

Competition in the road fuel sector
– a report commissioned by the
Ministry of Climate and Enterprise

Konkurrensverket, December 2024

Authors: Karl Lundvall (project manager) and Fabian Lindborg Lewis

Photo: Scandinav

# Content

1	Intr	oduction	4	
	1.1	Competition in the retail fuel markets	5	
	1.2	Assessment of remedies	6	
	1.3	How the study was conducted	7	
	1.4	How potential remedies were assessed	8	
2	The enforcement investigation by the Authority			
	2.1	Parties and the conduct	9	
	2.2	Legal assessment	10	
	2.3	Voluntary commitments	11	
3	Wh	ch remedies can strengthen competition?	13	
4	Res	earch on competition and price transparency	15	
5	Exp	eriences with price comparison tools	18	
	5.1	United Kingdom – the Fuel Finder Scheme	18	
	5.2	Germany – Markttransparenzstelle für Kraftstoffe (MTS-K)	19	
	5.3	Austria – Spritpreisrechner	20	
	5.4	Italy – Osservapezzi Carburanti	21	
	5.5	Portugal – Preço dos Combustíveis	21	
	5.6	Fuel price comparison tools: what lessons can we draw?	22	
	5.7	Price comparison tools in other industries in Sweden	23	
6	Limit on the number of price increases per day			
	6.1	Number of price changes at stations per day in Sweden	27	
7	Sho	ould remedies be imposed?	30	
Re	efere	nces	32	
Αŗ	pen	dix 1 List of items in the market study	36	
Ar	pen	dix 2 Hearing on 12 November 2024	37	

#### 1 Introduction

In its appropriation direction<sup>1</sup> for 2023, the government commissioned the Swedish Competition Authority to conduct a market study in the fuel market, with a particular focus on price formation at the consumer level. The assignment also included providing proposals for remedies in case the analysis identified distortions or limitations of competition.

This report, including appendices, constitute the final delivery of the market study. All items of the delivery are listed in Appendix 1.

On October 7, 2024, we published an interim report as part of the government assignment. In this report, we presented, among other things, a description of the value chain and an analysis of competition in the different fuel markets.<sup>2</sup> We concluded that a distinctive feature of the market is that the leading companies closely follow each other's pricing. Better consumer information about prices and measures to make it harder for companies to copy each other's pricing could strengthen competition.

The government assignment enabled the Swedish Competition Authority to prioritize further analyses of a complex market with potential competition issues. The results have contributed to increased knowledge and a better understanding of the fuel markets. This has also enriched and strengthened competition enforcement, which has been evident in the competition law investigation, initiated and conducted in parallel to the government assignment.

That investigation concerned a suspicion that the largest companies in the market acted in ways that could potentially violate the Competition Act by continuously publishing recommended prices for gasoline and diesel on their websites, effectively enabling price coordination. Three of the fuel companies submitted voluntary commitments, which the Swedish Competition Authority assessed as remedies to the competition issues identified during the investigation. Once these commitments are implemented, no later than February 2, 2025, the companies will need to make pricing decisions without immediate information about each other's changes to the recommended price. This is expected to create better conditions for an efficient price formation in the market.

The legal investigation was recently concluded (case number 382/2023). The commitments made by the companies will remain in effect for three years, after which the Swedish Competition Authority may consider reopening the investigation if circumstances warrant it. The outcome of the investigation has

<sup>&</sup>lt;sup>1</sup> The Swedish Competition Authority's appropriation directions for 2023, N2022/02410, and Amendment to appropriation directions for the budget year 2023, KN2023/03500.

<sup>&</sup>lt;sup>2</sup> Konkurrensverket (2024c).

influenced the Authority's assessment of the need for other measures to improve competition in the fuel market at this time.

The Swedish Competition Authority has previously examined the fuel market, including an analysis of competition in the fuel market published in January 2023 as part of a series of publications on the theme of competition in times of crisis.<sup>3</sup>

#### 1.1 Competition in the retail fuel markets

The fuel market is currently undergoing significant changes, largely driven by shifting demand patterns as an increasing share of passenger vehicles are powered by electricity rather than liquid fuels. However, the transition is progressing more slowly for commercial vehicles, particularly heavy transport. The number of fuel stations has decreased slightly over the past decade, a trend expected to accelerate in the coming years. This development could impact the conditions for effective competition.

The Swedish fuel market is dominated by four companies, which account for approximately three-quarters of the volume sales of both gasoline and diesel. Their relative market shares have remained stable over time, and there has been no significant market entry that could alter the competitive landscape. A defining characteristic of the market is that the leading companies closely follow each other's pricing.

Pricing in the fuel market is marked by price leadership and the public disclosure of recommended prices. Price signaling by companies can be problematic from a competition perspective. This signaling and the manner in which companies make relevant pricing information publicly available have been the focus of the competition law investigation conducted by the Swedish Competition Authority in parallel with the government assignment.

In the interim report, we concluded that there is relatively limited price competition among market players, particularly on a national level and especially for individual consumers. The Swedish Competition Authority assesses that this is partly due to the pricing strategies of the companies, which involve closely following each other's prices, a practice facilitated by the open publication of recommended prices. Stronger competition could help drive prices down.

Studies of competition issues and legal precedents in fuel markets in other countries indicate that pricing practices, particularly consumer access to accurate and up-to-date price information, have been a central theme in proposals aimed at promoting competition.

-

<sup>&</sup>lt;sup>3</sup> Konkurrensverket (2023).

#### 1.2 Assessment of remedies

The Swedish Competition Authority's assessment, based on its analyses and investigations, research findings, and international comparisons, is that the most relevant competition-enhancing remedies for the Swedish market could be:

- 1. A digital price comparison tool displaying current station prices
- 2. Price regulation: allowing only one price increase per day

However, the Authority's overall assessment is that a digital price comparison tool, potentially combined with price regulation limiting the number of daily price increases, should not be implemented in Sweden at this time.

The reasons are as follows: the experiences with such price comparison tools in countries where they have existed for a longer time are mixed. There is no clear empirical evidence that overall prices decrease. A notable effect in Germany is that the number of price changes has increased significantly, from 1–2 changes daily when the tool was introduced to up to about 20 changes per day currently. Furthermore, economic research provides no definitive support for price reductions as a result of such remedies. The primary reason is that increased price transparency regarding current station prices at the consumer level enables market actors to quickly adapt their pricing to competitors, which may reduce their incentives to initiate price cuts. This risk could be amplified if companies increasingly adopt pricing based on AI technology.

At the same time, increased transparency at the consumer level would provide individuals with greater opportunities to exploit local price differences, potentially stimulating competition. The price comparison tools currently available in Germany, Austria, Italy, and Portugal, which the Swedish Competition Authority has studied in some detail, are continually evolving and are considered by the competition authorities in these countries to make a positive contribution to market competition.

Thus, there are factors both for and against the introduction of a digital price comparison tool. Another factor to consider is the commitments recently made by three of the largest companies as part of the legal investigation. These commitments involve the largest fuel companies ceasing the public publication of recommended prices for private customer fuels. Additionally, the companies have agreed to delay the publication of changes in list prices for business customers in light traffic until later in the day.

These changes are expected to impact price dynamics in the market. For example, it is possible that the currently limited local price variation will increase.

Taking all these factors into account, the Swedish Competition Authority concludes that no remedies, beyond accepting the commitments made in the enforcement case, should be implemented in Sweden at this time.

The Authority recommends that the situation be assessed again within the next 2–3 years. Depending on the situation then, it may be warranted to reconsider whether the introduction of a price comparison tool and price regulation could be justified.

Regarding the design of such measures, the Austrian model—where only the lowest station prices are visible for consumers, combined with a rule allowing only one price increase per day—appears to be the most appropriate.

## 1.3 How the study was conducted

The first half of 2023 was devoted to literature reviews and preparations for data collection. Professor Richard Friberg, holding the chair of the Jacob Wallenberg Professor of Economics at the Stockholm School of Economics, was associated with the project.

During the summer of 2023, a series of meetings were held with the leading companies in the fuel market to define and specify requirements for the provision of detailed data. The data collection process took place during the autumn of 2023, supported by the Act (2010:1350) on Mandatory Reporting of Market and Competition Conditions. The collected data primarily included daily prices for gasoline and diesel across nearly the entire network of stations, as well as costs, margins, discounts, and volumes.

Notably, the requirement to provide historical station-level pricing data was particularly burdensome for the companies, due to the large volume of observations. In total, the dataset encompassed over 9 million data points for gasoline and diesel.

The companies' knowledge of consumer behavior and business strategies was also studied, along with the value chain from refineries through wholesalers to retailers. In addition to a series of data submission requirements under the aforementioned provisions, several interviews were held with representatives from market players.

The analysis of the extensive dataset primarily took place during the spring of 2024, with a particular focus on national and local price formation. Several hypotheses were tested, many of which were evaluated using econometric models. The results formed the basis for a comprehensive assessment of the competitive situation in the market and were included in the interim report published on October 7, 2024.

Stakeholders, including market actors, were subsequently invited to provide feedback on the interim report and to participate in a hearing held on November 12 in Stockholm. The purpose was to understand and discuss the market's perspective

on the introduction of competition-enhancing remedies. Participants were asked for their views on two proposed ones —a digital price comparison tool and price regulation—in terms of their potential effects on competition and implications for their own operations.

#### 1.4 How potential remedies were assessed

The basis for this assessment is derived partly from the competition analysis in the interim report and partly from supplementary information obtained through meetings with competition authorities or other relevant agencies in the United Kingdom, Germany, Austria, Italy, and Portugal. These countries, with the exception of the UK, have extensive experience with digital price comparison tools for the most common liquid fuels.

