost inefficiency would be considered when stress testing the plausibility of an overcharge estimate.

### *Cartel profits may be shared with workers with bargaining power*

When workers have bargaining power (for instance, if there is a union), they may be able to capture a portion of a cartel's profit through higher wages or other benefits. This profit redistribution would reduce observed cartel profits. As a result, profit margins may not reflect the overcharge, which has effectively been shared between shareholders and workers.

The empirical literature supports the above mechanism. Rose (1987) uses the pro-competitive deregulation of the US trucking industry as a natural experiment to test the 'rent sharing' hypothesis. She finds a substantial decline in union wages after the reduction in regulatory rents. She concludes that union workers captured more than 66% of monopoly profits created by regulation. Salinger (1984) examines the effect of unions on US firms' profits during the 1980s and finds that workers captured a sizeable portion of monopoly profits. Machin (1991) looks at a sample of large British firms in the 1980s. He finds that unionised firms have significantly lower profit margins than comparable non-union firms. He also finds that unions' ability to capture economic rents is significantly greater in firms with a high market share or operating in highly unionised industries.

### *Shocks to supply and demand may reduce margins*

Shocks to supply and demand unrelated to collusive conduct may influence margins over time. For instance, a reduction in demand may decrease revenues and compress profit margins, while an increase in input costs, such as energy costs, may have the same effect. These shocks tend to depress margins and may fully or partially compensate any impact of the overcharge on margins. As a result, profit margins may not capture the overcharge.

The empirical literature confirms that various types of shocks influence margins over time. Machin and Van Reenen (1993) use a panel of more than 700 UK manufacturing firms over the 1970s and 1980s to explore the role of demand shocks in shaping firm-level profitability. They find that profit margins are procyclical (e.g. they rise when demand expands and decline when demand declines). Manuel, Piton and Yotzov (2024) examine how increases in energy costs impact firms' margins. Using data for UK firms over the last four decades they conclude that profit margins decline in response to different waves of energy price increases.

### Recommendation

The key conclusion from the preceding section is that in many circumstances observed profit margins may fail to reflect the overcharge and therefore provide limited guidance when assessing the plausibility of overcharge estimates.

We therefore recommend not relying on them as an upper bound when sense checking such estimates. Doing so would risk underestimating the magnitude of overcharges and denying proper compensation for cartel victims.

We stress that the assessment of whether an overcharge estimate is credible should focus on critically evaluating the overall approach to quantification within the context of the case, including the data used, the quantification method, and the robustness checks (including falsification tests), rather than on simple metrics that entail a high risk of error.

### Conclusions

In cartel damages cases, defendants sometimes rely on observed profit margins during the cartel to challenge claimants' overcharge estimates. For instance, if profit margins were small or zero, defendants may argue that the overcharge must be small or zero. Anything higher is considered implausible. This line of reasoning assumes that overcharges are reflected in observed profitability. We have labelled this approach the 'profit margin' defence.

A key concern with this approach is that in many circumstances observed profit margins may not reflect the overcharge. Several mechanisms may decouple profit margins from overcharges: entry may erode cartel profits even when collusion is effective; cartels may be formed to prevent falling prices and avoid losses; cartels suppress rivalry and increase costs; cartel profits may be shared with workers with bargaining power; and shocks to supply and demand may reduce margins. In all these circumstances, observed profit margins could be low or zero even if the overcharge were high. As a result, profit margins would fail to capture the overcharge.

We believe that observed profit margins provide limited guidance when assessing the plausibility of overcharge estimates and recommend not relying on them as an upper bound when sense checking such estimates.

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