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Competition in Energy Markets – Note by Austria

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More documents related to this discussion can be found at www.oecd.org/competition/competition-in-energy-markets.htm

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1. Introduction

1. Against the backdrop of sharply rising prices at petrol stations in Austria and of related complaints following Russia's Invasion of the Ukraine on 24 February 2022, the Austrian Federal Competition Authority (AFCA) initiated a sector inquiry into the Austrian fuel market on 21 March 2022. Such an inquiry can be initiated by the AFCA if circumstances indicate that competition in the relevant market(s) is restricted or distorted.

2. The AFCA sent out requests for information (RFIs) to five major oil companies that both operate ten refineries in and around Austria and operate or control petrol stations in Austria.[1] These refineries have been found to be the most relevant sources of fuel supply for petrol stations in Austria. There is only one refinery in Austria operated by OMV (Österreichische Mineralölverwaltung Aktiengesellschaft – Austrian Mineral Oil Administration Stock Company) near Vienna. In the RFIs, the AFCA asked for production volumes, capacities and operating expenses, among many other things, on a quarterly basis from Q1 2019. Besides that, talks were held with three large fuel wholesalers and petrol station operators that have no involvement in refineries.

3. Besides that, the AFCA gathered publicly available data and acquired proprietary data from Argus Media, an established price reporting agency (PRA) on the global energy and commodities markets. Argus Media provides price information and publishes price assessments on a broad range of energy products and commodities, including petrol and diesel, both of which were relevant for the analyses in the sector inquiry.[2] In particular, prices assessments for petroleum products published by PRAs serve as reference prices in supply contracts between refineries and various customers, including fuel wholesalers and fuel retailers.

4. The AFCA then addressed the following questions to both learn more about the events following Russia's invasion of the Ukraine and, based on that, carry out a competitive assessment in the fuel market in Austria:

1. What are the reasons for the surge of fuel prices at petrol stations following the Russian invasion of the Ukraine?
2. How did profit margins evolve at different stages in the petroleum value chain?
3. Was there a decoupling of fuel prices from crude oil prices?
4. Are there salient clues in the price data that allow us to draw conclusions about competition in the markets for oil refining and fuel retailing?

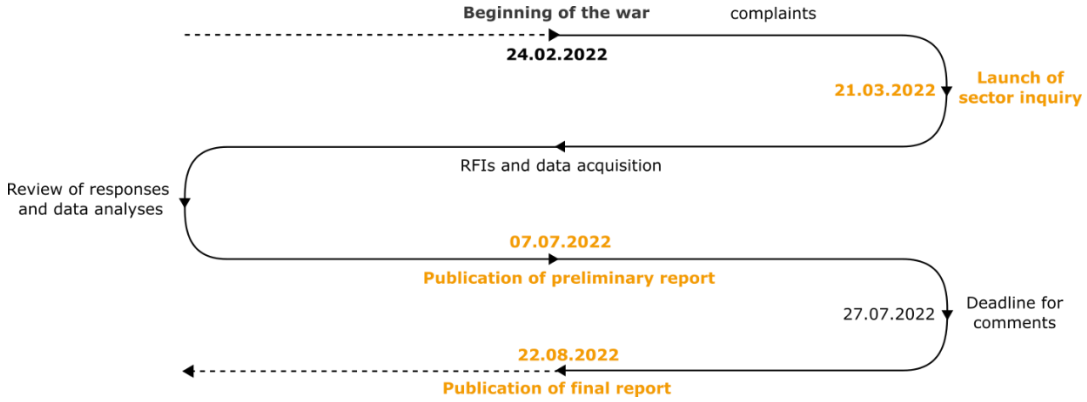
5. Since the economic significance of oil production is negligible in Austria, the AFCA narrowed its focus on two broad stages in the value chain: oil refining and retailing of vehicle fuels (petrol and diesel) for small customers. Recall that there is one oil refinery in Austria near its capital city Vienna.

[1] Besides the only Austrian oil company (OMV), there is BP, Shell, ENI, and JET. JET is a subsidiary of Phillips 66, an American oil company.

[2] Another important PRAs on these markets are Platts and OPIS (Oil Price Information Service).

6. Figure 1 shows the key events and deadlines associated with the sector inquiry. After analysing the responses to the RFIs, the data submitted and the price data mentioned above, the AFCA published a preliminary version of the sector inquiry on 7 July 2022. Due to the economic and social significance of the topic as well as the dynamic geopolitical and economic situations, the AFCA deemed it important to give the market participants concerned the opportunity to comment on the report's findings. Only two market participants submitted comments. Even though they were constructive, they had no impact on the findings in the preliminary report. On 22 August 2022, the AFCA published its final report.

Figure 1: Timeline of the sector inquiry



Source: own representation.