Current research in economics, as well as feedback from companies and other stakeholders, was also considered. Additionally, a meeting was held with Informed Sources (International) Pty Ltd, an Australia-based company that offers technical solutions for businesses and authorities to collect and analyze price data in fuel markets. Insights from the supervisory investigation conducted in parallel with this assignment have also been included in the assessment.

The Swedish Competition Authority's evaluation of the need for competitionenhancing remedies is divided into two steps:

#### 1. Identification of Remedies – a Shortlist

In the first step, remedies are identified (shortlisted) that address areas where competition is assessed as having potential for improvement and are feasible to implement in Sweden

#### 2. Detailed Assessment of Shortlisted Remedies

In the second step, these shortlisted remedies are evaluated more closely, based on experiences from other countries and industries, as well as findings from research in economics

This two-step approach ensures that the proposed remedies are both relevant to the Swedish context and grounded in robust evidence from comparable situations.

# 2 The enforcement investigation by the Authority

In addition to the government assignment on competition in the fuel market, the Swedish Competition Authority has conducted a parallel enforcement investigation<sup>4</sup> involving the four largest fuel companies in the Swedish market. The case was initiated by the Authority on its own initiative on May 31, 2023, and concerned the public dissemination of price information in the form of recommended prices for private customers and list prices for businesses. On December 2, 2024, the Swedish Competition Authority decided to accept commitments from three of the companies and to close the case without further action against the fourth company.

Given that price formation and transparency regarding the various companies' pricing are of central importance to the functioning of the market, it is essential that the evaluation of remedies in the current study also consider the potential effects of the decision in the enforcement investigation. A summary of the case is provided below.

#### 2.1 Parties and the conduct

The parties involved are the four largest fuel companies in Sweden: Circle K Sverige AB (Circle K), OK-Q8 AB (OKQ8), Preem AB (Preem), and St1 Sverige AB (St1). The investigation was initiated in the summer of 2023 based on a pricing pattern identified in a study<sup>5</sup> on fuel pricing conducted by the Swedish Competition Authority during 2022 and 2023.

The investigated practice concerns the continuous publication of current fuel prices<sup>6</sup> on the websites of Circle K, OKQ8, Preem, and St1. The information includes recommended prices for private customers and list prices for business customers, with the latter only applying to fuel prices for "fleet" vehicles (less than 3.5 tons).

The recommended price for private customers is intended as guiding information about pricing at stations. Consequently, the recommended price does not always match the final price consumers encounter at the station. In contrast, the list price for business customers is typically the price paid at the station, regardless of the pump price, with deductions for individually negotiated discounts.

The published price information is publicly accessible and varies slightly in format between the companies. Historic prices are also made available, although to varying extents. The publication follows a recurring pattern with a significant degree of price-following behavior. Circle K acts as the price leader, and other actors adjust their prices based on Circle K's changes. Preem and OKQ8 usually adjust their

<sup>5</sup> Ref.no. 579/2022.

<sup>4</sup> Ref.no. 382/2023.

<sup>&</sup>lt;sup>6</sup> Fuel refers to gasoline and diesel, including HVO100, as well as ethanol E85.

recommended prices within an hour of Circle K's price change, while St1 publishes only list prices for business customers at 12:01 a.m. the day after Circle K implements a price change.

There is also a clear connection between the list price for business customers and the recommended price for private customers.

The relationship between published recommended prices and station-level pump prices has been analyzed in depth, as in the interim report<sup>7</sup>. The observed pattern is that station prices, on average, adjust to recommended prices when they change, and then gradually decrease at different rates across local markets. This results in increased price variation between stations. With the next adjustment of recommended prices, station prices realign, and the pattern repeats.

The Swedish Competition Authority's analysis within the framework of the supervisory investigation aligns with the analysis conducted in the interim report of the government assignment.

In summary, the Swedish Competition Authority concludes that the price information continuously published on the companies' websites has a strong influence on local station pump prices.

## 2.2 Legal assessment

The investigation examined whether the practice could violate the prohibition on anticompetitive agreements under Chapter 2, Section 1 of the Swedish Competition Act and Article 101 of the Treaty on the Functioning of the European Union (TFEU). The public disclosure of information signaling future intentions regarding market behavior, such as future prices, may fall under these prohibitions.<sup>8</sup> The concern is that such publicly disclosed prices could serve as a focal point for competitors to align their pricing, resulting in prices being higher than they would have been in the absence of such price signaling. This is because strategic uncertainty regarding competitors' market behavior and pricing decisions risks being reduced or eliminated.<sup>9</sup>

While price publication can benefit customers and consumers by lowering their search costs and increasing choice, potentially offsetting any anticompetitive effects, the investigation revealed that consumers have limited awareness of the published

<sup>8</sup> See, for example, the European Commission's Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to horizontal cooperation agreements, 2023/C 259/01 (Horizontal Guidelines), points 374–375 with references.

<sup>&</sup>lt;sup>7</sup> Konkurrensverket (2024c).

<sup>&</sup>lt;sup>9</sup> See also the Horizontal Guidelines, point 385 with references, as well as points 390, 398, and 416; Case C-298/22, Banco BPN/BIC Português, EU:C:2024:638, point 54; Case C-74/14, Eturas and Others, ECLI:EU:C:2016:42, point 27; Case C-238/05, Asnef-Equifax, ECLI:EU:C:2006:734, point 51; and Case C-7/95 P, John Deere Ltd, ECLI:EU:C:1998:256, point 91.

price information, use it very infrequently, and derive little benefit from the public disclosure. However, regarding the list price for business customers, the investigation demonstrated a clearer utility for customers.

The Swedish Competition Authority's investigation therefore identified a potential risk that the public disclosure of recommended prices by Circle K, OKQ8, and Preem could facilitate coordination among competitors, while it is not evident that the consumer benefits of this disclosure outweigh this risk. The concentration of the market and the barriers to entry further exacerbate the risk of weakened competition.

Since St1 does not publish recommended prices for consumers but only list prices for business customers, and these are published only at midnight after the price leader's changes, the Swedish Competition Authority assessed that there is no similar risk associated with this company's actions.

## 2.3 Voluntary commitments

A company under investigation by the Swedish Competition Authority may propose voluntary commitments to address the concerns covered by the investigation. Based on such commitments, the Authority can decide to close an enforcement investigation without making a final determination as to whether the conduct constitutes a violation of competition rules.

The first proposals for commitments were submitted by OKQ8 and Preem in April 2024, followed by Circle K in June 2024. These proposals were revised during the summer and fall, with final versions submitted by the companies in September 2024. Market participants potentially affected by the commitments were invited to provide opinions on the commitments during October 2024. No opinions were received that altered the Authority's assessment of the conduct or the suitability of the commitments.

The voluntary commitments submitted by Circle K<sup>10</sup>, OKQ8, and Preem primarily entail ceasing the publication of recommended prices for fuel<sup>11</sup> aimed at private customers and delaying the publication of applicable list prices for fuel targeted at business customers with light vehicles to 1:00 p.m.

The commitments are designed to ensure that the companies cannot access each other's strategies regarding current or future changes to recommended prices, except through natural competition by observing and adapting to the visible pump prices at stations. According to the Authority's assessment, this strengthens the

11 In the commitments, fuel is defined as gasoline and diesel, including HVO100, as well as ethanol E85.

 $<sup>^{\</sup>rm 10}$  Circle K's commitment applies to both the Circle K and Ingo brands.

conditions for the parties to independently determine their economic behavior, thereby promoting competition in the fuel markets.

The commitments will remain in effect for three years from the Authority's decision, and the three companies have two months from the decision date to comply with their obligations under the commitments. Once the commitment period has ended, the Authority may consider reopening the investigation if new circumstances arise.

The Swedish Competition Authority decided to accept the voluntary commitments submitted by Circle K, OKQ8, and Preem and to close the enforcement investigation concerning these companies on December 2, 2024. At the same time, the investigation regarding St1 was also concluded without further action.

According to the Authority's assessment, the commitments strengthen the conditions for fuel companies to independently determine their economic behavior, altering price dynamics and promoting competition in the fuel market.

# 3 Which remedies can strengthen competition?

In the first step of the assessment, a narrow list of remedies considered relevant for Sweden were identified.

In the interim report<sup>12</sup>, chapter 7, a large number of studies from other countries on competition in fuel markets were reviewed. Several of these studies include proposals to improve competition. They consist of measures along the entire value chain and are tailored to the specific competition problems identified in the various countries. According to our assessment, many of these proposals are not relevant for Sweden.

Table 1 presents the six problem areas along with overarching themes for the remedies that were proposed. Of the six areas, we consider areas 3 and 5 to be the most relevant for the Swedish market. The interim report found no competition issues in the form of entry barriers in any part of the value chain. The agreements and collaborations that exist mainly concern depot collaborations, which facilitate and streamline logistics for the companies.

Regarding area 3, insufficient consumer information, we can, based on the Novus survey (chapter 3 of the interim report and Appendix 2<sup>13</sup> of the same report), conclude that awareness of, for instance, recommended prices was limited among respondents. Otherwise, no examples of insufficient consumer information were identified that could weaken competition.

Table 1 Competition Issues and Measures Identified in Studies from Other Countries

Competition issues	Proposed measures in other countries
Entry barriers in production and wholesale levels	Improved access to and expansion of infrastructure, harmonization of fuel standards, measures for a more flexible wholesale market
2. Entry barriers in the retail level	Simplified planning processes, competitive allocation of station premises
3. Insufficient Consumer Information	Price displays, price comparison tools, better price information.
Competition-Disrupting     Agreements and Collaborations	Restrictions on cross-ownership, information sharing, and connections between companies, strengthened position for independent retailers.
5. Price Leader-Follower pattern	Price regulation
6. Weak Competitive Pressure	Structural separation, market monitoring, expansion bans for larger companies

Source: Interim report "How Does Competition Affect Gasoline and Diesel Prices?" (Report 2024:6), Chapter 7.

For area 5, the price leader-follower behaviour, a very strong pattern was identified.

<sup>13</sup> Konkurrensverket (2024b).

<sup>&</sup>lt;sup>12</sup> Konkurrensverket (2024c).

Therefore, remedies such as regulated conditions for access to critical infrastructure, infrastructure expansion, and simplified permit processes for establishing fuel stations, restrictions on cross-ownership between companies, structural separation, and similar measures, are not justified for implementation in Sweden.

The measures implemented in other countries regarding problem areas 3 and 5 primarily involve various initiatives to make price information more accessible to customers, with the establishment of digital price comparison tools being the most common. Such a price comparison tool should be easy for individuals and businesses to use, typically with an interface suitable for a modern smartphone, and provide information on current fuel prices at locations that represent realistic purchasing alternatives for users.

In addition to price comparison tools, there are also proposals that involve regulating how and when a fuel price may be changed. Such regulations have been implemented in Western Australia and Austria.

Our assessment, based on the international comparison, is therefore that the most relevant remedies for the Swedish market are as follows:

- 1. A digital price comparison tool that displays current station prices
- 2. Price regulation: only one price increase per day

The remainder of this report focuses further on whether these measures should be implemented in the Swedish fuel market.

# 4 Research on competition and price transparency

A digital price comparison tool in the form of an app will increase price transparency in the market for both suppliers and consumers. However, neither theoretical nor empirical economic research unequivocally confirms whether increased price transparency is positive for competition.

When price and quality become easier or cheaper for customers and companies to observe, it is often said that transparency increases. This allows consumers to better identify producers offering the best combination of price and quality. At the same time, producers are also more able to align their market behavior with competitors, introducing a risk of higher prices.

Nearly 30 years ago, a now-famous study of the Danish concrete market was published, <sup>14</sup> showing that increased transparency can lead to higher prices. The Danish competition authorities had noted significant price variations among producers and concluded that this was a result of weak competition due to a lack of transparency, as prices were kept secret.

The competition authority began collecting and publishing producers' prices. However, the effect was the opposite of what was expected: price increases of 15–20 per cent and significantly less price variation over time. The title of the article, "Government-assisted oligopoly: A concrete case", had a significant impact on applied economic research and policy design in many countries for years to come.

In a recent research overview,<sup>15</sup> it is questioned whether the influence of this article has been exaggerated over the years and whether it has overly shaped economists' and policymakers' views on whether increased transparency improves competition.

Both theoretical and empirical research provide several examples where either outcome—price increases or decreases—can occur. In the broader literature, there are examples where prices increased due to government-mandated transparency, <sup>16</sup> as well as cases where prices fell. <sup>17</sup> Some empirical studies on fuel markets, described in section 6 below, show mixed results.

These varying outcomes illustrate the difficulty in predicting the price effects of introducing a new digital price comparison tool. The characteristics of the specific market determine how price dynamics will be affected and whether the average customer will pay more or less for a liter of fuel. Another question is how price dispersion changes: increased dispersion can improve opportunities for consumers

<sup>14</sup> Albæk et al (1997).

<sup>15</sup> Foros et al (2022).

<sup>&</sup>lt;sup>16</sup> Luco (2019), an empirical study of the fuel market in Chile.

<sup>&</sup>lt;sup>17</sup> Ater and Rigbi (2023), an empirical study of the grocery market in Israel.

to find bargains, allowing more price-sensitive customers to take advantage of low prices.

There is no universally accepted list in the research community of market characteristics that determine whether increased price transparency is positive or negative for competition. In any case, economic research appears relatively consistent on the following:

- 1. If secret discounts or negotiated prices at the customer level are possible, increased price transparency can lead to *higher* price levels
- 2. If it is initially difficult for customers to compare prices and producers generally have better information about current prices than customers, increased price transparency can lead to *lower* prices
- 3. The more similar producers are in terms of size, cost structure, focus, and production technology, the greater the risk that increased price transparency will lead to *higher* prices

It is therefore not possible, based on current research, to draw definitive conclusions about the most likely effects of introducing a digital price comparison tool in the Swedish fuel market.

Some specific Swedish characteristics of the fuel market should, however, be mentioned in this context. The Novus study (Appendix 2)<sup>18</sup> shows that individuals' knowledge of recommended prices is relatively low. A minority, four out of ten respondents, state that they are aware of their existence. Only one in twenty regularly or occasionally checks the current recommended price level. This could indicate that a price comparison service has the potential to significantly increase consumers' awareness of current prices, potentially leading to lower prices due to better competition, as suggested by point 2 above.

Against this, it should be noted that respondents in the same study would not drive to another station even if prices were SEK 0.50 higher than expected. Furthermore, given current station prices, it is rarely worthwhile to drive to another station for lower prices, as illustrated in Figures 19 and 20 in the interim report. Price dispersion is also limited in Sweden: in only two out of 21 selected municipalities does the price difference for gasoline exceed SEK 0.50 within a 20-minute driving distance (see Table 27 in the interim report). For diesel, the corresponding figure is one out of 21 municipalities (Table 28 in the interim report).

16

<sup>&</sup>lt;sup>18</sup> Konkurrensverket (2024b).

<sup>&</sup>lt;sup>19</sup> Konkurrensverket (2024c), p. 62-63.

<sup>&</sup>lt;sup>20</sup> Konkurrensverket (2024c), p. 129.

<sup>&</sup>lt;sup>21</sup> Ibid, p. 130.

The question, therefore, is whether a price comparison service would significantly affect consumer choices given today's limited local price dispersion.

An important consideration is whether a price app could, in itself, lead to increased local price dispersion, which would make it more valuable for consumers to use. There is no research-based conclusion on the likelihood of this happening.

Finally, it is worth noting that a digital price comparison tool would significantly increase the ability of market companies to use pricing algorithms, as it would be much easier to monitor competitors' pricing. Currently, chains in the Swedish market invest considerable resources in monitoring competitors' prices, often through physical visits. The risks associated with such pricing, described in section 5.5 of the interim report and in the supporting report on algorithmic pricing,<sup>22</sup> are likely to increase as a result. These risks should be considered in the evaluation.

17

<sup>&</sup>lt;sup>22</sup> Konkurrensverket (2024a).

# 5 Experiences with price comparison tools

This section provides a detailed description of the design and experiences of digital price comparison tools in fuel markets in selected European countries. The section also touches on a few examples from the Swedish market with similar tools that display prices in other markets.

Price comparison tools for fuel exist in several countries. The interim report<sup>23</sup> provides 19 examples from 13 countries that introduced such tools between 2000 and 2022. In this section, we take a closer look at four of these countries.

The selection includes both price comparison tools made available to consumers through government websites, as in Italy, Portugal, and Austria, and cases where the authorities provide data to private third-party operators who then make the prices visible to consumers, as in Germany. In addition to these four countries, the United Kingdom is also included, as it will soon introduce a price comparison tool. The information about these countries' price comparison tools has been obtained from both open sources and through meetings and correspondence with the countries' competition authorities or other agencies responsible for the tools. Where relevant research on the effects of these tools is available, it is also presented.

In Sweden, there are also existing price comparison services for other products. These include services that are both developed by the government and through private initiatives. A selection of these is described at the end of this section.

# 5.1 United Kingdom – the Fuel Finder Scheme

In its 2023 report on the UK fuel market, the Competition and Markets Authority (CMA) found that companies' margins on fuel sales had increased since 2019. Consumers paid an extra six pence per liter, equivalent to approximately SEK 0.79, in 2023.<sup>24</sup> CMA attributed this increase largely to weakened competition.

To address this, CMA proposed two remedies. The first was the establishment of a monitoring function for competition in the fuel market to track developments. The second was the introduction of a price comparison tool, *Fuel Finder*, which would require station owners to report prices in real-time, making them visible to consumers.<sup>25</sup>

Due to a general election called in 2024, approval of the law underpinning price reporting was delayed.<sup>26</sup> As of now, there is no legal requirement for price

<sup>&</sup>lt;sup>23</sup> Konkurrensverket (2024c), p. 259-260.

<sup>&</sup>lt;sup>24</sup> Competition and Markets Authority (2023), p. 6-7.

<sup>&</sup>lt;sup>25</sup> Ibid. p. 25–30

<sup>&</sup>lt;sup>26</sup> Department for Energy Security and Net Zero (2024).

reporting; instead, a temporary solution has been implemented, allowing fuel companies to report prices voluntarily. In its current form, approximately 35 per cent of stations in the UK and around 60 per cent of the sold volume are included.<sup>27</sup> The price comparison tool is expected to be operational by the end of 2025.<sup>28</sup>

According to the proposal, all station owners will be required to report price changes within 30 minutes. Reporting will be possible through various means, such as API solutions, a web portal, or SMS. The reported data will be compiled by an external party and made available to the public both via an API and as a data file sent twice daily by email. The API is primarily intended for use by third-party providers offering price comparison websites or mobile apps, while the email function is expected to be used mainly by individuals or for research purposes.<sup>29</sup>

## 5.2 Germany – Markttransparenzstelle für Kraftstoffe (MTS-K)

Since 2013, operators of fuel stations or those setting station prices in Germany have been required to report price changes for gasoline and diesel.<sup>30</sup> Price changes must be reported within five minutes of the change to the *Market Transparency Unit for Fuels (MTS-K)* under the German competition authority, the Bundeskartellamt. This data is then shared with approved information providers who make prices available to consumers via apps and websites.<sup>31</sup> In Germany, there are several price comparison services developed by third-party providers that receive price data from MTS-K. Currently, there are about 200 information providers offering price comparison solutions.

The price comparison regulation was introduced after the Bundeskartellamt published the results of a sectoral investigation in the fuel market in 2011. The investigation found that the market was an oligopoly dominated by five players. Competitors observed each other's prices on station electronic displays, which were recorded in the pricing systems of the fuel companies, while consumers lacked sufficient price information. The sectoral investigation welcomed private initiatives to provide consumers with better information to address the information asymmetry. Furthermore, the introduction of price change regulation, similar to those in Austria—where stations are limited to raising prices once per day—was rejected,<sup>32</sup> as station prices in Germany were typically only raised once per day.<sup>33</sup>

In Germany, the average number of price changes per station per day has increased significantly. According to MTS-K's first annual report from 2014, stations changed

<sup>&</sup>lt;sup>27</sup> Turnbull (2023).

<sup>&</sup>lt;sup>28</sup> Department for Energy Security and Net Zero (2024).

<sup>29</sup> Ibid.

<sup>&</sup>lt;sup>30</sup> Bundeskartellamt (2024a).

<sup>31</sup> Bundeskartellamt (2024b).

<sup>&</sup>lt;sup>32</sup> Bundeskartellamt (2024c).

<sup>33</sup> Bundeskartellamt (2011), p. 19, 29, 36-37 and 51-52.

their prices an average of four to five times per day, including one increase and three to four decreases. According to MTS-K's 2021 report, the average number of price changes had increased to approximately eight to 21 times per day, depending on the location.<sup>34</sup> The number of price increases had risen to an average of about three to seven times per day, while the number of decreases had increased to about five to fourteen times per day.<sup>35</sup> Frequent price changes per day can be detrimental for consumers, as there is a higher risk that the price will change between the time of price comparison and the actual refueling.

Research studies examining the effects of the measures implemented in Germany have produced mixed results. A 2017 study by Dewenter et al.<sup>36</sup> found that the increased price transparency led to higher prices, while a 2023 study by Montag et al.<sup>37</sup> suggested lower prices. The latter study also indicated that the price reduction was smaller for diesel than for gasoline, attributing this to diesel users being better informed than gasoline consumers. A study by Horvath<sup>38</sup> demonstrated lower margins resulting from the increased transparency in Germany.

## 5.3 Austria – Spritpreisrechner

Since 2011, fuel station owners in Austria have been required to report prices for gasoline and diesel to the regulatory authority E-Control, which makes the prices available to consumers through the website *Spritpreisrechner*. Prices must, by law, be no older than 30 minutes, and consumers can search for station prices by address, district, and federal state.<sup>39</sup>

The price comparison tool limits which station prices are visible in a single search. For example, a search based on an address displays the ten nearest stations and the prices at the five stations with the lowest prices. The purpose of this limitation is to prevent companies from aligning their pricing at a level above the original average.<sup>40</sup>

Few studies have examined the effects of price transparency regulations in Austria. A non-peer-reviewed study<sup>41</sup> analyzed price transparency regulations in Austria, France, and Germany. The researchers found that the price of gasoline in Austria increased by one eurocent per liter in the short term. At the same time, they found

<sup>&</sup>lt;sup>34</sup> Bundeskartellamt (2014), p. 22–23.

<sup>35</sup> Bundeskartellamt (2021), p. 34.

<sup>36</sup> Dewenter et al (2017).

<sup>37</sup> Montag et al (2023).

<sup>38</sup> Horvath (2019).

<sup>39</sup> E-Control (2024).

<sup>40</sup> Ibid

<sup>41</sup> Bernhardt et al (2024).

no effect on prices in France and a two eurocent price reduction per liter in Germany.

A study by Martin<sup>42</sup> analyzed how consumer welfare is affected by different degrees of price transparency based on the Austrian model. The study estimated consumer welfare by varying the proportion of visible stations through simulations. The results show that consumer welfare is maximized when the lowest fifth of prices is displayed, generating cost reductions of 1.5 percent, with full price transparency serving as the counterfactual scenario. This study suggests that competition would be better promoted if the number of visible prices in the price comparison tool were reduced.

## 5.4 Italy – Osservapezzi Carburanti

Italy has had a price comparison tool since 2013, requiring station operators to report prices for gasoline, diesel, and gas to the Italian Ministry of Enterprises and Made in Italy, *Ministero della Imprese e del Made in Italy*. Station prices are published on the publicly developed website *Osservaprezzi Carburanti*, where consumers can search for stations and their prices based on criteria such as address, region, and route.<sup>43</sup> In addition to the public price comparison tool, private alternatives also exist in Italy.

The price comparison tool was introduced in conjunction with the entry of new market players that were not vertically integrated, which increased price competition in the Italian road fuel market. The comparison tool has contributed to this development.

According to a consumer survey in Italy, about one-fifth of respondents use the public price comparison tool when refueling outside motorways, and about 30 per cent use it when refueling along a motorway. At the same time, private specialized websites and apps are used often or very often by about 40 percent outside motorways and about 50 per cent along motorways.<sup>44</sup> Thus, private comparison tools are more widely used than the public alternative, according to the survey.

# 5.5 Portugal – Preço dos Combustíveis

Since 2008, the Portuguese Directorate-General for Energy and Geology, *Direção-Geral de Energia e Geologia*, has provided a price comparison tool for fuel stations. According to the law, fuel operators must report price changes before the changes take effect and specify the time when the new prices will apply at the station.<sup>45</sup> The

<sup>43</sup> Ministero della Imprese e del Made in Italy (2024).

<sup>42</sup> Martin (2023).

 $<sup>^{\</sup>rm 44}$  Autorità Garante della Concorrenza e del Mercato (2023), p. 105.

<sup>&</sup>lt;sup>45</sup> Direção-Geral de Energia e Geologia (2024a).

prices are published on the website *Preço dos Combustíveis*, where consumers can search for station prices based on criteria such as district, municipality, and brand.<sup>46</sup>

The Portuguese competition authority, *Autoridade da Concorrência* (AdC), pointed out in 2004 that consumers' access to price information needed improvement. AdC recommended requirements for fuel stations to display prices on roadside signs and on signs at motorway entrances showing fuel prices for stations along the route.<sup>47</sup> The recommendation for increased price transparency for consumers was also emphasized in a report by AdC published in June 2008.<sup>48</sup> The price comparison tool was launched in December of the same year.

As far as we are aware, there is no empirical research on the tool's effects.

#### 5.6 Fuel price comparison tools: what lessons can we draw?

The review of the price comparison tools in the five countries is summarized in Table 2 below. The basic functionality and purpose are similar, but there are also differences. In Austria, Italy, and Portugal, the interface for consumers is publicly managed, while in Germany and the upcoming system in the United Kingdom, private entities disseminate the price information and make it available and searchable for motorists. In Austria, two private alternatives, so-called "auto clubs," have agreements with the authorities to use the price information in their own channels.

In terms of coverage, Austria stands out: only half of the stations in a given search are displayed with price information, namely those with the lowest prices. For the remaining stations, only the location is shown, not their prices. This is intended to prevent price coordination at a higher level through tacit and non-explicit agreements. The approach stands out as a unique distinction compared to other price comparison tools.

<sup>&</sup>lt;sup>46</sup> Direção-Geral de Energia e Geologia (2024b).

<sup>&</sup>lt;sup>47</sup> Authorudade da Concorrência (2004), p. 17.

<sup>&</sup>lt;sup>48</sup> Authorudade da Concorrência (2008), p. 78.

Table 2 Comparison of five different countries' price comparison tools

Country (starting year)	Name	Information Provider	Price Coverage	Maximum Permitted Delay
UK (2025)	Fuel Finder	Private	All stations	30 min
Germany (2013)	ADAC, Clever-Tanken, etc.	Private	All stations	5 min
Österrike (2011)	Spritpreisrechner	Public (private options available)	50 percent of stations (with the lowest price)	30 min
Italy (2013)	Osservapezzi Carburanti	Public (and private options)	All station prices	None
Portugal (2008)	Preço dos Combustíveis	Public (and private options)	All station prices	None

Source: The competition authority of each country, the Swedish Competition Authority.

The experiences in countries that have introduced price comparison tools are generally cautiously positive, according to representatives of competition authorities, although in many cases systematic studies analyzing whether competition has been improved are lacking. In Germany, empirical evidence points in both positive and negative directions. In Austria, a study indicates negative effects. Overall, the effects of price comparison tools remain unclear.

## 5.7 Price comparison tools in other industries in Sweden

In Sweden today, there are several price comparison services for areas other than road fuel. Some are publicly managed, while others are entirely private initiatives.

Of particular interest are price comparison services that do not rely on user reporting. These include government-developed services such as *Tandpriskollen*, created by the Swedish Dental and Pharmaceutical Benefits Agency (TLV), and *Elpriskollen*, managed by the Swedish Energy Markets Inspectorate (Ei). Additionally, there are privately developed price comparison services such as *Pricerunner* and *Prisjakt* for e-commerce, and *Matpriskollen* for the food grocery market.

Experiences with price comparison tools vary between markets. In e-commerce, privately developed services attract millions of visits per month, while evaluations of *Tandpriskollen* suggest limited use and low interest among patients. In some cases, such as in the grocery market, price comparison companies sell services to the supply side, allowing companies to gather information on competitors' prices.

TLV launched *Tandpriskollen* in February 2020 to improve patients' price awareness and their position relative to care providers.<sup>49</sup> It is a website where patients can compare dental clinic prices for various treatments. The displayed prices are median

-

<sup>&</sup>lt;sup>49</sup> Tandvårds- och läkemedelsförmånsverket (2023), p. 30.

prices for six-month periods based on data from the Swedish Social Insurance Agency (*Försäkringskassan*).<sup>50</sup> One desired outcome was a reduction in price dispersion in the dental care market, but no such reduction occurred between 2019 and 2022, according to TLV. A survey found that only about 10 percent of patients compare prices. TLV suggests this may be because patients rarely switch clinics and price does not appear to be a high priority, as the survey also shows. This indicates that price comparisons may not be of significant interest to patients.<sup>51</sup>

*Elpriskollen*, launched in 2008 by Ei, allows consumers and businesses to compare electricity contracts reported to Ei by electricity trading companies, which are legally required to report prices under the Electricity Act. The number of unique visitors increased to 780,000 in 2022, coinciding with the high electricity prices that year.<sup>52</sup>

Price comparison websites in e-commerce, such as *Pricerunner* and *Prisjakt*, attract millions of users each month.<sup>53</sup> These platforms allow consumers to compare prices for a wide range of products across various markets, typically durable goods and fashion items.

A research report from the Swedish Retail and Wholesale Council shows that price reductions on *Prisjakt* lead to an average increase in traffic to companies' websites and improved profitability compared to companies not listed on *Prisjakt*.<sup>54</sup>

In a commissioned research report for the Swedish Competition Authority, Rudholm and Lindgren conducted a literature review and data analysis from *Prisjakt* to examine price dispersion in e-commerce markets with low search costs. Their findings indicate that lower search costs lead to lower prices and reduced price dispersion, though exceptions exist.

The authors highlight three common explanations for unchanged price dispersion:55

- 1. A large proportion of consumers do not use price comparison services;
- 2. Variations in e-retailers' service levels, and;
- 3. E-retailers operating short-term in markets before exiting.

In the grocery market, private players also provide price comparison services that enable consumers to compare prices between stores and chains. The Swedish

<sup>50</sup> Tandvårds- och läkemedelsförmånsverket (2024).

<sup>&</sup>lt;sup>51</sup> Tandvårds- och läkemedelsförmånsverket (2023), p. 30.

<sup>52</sup> Energimarknadsinspektionen (2023), p. 59.

<sup>53</sup> PriceRunner (2024) och Prisjakt (2023).

<sup>&</sup>lt;sup>54</sup> Rudholm *et al* (2021), p. 5.

<sup>&</sup>lt;sup>55</sup> Rudholm och Lindgren (2019), p. 12, 18–21, 27–31 and 46.

Consumer Agency points out that price comparison services also sell information to market actors, enabling stores to monitor competitors' prices.<sup>56</sup>

*Matpriskollen* is a price comparison provider that collects both regular prices from grocery chains and promotional offers from stores. It targets both consumers and businesses, offering services such as *Kampanjkollen*, *Priskollen*, and *Butikskollen*, which provide store owners with information about competitors' prices and campaigns.<sup>57</sup>

<sup>&</sup>lt;sup>56</sup> Konsumentverket (2023), p. 20.

<sup>&</sup>lt;sup>57</sup> Matpriskollen (2024a, 2024b).

# 6 Limit on the number of price increases per day

As a complement to price comparison tools, Austria and Western Australia have regulations on how often fuel prices can be changed. Such regulations can influence the effects of a price comparison tool by limiting companies' ability to implement dynamic pricing strategies.

The purpose of these restrictions is to reduce upward price adherence to the level set by a price leader. The restriction acts as a kind of anchor that cannot be moved as easily or as frequently as would otherwise be the case.

In Austria, price change regulations have been in place since 2009 and were amended in 2011 when the Austrian price comparison tool was introduced. The earlier regulation stipulated that 24-hour stations could only increase prices at midnight, while stations with limited hours could only raise prices at opening. Automated stations were only allowed to raise prices until 8:30 AM.

The 2011 adjustment allowed price increases only once per day, specifically at noon. The following year, another restriction was added, prohibiting price changes during Easter and the first two weeks of the summer vacation.<sup>58</sup> Thus, station prices can only be raised once per day and only at a fixed time. However, the number of price decreases is not regulated.

A 2012 study by Dewenter and Heimeshoff<sup>59</sup> examined how price change regulations affect price levels. The study analyzed both Austria's and Western Australia's regulations. For Austria, the analysis focused on the impact of the 2009 regulation on gasoline and diesel prices, with prices in 24 other European countries serving as the control group. The authors concluded that price levels decreased after the regulation was introduced.

Another study by Becker et al. (2021)<sup>60</sup> also analyzed the effect of Austria's price regulation on gasoline and diesel prices. Using a synthetic control group, they found that both gasoline and diesel prices decreased following the implementation of the regulation, with the effect being greater for gasoline.

In Western Australia, the *FuelWatch* program was introduced in 2001, including a 24-hour rule requiring fuel companies to report the next day's station prices by 2:00 PM the previous day. The reported price, sent to the *Department of Consumer and Employment Protection* (DOCEP), is then valid from 6:00 AM and for the next 24 hours. Consumers can access prices both via a website and by phone from 2:30 PM the previous day.<sup>61</sup>

<sup>58</sup> Becker et al (2021).

<sup>&</sup>lt;sup>59</sup> Dewenter och Heimeshoff (2012).

<sup>60</sup> Becker et al (2021).

<sup>&</sup>lt;sup>61</sup> Australian Competition and Consumer Commission (2007), p. 243.

The motivation behind the 24-hour rule is to make it harder for fuel companies to engage in tacit price coordination through signaling and price leadership. Pricing thus involves a risk of lost sales, as prices cannot be changed for 24 hours. Consumers value the elimination of intra-day price variations, with a survey showing that 83 percent of respondents preferred a constant price throughout the day.<sup>62</sup>

The Australian Competition and Consumer Commission (ACCC) analyzed the effects of FuelWatch in a 2007 report. They examined the difference in average price margins between Perth and other state capitals before and after the tool's introduction and concluded that fuel margins—and thus prices—decreased in Perth following the implementation.<sup>63</sup> However, as FuelWatch includes both a price comparison tool and a price change regulation, it is impossible to distinguish the effects of these measures. Dewenter and Heimeshoff,<sup>64</sup> however, found opposite results when analyzing how prices in Western Australia were affected by the introduction of FuelWatch in 2001, using prices from other Australian states as the control group. They found no significant effect of the regulation on price levels in Western Australia.

A 2009 study by Wang<sup>65</sup> observed changes in price leadership in Perth after the introduction of the 24-hour rule. Before the regulation, when stations could change prices freely, price increases were often initiated by a single price leader. Under the regulation, the initiative was distributed among the three largest players. The change is explained by the higher cost of being a price leader and initiating a price increase under the 24-hour rule, as prices must remain constant for a full day. However, Edgeworth price cycles—rapid large price increases followed by successive decreases—were observed both before and during the 24-hour rule.

In summary, price regulation in these two countries appears to be associated with lower prices due to improved competition, although the results remain somewhat uncertain. It should also be noted that in both cases, price regulation was implemented alongside a publicly sanctioned price comparison tool. It can therefore not be concluded that price regulation alone, without a price comparison tool, would produce the effects described above.

# 6.1 Number of price changes at stations per day in Sweden

During the hearing conducted as part of this assignment, several participants expressed skepticism about this measure, as their experience indicated that more than one price change per day is very rare.

<sup>62</sup> Ibid, p. 243-244.

<sup>63</sup> Ibid, p. 246-247.

<sup>&</sup>lt;sup>64</sup> Dewenter och Heimeshoff (2012).

<sup>65</sup> Wang (2009).

This issue can be further examined using the price statistics that formed the basis of the price analysis in the interim report,<sup>66</sup> as detailed below.

The analyzed period is limited to January 1, 2021, through August 31, 2023, and includes only stations where price change data was available for all days. Stations that opened or closed during the period are excluded.

Figure 1 shows that prices at an average station do not change on nearly half of the days. For approximately 46 percent and 45 percent of days for gasoline and diesel, respectively, no price changes occurred at the station. For about 36 percent and 37 percent of days, prices were changed only once. On about 14 percent of days—roughly one day per week—the price was changed twice. On around 3 percent of days, the price was changed three times. It is extremely rare, occurring on less than 1 percent of days, for the average station to make more than three changes per day.

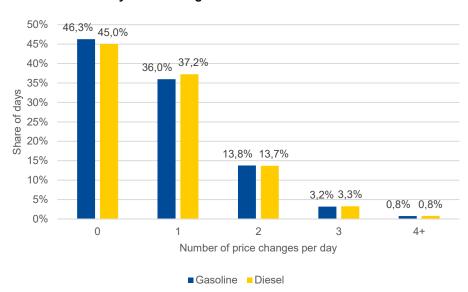


Figure 1 Average percentage of days that stations changed the pump price, 1 January 2021–31 August 2023

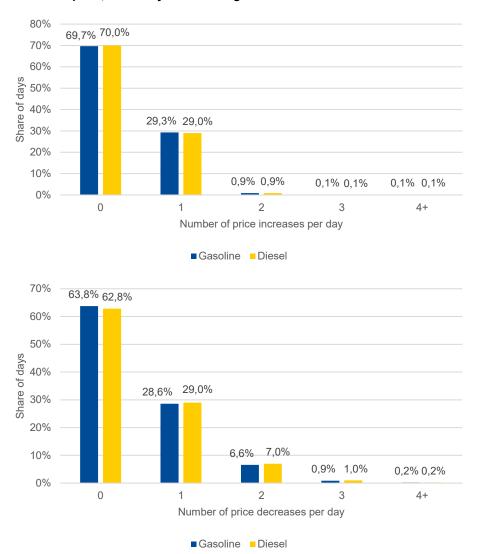
Note: Gasoline refers to "Bensin 95" (E10). The averages are weighted according to the stations' petrol and diesel volumes sold to private customers during the period January 2021 to August 2023. Source: Information from the companies, processed by the Swedish Competition Authority.

Regarding the number of price increases, a similar pattern emerges, as shown in the upper panel of Figure 2. However, it is even more common for the price not to increase at all—this occurs on approximately 70 percent of days. When the price does increase, it typically happens only once per day, which occurs on about 29 percent of days. Thus, more than one price increase per day is currently rare.

We can therefore conclude that, under current conditions, a price regulation allowing only one price increase per day would affect only about 1 percent of days.

<sup>66</sup> Konkurrensverket (2024c).

Figure 2 Average proportion of days that stations have increased and decreased the pump price, 1 January 2021–31 August 2023



Note: Gasoline refers to "Bensin 95" (E10). The averages are weighted according to the stations' petrol and diesel volumes sold to private customers during the period January 2021 to August 2023. Source: Information from companies, processed by the Swedish Competition Authority.

Regarding the number of price decreases, as shown in the lower chart of Figure 2, days without decreases constitute the majority. On approximately 64 percent and 63 percent of days, prices for gasoline and diesel, respectively, are not reduced, while days with one price decrease account for only about 29 percent.

## 7 Should remedies be imposed?

After careful consideration of all observations above, we find that the identified remedies should not be introduced in Sweden at this time.

The reasons are outlined below.

The measures most suitable for promoting competition in the Swedish fuel market are a digital price comparison tool, preferably in combination with a limitation on the number of allowed price increases per day. These measures directly address the main current competition issue, namely the homogeneous price structure and the high degree of price-following behavior among fuel companies in the retail sector.

However, there are factors both in favor of and against the introduction of a digital price comparison tool. Improved information for consumers can be positive because it facilitates the search for fuel stations that offer the lowest prices. It also provides better opportunities for consumers who are more price-sensitive to actively seek out stations with lower prices.

Against this, it should be weighed that it also facilitates fuel companies' monitoring of their competitors: a tool that shows prices in almost real-time makes it easier to quickly detect and respond to price reductions in the market. As a result, the incentives for individual companies to initiate price reductions decrease because they know that competitors will notice and almost immediately be able to respond with price reductions of their own.

The effect of increased price transparency has been studied extensively in economic research. There is no generally established consensus on the effects, as both theoretical and empirical research show both positive and negative examples.

The price comparison tools currently available in Germany, Austria, Italy, and Portugal, which the Swedish Competition Authority has studied more closely in this report, are, however, considered by the competition authorities of these countries to have made a positive contribution to competition. They are also continuously being refined and improved, and there are no plans to dismantle them.

Despite this, there is no clear empirical evidence indicating that prices overall have been pressured down in these countries as a result of the price comparison tools. In Germany, *the number* of price changes has risen sharply, from 1–2 when the tool was introduced to nearly 20 changes per day at present, which is likely a result of increased use of algorithmic pricing made possible by the increased price transparency. Research has shown that such AI-based pricing can lead to weakened competition and increased prices for consumers.

Thus, as mentioned above, there are factors both in favor of and against the introduction of digital price comparison tools in Sweden. Our assessment, as stated earlier, is that there are no reasons to proceed with these remedies at this time.

In this assessment, we have also taken into account the commitments made by the leading fuel companies within the framework of the legal investigation. These commitments will lead to the leading companies ceasing to publish recommended fuel prices on their websites. This will likely influence price dynamics in the market according and probably weaken the strong pattern of price leadership that we see today. One possible effect is that local price dispersion will increase in the future as a result of this change.

In any case, the future development is difficult to predict. We therefore believe that the situation should be reviewed within 2–3 years when the need for introducing remedies should be reconsidered. We can see no obvious disadvantage if such remedies are introduced in a few years instead of next year.

The review of the various countries' price comparison tools has provided some insights regarding the design of these measures. The most appropriate design, in our assessment, is the Austrian model, where only the prices of the stations with the lowest prices are visible, combined with a rule that only allows one price increase per day. Such a model preserves the consumer benefit, which lies in information about where to find the lowest prices, and simultaneously makes it more difficult for companies to converge on a price level that is above the average in the local market.

This design thus appears as a concrete solution to the problem identified in research, namely tacit coordination among competitors. The limitation on the number of allowed price increases per day seems to work in the same direction, as it reduces the conditions for using AI-based price algorithms in a way that leads to higher prices. This thereby reduces the risk of the number of price changes increasing in the manner seen in Germany.

#### References

Albæk, Svend, Møllgaard, Peter och Overgaard, Per B. (1997), "Government-Assisted Oligopoly Coordination? A Concrete Case", *Journal of Industrial Economics*, (4), 429–443.

Ater, Itai og Oren Rigbi, (2023) "Price Transparency, Media and Informative Advertising", 'Revise and Resubmit', *American Economic Journal: Microeconomics*.

Australian Competition and Consumer Commission (2007), *Petrol Prices and Australian Consumers: Report of the ACCC into the Price of Unleaded Petrol*, <a href="https://www.accc.gov.au/system/files/Petrol%20prices%20and%20Australian%20consumers.pdf">https://www.accc.gov.au/system/files/Petrol%20prices%20and%20Australian%20consumers.pdf</a> [Retrieved 2023-04-24].

Autoridade da Concorrência (2004), *Recomendação* nº 3/2004, <a href="https://www.concorrencia.pt/sites/default/files/processos\_e\_decisoes/epr/2004/07\_Recomendação2004\_03.pdf">https://www.concorrencia.pt/sites/default/files/processos\_e\_decisoes/epr/2004/07\_Recomendação2004\_03.pdf</a> [Retrieved 2023-05-04].

Autoridade da Concorrência (2008), Relatório da Autoridade da Concorrência sobre o Mercado dos Combustíveis em Portugal,

https://www.concorrencia.pt/sites/default/files/processos e decisoes/epr/2008/2008 %20-

%20Relat%c3%b3rio%20da%20Autoridade%20da%20Concorr%c3%aancia%20sobre %20o%20Mercado%20de%20Combust%c3%adveis%20em%20Portugal.pdf [Retrieved 2023-05-04].

Autorità Garante della Concorrenza e del Mercato (2023), *IC54 - I prezzi dei carburanti per autotrazione: dinamiche concorrenziali dall'estrazione alla distribuzione*, <a href="https://www.agcm.it/dotcmsdoc/bollettini/2023/ES">https://www.agcm.it/dotcmsdoc/bollettini/2023/ES</a> 25-23,pdf [Hämtad 2023-10-05].

Becker, Maike, Pfeifer, Gregor och Schweikert, Karsten (2021), "Price Effects of the Austrian Fuel Price Fixing Act: A Synthetic Control Study", CESifo Working Paper No. 8819.

Bernhardt, Lea, Breiderhoff, Xenia och Dewnter, Ralf (2024), New Evidence on Price Effects of Transparency Regulations in European Fuel Markets, Research Square.

Bundeskartellamt (2011), Fuel Sector Inquiry,

https://www,bundeskartellamt,de/SharedDocs/Publikation/EN/SectorInquiries/Fuel %20Sector%20Inquiry%20-%20Final%20Report,pdf? blob=publicationFile&v=1 [Retrieved 2024-11-19].

Bundeskartellamt (2014), Ein Jahr Markttransparenzstelle für Kraftstoffe (MTS-K): Eine erste Zwischernbilanz,

https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Ein Jahr M TS-K.pdf? blob=publicationFile&v=2 [Retrieved 2024-11-22].

Bundeskartellamt (2021), Ein Jahr Markttransparenzstelle für Kraftstoffe (MTS-K), <a href="https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Jahresbericht MTS-K">https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Jahresbericht MTS-K</a> 2021.pdf? <a href="blob=publicationFile&v=2">blob=publicationFile&v=2</a> [Retrieved 2024-11-22].

Bundeskartellamt (2024a), *Market Transparency Unit for Fuels*, <a href="https://www.bundeskartellamt,de/EN/Tasks/markettransparencyunit\_fuels\_markettransparencyunit\_fuels\_node,html">https://www.bundeskartellamt,de/EN/Tasks/markettransparencyunit\_fuels\_node,html</a> [Retrieved 2024-11-19].

Bundeskartellamt (2024b), *Markettransparenzstelle für Kraftstoffe*, <a href="https://www,bundeskartellamt,de/DE/Aufgaben/MarkttransparenzstelleFuerKraftstoffe/MTS-K\_Infotext/mts-k\_node,html">https://www,bundeskartellamt,de/DE/Aufgaben/MarkttransparenzstelleFuerKraftstoffe/MTS-K\_Infotext/mts-k\_node,html</a> [Retrieved 2024-11-19].

Competition and Markets Authority (2023), Supply of road fuel in the United Kingdom market study: Final Report,

https://assets.publishing.service.gov.uk/media/64a280e845b6a200123d46e7/Supply of road fuel in the United Kingdom market study Final Report.pdf [Retrieved 2023-07-31].

Department for Energy Security and Net Zero (2024), Consultation on open data scheme and ongoing monitoring function for road fuel prices: government response, Uppdaterad 2024-10-30,

https://www,gov,uk/government/consultations/empowering-drivers-and-boosting-competition-in-the-road-fuel-retail-market/outcome/consultation-on-open-data-scheme-and-ongoing-monitoring-function-for-road-fuel-prices-government-response [Retrieved 2024-11-19].

Dewenter, Ralf och Heimeshoff, Ulrich (2012), "Less Pain at the Pump? The Effects of Regulatory Interventions in Retail Gasoline Markets", DICE Discussion Paper no. 51.

Dewenter, Ralf, Heimeshoff, Ulrich och Lüth, Hendrik (2017), "The impact of the market transparency unit for fuels on gasoline prices in Germany", *Applied Economics Letters*, 24(5), s, 302–305.

Direção-Geral de Energia e Geologia (2024a), *Apresentação*, <a href="https://precoscombustiveis,dgeg,gov,pt/apresentacao/">https://precoscombustiveis,dgeg,gov,pt/apresentacao/</a> [Retrieved 2024-11-20].

Direção-Geral de Energia e Geologia (2024b), *Prequisa*, <a href="https://precoscombustiveis,dgeg,gov,pt/">https://precoscombustiveis,dgeg,gov,pt/</a> [Retrieved 2024-11-20].

E-Control (2024), *Der Spritpreisrechner*, <a href="https://www,spritpreisrechner,at/#/fossil/static/faq">https://www,spritpreisrechner,at/#/fossil/static/faq</a> [Retrieved 2024-11-22].

Energimarknadsinspektionen (2023), Konsumenter på elmarknaden. Klagomålsstatistik 2020–2022, R2023:14,

 $\frac{https://ei.se/download/18.12a803c118b6ae2fa4745c9/1699453090834/Konsument-p\%C3\%A5-elmarknaden-klagom\%C3\%A5lsstatistik-2020-2022-Ei-R2023-14.pdf [Retrieved 2024-11-21].$ 

Foros, Øystein, Friberg, Richard, Kind, Jarle Kind, & Steen, Frode (2022), "Mer informasjon om rivalenes priser, mindre konkurranse?", Samfunnsøkonomen, (5).

Horvath, Marco (2019), "Germany's Market Transparency Unit for Fuels: Fostering Collusion or Competition?", *Ruhr Economic Paper* #836.

Konkurrensverket (2023), *Drivmedelsmarknaden – Konkurrens i kristider*, Analys i korthet 2023:1,

https://www.konkurrensverket.se/globalassets/dokument/informationsmaterial/rap porter-och-broschyrer/analys-i-korthet/analys-i-korthet 2023-1.pdf [Retrieved 2024-12-01].

Konkurrensverket (2024a), Algoritmisk prissättning på drivmedelsmarknaden – en litteraturöversikt och analys av svenska förhållanden, Underlagsrapport till rapport 2024:7.

Konkurrensverket (2024b), Bilägares syn på inköp av drivmedel: En undersökning genomförd av Novus på uppdrag av Konkurrensverket, Bilaga 2 till rapport 2024:6, <a href="https://www.konkurrensverket.se/globalassets/dokument/informationsmaterial/rapporter-och-broschyrer/rapportserie/rapport\_2024-6\_bilaga-2.pdf">https://www.konkurrensverket.se/globalassets/dokument/informationsmaterial/rapporter-och-broschyrer/rapportserie/rapport\_2024-6\_bilaga-2.pdf</a> [Retrieved 2024-11-29].

Konkurrensverket (2024c), Hur påverkar konkurrensen priserna på bensin och diesel? Delrapport av uppdrag från regeringen, Rapport 2024:6, <a href="https://www.konkurrensverket.se/globalassets/dokument/informationsmaterial/rapporter-och-broschyrer/rapportserie/rapport 2024-6.pdf">https://www.konkurrensverket.se/globalassets/dokument/informationsmaterial/rapporter-och-broschyrer/rapportserie/rapport 2024-6.pdf</a> [Retrieved 2024-11-24].

Konsumentverket (2023), *Priset är viktigt, men inte allt: Främja konsumenters prismedvetenhet och rörlighet inom dagligvaruhandeln*, Redovisningsrapport 2023:2, <a href="https://stpubshop.blob.core.windows.net/publikationer/redovisningsrapport-2023-2-priset-ar-inte-allt-konsumentverket">https://stpubshop.blob.core.windows.net/publikationer/redovisningsrapport-2023-2-priset-ar-inte-allt-konsumentverket</a> [Retrieved 2024-11-24].

Luco, Fernando, (2019), "Who benefits from information disclosure? The case of retail gasoline.", *American Economic Journal: Microeconomics* Vol. 11, No. 2, 277–305.

Martin, Simon (2023), "Market Transparency and Consumer Search - Evidence from the German Retail Gasoline Market", <a href="https://drive.google.com/file/d/1TZO-q74-N8qX8QT1HRIPO1">https://drive.google.com/file/d/1TZO-q74-N8qX8QT1HRIPO1</a> DJP5ZksS0/view [Retrieved 2024-11-22].

Matpriskollen (2024a), *Koll på kassen!*, <a href="https://matkassar.matpriskollen.se/">https://matkassar.matpriskollen.se/</a> [Retrieved 2024-11-20].

Matpriskollen (2024b), Bättre analys ger bättre affärer, <a href="https://b2b.matpriskollen.se/">https://b2b.matpriskollen.se/</a> [Retrieved 2024-11-24].

Ministero delle Imprese e del Made in Italy (2024), *Osservaprezzi Carburanti*, <a href="https://carburanti,mise.gov.it/ospzSearch/home">https://carburanti,mise.gov.it/ospzSearch/home</a> [Retrieved 2024-11-20].

Montag, Felix och Winter, Christoph (2020), "Price Transparency Against Market Power", SSRN.

Montag, Felix, Sagimuldina, Alina och Winter, Christoph (2023), "Whom to inform about prices? Evidence from the German fuel market", Discussion Paper no, 415, Ludwig-Maximilians-Universität München och Humboldt-Universität Berlin, Collaborative Research Center Transregio 190 - Rationality and Competition

PriceRunner (2023), *Varfor PriceRunner*, <a href="https://www.pricerunner.se/info/why-pricerunner">https://www.pricerunner.se/info/why-pricerunner</a> [Retrieved 2024-11-21].

Prisjakt (2023), Konsumentkompassen Q3 2023, <a href="https://nyhetsrum.prisjakt.nu/posts/pressreleases/konsumentkompassen-q3-2023">https://nyhetsrum.prisjakt.nu/posts/pressreleases/konsumentkompassen-q3-2023</a> [Retrieved 2024-11-21].

Rossi, Federico, and Pradeep K. Chintagunta, (2016), "Price transparency and retail prices: Evidence from fuel price signs in the Italian highway system", *Journal of Marketing Research* Vol. 53 No. 3, 407–423.

Rudholm, Niklas och Lindgren, Charlie (2019). *Prisspridning på e-handelsmarknader med låga sökkostnader*, Konkurrensverket, Uppdragsforskningsrapport 2019:1, <a href="https://www.konkurrensverket.se/contentassets/5470e3e0bf464ef5ba5fdf2bb143bc37/forsk-rapport">https://www.konkurrensverket.se/contentassets/5470e3e0bf464ef5ba5fdf2bb143bc37/forsk-rapport</a> 2019-1-prisspridning-e-handelsmarknader.pdf [Retrieved 2024-11-21].

Rudholm, Niklas, Daunfeldt, Sven-Olov, Li, Yujiao, Lindgren, Charlie och Yella, Siril (2021), *Jakten på det lägsta priset – Hur påverkas handeln av prisjämförelsesidor på nätet?*, Handelsrådet, Forskningsrapport 2021:4, <a href="https://handelsradet.se/app/uploads/2021/09/Rapport-2021\_45.pdf">https://handelsradet.se/app/uploads/2021/09/Rapport-2021\_45.pdf</a> [Retrieved 2024-11-24].

Tandvårds- och läkemedelsförmånsverket (2023), *Uppföljning av tandvårdsmarknaden mellan 2019 och 2022 – Avser tandvård inom statliga tandvårdsstödet*, <a href="https://www.tlv.se/download/18.4dde4fad18affbdfb2978b76/1697183469025/uppfoljning\_av\_tandvardsmarknaden\_mellan\_2019\_och\_2022\_dnr\_2970-2023.pdf">https://www.tlv.se/download/18.4dde4fad18affbdfb2978b76/1697183469025/uppfoljning\_av\_tandvardsmarknaden\_mellan\_2019\_och\_2022\_dnr\_2970-2023.pdf</a> [Retrieved 2024-11-20].

Tandvårds- och läkemedelsförmånsverket (2024), *Så fungerar Tandpriskollen*, <a href="https://tandpriskollen.se/sa-fungerar-tandpriskollen.html">https://tandpriskollen.se/sa-fungerar-tandpriskollen.html</a> [Hämtad 2024-11-21].

Turnbull, Daniel (2023), "What we're doing to provide access to road fuel price data. Competition and Markets Authority", 2023-08-31 <a href="https://competitionandmarkets.blog.gov.uk/2023/08/31/what-were-doing-to-provide-access-to-road-fuel-price-data/">https://competitionandmarkets.blog.gov.uk/2023/08/31/what-were-doing-to-provide-access-to-road-fuel-price-data/</a> [Retrieved 2024-11-25].

Wang, Zhongmin (2009), "(Mixed) Strategy in Oligopoly Pricing: Evidence from Gasoline Price Cycles before and Under a Timing Regulation", *Journal of Political Economy*, 117(6), s. 987–1030.

# Appendix 1 List of items in the market study

Table 3 Written reporting of the assignment

Reporting	Content	Date
Interim report, "How does competition affect the prices of petrol and diesel?" (report 2024:6)	Analysis of competition and review of studies and practices	7 Oct 2024
Appendix 1 to report 2024:6, "Chapter appendices"	Supplementary description of data capture and analysis	7 Oct 2024
Appendix 2 to report 2024:6, "Car owners' views on the purchase of fuel"	Consumer survey conducted by <b>Novus</b>	7 Oct 2024
Appendix 3 to report 2024:6, "Summary of conclusions"	English translation of summary conclusions	7 Nov 2024
Report, "Final report of government assignments on competition in the fuel sector" (report 2024:7)	Final report of the assignment (this report)	2 Dec 2024
Background report for report 2024:7, "Algorithmic pricing in fuel markets"	Analysis of the prevalence and effects of rule- driven and Al-based pricing	2 Dec 2024

# Appendix 2 Hearing on 12 November 2024

The Swedish Competition Authority held a hearing in Stockholm on Tuesday 12 November 2024 at 9–12 noon. The purpose of the hearing was to give the invitees the opportunity to develop their views on some possible remedies, which are described in more detail below.

The participants consisted of representatives from fuel companies, industry organizations and the Government Offices. Some of the invited fuel companies were given speaking time to present their answers to the two questions concerning the proposals described below. The remaining participants were invited to participate in the discussion.

#### **Proposed remedies**

The two remedies that the Swedish Competition Authority sought feedback on from the companies are described below. The remedies are based on measures that have already been implemented in other countries.

1. *Price Comparison Tool, a so-called "Price App"*This proposal entails that all actors selling fuel on consumer markets are required to make current fuel prices for all stations available in real-time (or with minimal delay) in a specific format (e.g., JSON). The aim is for this information to be used by app developers to create price comparison tools that can help consumers find fuel stations with the best prices along their planned route.

A similar proposal has recently been made in the United Kingdom. Price comparison tools are currently available in Germany, Austria, Italy, and Portugal, among others. These tools differ to some extent, but what unites them is the goal of increasing price transparency and helping consumers find fuel stations with the lowest prices.

2. Fuel Price Increases Allowed Only Once per Day

This proposal involves the introduction of a specific price regulation that limits the number of times the fuel price at individual stations can be raised per day to once. No restrictions are proposed regarding price reductions. Price increases do not need to be announced in advance.

This proposal is based on the regulation in Austria and Western Australia. In Austria, the price at a station can only be raised once per day and only at 12:00 noon. In Western Australia, the price at a station must be reported by 2:00 PM the day before and is then valid from 6:00 AM for at least 24 hours. However, note that the proposal made in this section is somewhat less strict than the regulations in these countries.

#### Questions which companies were asked to respond to

The Swedish Competition Authority asked the companies to develop their views on these two remedies separately based on two questions:

- 1. How do you assess that the introduction of each proposal will affect competition in the market? Will it promote competition? Do you see any risks that the effects could be the opposite?
- 2. What consequences do you assess that each proposal could have for your business? These could, for example, include technical costs for sharing station prices, or other consequences.

Regarding question 1, it was important that the companies based their responses on their knowledge and experiences of competition in the market and grounded their answers on what they assessed to be the most likely outcome for the market as a whole. We did not expect, nor did we consider it appropriate, for them to provide a detailed account of how they, as individual companies, would alter their strategies and ways of competing in the market if the proposals were implemented.

#### **Summary of the Discussion**

The participants present were, in addition to the Swedish Competition Authority, representatives from fuel companies, industry organizations, and the government. The participants are anonymized in this summary.

The main points discussed were as follows:

Participant 1 saw that the introduction of a price comparison tool could potentially increase competition in areas where multiple fuel companies have stations, which could drive prices down in those areas. However, in areas where competition is currently limited, such a tool would have little or no effect. Participant 1 also pointed out that a price comparison tool could potentially lead to uncertainty and misunderstandings, as the price shown in the tool might not be valid when the customer arrives at the station.

Participant 1 stated that a price comparison tool could potentially reduce margins in areas where competition is currently higher. It would also incur IT-related costs, as their pricing system would need to be integrated with the platform. They emphasized that the state should bear the cost of the tool, and government financial support would be needed to cover the costs of the price comparison tool.

Regarding the proposal to limit price increases to once per day, Participant 1's view was that it is rare to have more than one price increase per day. Therefore, the effect would be minimal. However, it cannot be excluded that the price increases that do occur could be higher than they would have been without the regulation.

Participant 1 said the regulation would not have any business consequences for them, but time might need to be spent adjusting their pricing system to comply with the regulation.

Participant 2 asked Participant 1 whether they had considered whether a price comparison tool might impact companies with many automatic stations differently than those with staffed stations, where upselling is more important. Participant 1 acknowledged that this should be considered.

Participant 3 began by highlighting that the homogeneous price structure in Sweden suggests functioning competition, even with a small margin. They believed that the benefit of a price comparison tool would not be significant for consumers compared to the cost for fuel companies. Given the small price differences today, the price comparison tool would not influence consumers' choice of station. They had spoken to fuel companies in Germany, which pointed out that the number of price changes had increased since the introduction of price comparison tools there, creating uncertainty for consumers. The cost is also higher for smaller players, which might mean smaller companies have to close stations, thus weakening competition.

Regarding the proposal to limit price increases to once per day, Participant 3 stated that they generally do not raise prices more than once per day. They believe the impact would therefore be very small, and the consequence for them would be minimal.

Participant 4 did not believe a price comparison tool would increase competition. It would only give access to more prices. However, it would increase their costs, and there is a risk that stations would need to be closed. They also emphasized the importance of all companies reporting prices, not just the largest ones.

Regarding the proposal to limit price increases to once per day, Participant 4 said they currently raise prices about once per day. If it becomes a legal requirement, they would need to implement it in their systems to ensure the price is not raised more than once per day, which would incur a cost.

Participant 5 first summarized some of the conclusions in the Swedish Competition Authority's interim report. Participant 5 stated that there is no "rocket" or "feather" behavior, meaning there is no asymmetric follow-up to changes in raw material prices, that the gross profit is approximately one crown per liter, and that a customer survey showed that the station's location is about twice as important as the price when choosing a station, with about 50 percent of customers saying prices influence their choice. Participant 5 argued that these conclusions show that competition in the market is working. They further pointed out the relationship between price reductions and the need for volume growth, stating that with a margin of SEK 1 per liter and a reduction of SEK 0.50, a doubled volume is needed to maintain profitability. A price reduction of SEK 0.90 would require a 10-fold increase in volume. They argued that large volume shifts are rare, which creates

sluggishness regarding price reductions and their levels, leading to greater focus on offers in other areas than just price.

Regarding the introduction of a price comparison tool, Participant 5 stated that the current monitoring of station prices leads to delays in price decisions at local markets. A price comparison tool would instead allow for immediate reactions. They argued that since all players could react directly to each other's price adjustments, opportunities for time-based price differentiation would disappear. The incentives to focus on local price activities would disappear, causing price movements to stall. This means that the introduction of a price app could lead to worse competition. Participant 5 stated that for them, a price comparison tool would entail investments in IT solutions and increased resource needs in both the short and long term.

Regarding the proposal to limit price increases to once per day, Participant 5 said that currently, the recommended price is adjusted based on cost changes, and then prices are adjusted according to local conditions, which means a price increase per day is common. The introduction of price regulation would therefore not change anything, but would only increase administrative work for them. It would lead to more manual handling, which could mean that the number of price reductions becomes fewer than it is today.

Participant 6 asked Participant 5 whether they thought the development in Germany, with multiple price changes per day, could happen in Sweden. Participant 5 responded that they did not think so, and that a price app would have led to price changes stalling. Competition would cease if everyone has information about each other's prices, because the incentive to lower prices disappears. Today, there is a natural price difference, which means there is a point in lowering the price. If everyone has the information simultaneously, no one has an advantage in time.

Participant 2 noted that since discount cards are so common, the effect of a price comparison tool would likely be worse, as the price that customers with discounts pay would not be included in the comparison. Participant 7, however, suggested that skilled app developers should be able to implement a function allowing users to input their discounts into the system.

Participant 8 highlighted that their view is that there is tough and free competition in the fuel market. They are sceptical about a price comparison tool, as consumers do not seem to be particularly interested in looking for stations with lower prices. Participant 8 believed that a price comparison tool would strengthen price harmonization. The cost of a price comparison tool for smaller players also speaks against its introduction. Participant 8 said that since competition, according to the Swedish Competition Authority's interim report, seems to be functioning and the margin is about SEK 1.00, they question the need for a price comparison tool, as its effects are uncertain.

Participant 2 pointed out that in 2008 and 2013, when several countries launched price comparison tools, there were major changes in the economy. Participant 2 wondered if, for example, the 2008 financial crisis had pressured politicians to introduce the tools.



Ringvägen 100 118 60 Stockholm 08-700 16 00 konkurrensverket@kkv.se

www.konkurrensverket.se