7. The final report now provides the Austrian government, the parliament and the broad public with analyses and facts to allow for evidence-based discussions. Since the situation on international energy and commodities markets is still characterised by high uncertainty and hence high volatility, in-depth analyses are indispensable as a foundation for successful economic policymaking. In the following, the most important facts and analyses will be discussed that the AFCA was able to arrive at in its sector inquiry in the fuel market.

2. Market Conditions

2.1. Fuel retailing

8. On the fuel retailing market, the competitive assessment centers on markets with a geographic scope of 30 minutes travel time around the respective location of the fuel retailer.[3] Within this area, there is relatively stiff competition between fuel retailers, even though it is self-explanatory that the intensity of competition is decreasing with distance.

[3] For rural areas, the German Federal Cartel Office argues that a travel time of 60 minutes at a maximum is often acceptable. See p. 47 in the fuel sector inquiry of the Federal Cartel Office (in German): https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Sektoruntersuchungen/Sektoruntersuchung%20Kraftstoffe%20-%20Abschlussbericht.pdf;jsessionid=6873533FFE32B9A2889DB20B4A518819.2_cid371?__blob=publicationFile&v=5

Given the geographically small scope of these markets, there are numerous local markets for vehicle fuels for small customers in Austria, where more than 3,000 petrol stations with both petrol and diesel fuels on offer are active in total.

9. Between 2017 and 2021, around 50% of all petrol stations in Austria were controlled and operated by major oil companies (OMV, BP, Shell, ENI, or JET). As the total number of petrol stations in Austria has remained relatively stable over the last five years, this share has hardly changed. Independent petrol stations are instrumental for competition. In particular, an unconditional comparison in Austria can show that average fuel prices are systematically lower (about 3-5 cents per litre) in the Western states of Austria (Vorarlberg and Tyrol most notably) than in the Eastern states where the share of independent fuel retailers is significantly higher, on average.

10. Petrol stations in Austria are restricted in their pricing policy by a statutory order from 2011. They are allowed to increase their fuel prices only once a day at 12 noon. However, price reductions are allowed at any time and as often as desired. Fuels tend to be cheapest during the day just before 12 noon.

11. Major-owned and major-operated petrol stations, independent fuel wholesalers and larger fuel retailers negotiate medium-term supply contracts („term contracts“) with refineries or tank farms. These contracts are always negotiated in autumn for the following year. Spot purchases and long-term contracts play a small to negligible role, although independent fuel wholesalers are increasingly using contracts with terms of several years.

12. Smaller fuel retailers usually do not purchase directly from refineries or tank farms, but from wholesalers who are either independent or controlled by majors. They usually do not conclude term contracts. However, the pricing policy of these fuel traders is guided by reference prices that are also found in the term contracts mentioned above. Both independent wholesalers as well as smaller and larger fuel retailers are therefore exposed to fluctuations in the references prices. The exact design of the price formulas in term contracts will be addressed in a subsection below.

2.2. Oil refining

13. In 2021, approximately 93 refineries were active in Europe, of which around 75 can be categorised as „mainstream“ refineries which produce an extensive range of petroleum products (diesel, heating oil, kerosene, petrol, naphtha, propane, bitumen, etc.) in joint production. The remaining 18 refineries specialise in the production of lubricants and bitumen, for example.

14. When one restricts attention to petrol and diesel, about 74 refineries in Europe are in relatively intense competition with each other.[4] This conclusion follows from the geographic scope of the market which the European Commission („EC“) has defined EEA-wide in the past, also pointing to global components due to diesel imports and petrol exports. On the product level, a market for refined products applies which could be further subdivided into a market for ex-refinery sales (primary customers: wholesalers and large resellers) and a market for non-retail sales (primary customers: small independent resellers, independent retailers). In Austria there is only one refinery near Vienna which is operated by OMV. For the geographical area of Austria, ten refineries are generally relevant as sources of fuel supply and are operated by five major oil companies (OMV, BP, Shell, ENI, and JET).

[4] One of the 75 refineries in Europe mentioned above is located on the island of Martinique, an overseas department of France north of the South American mainland.

15. The supply flows from refineries to petrol stations and fuel wholesalers are mainly governed by medium-term supply contracts that were already mentioned above. These contracts are (re-)negotiated annually in autumn and come into force the following year. Besides delivery quantities, pricing formulas are specified. These pricing formulas each consist of a variable component and a fixed component. The variable price component is a price assessment for petrol or diesel offered by a price reporting agency (PRA; usually either Argus Media or S&P Global Platts).[5] Due to reassessments by PRAs, these price assessments fluctuate on weekdays. In contrast, the fixed component in the pricing formula remains unchanged during the year and usually amounts to a few cents per litre. The sum of the variable and fixed components then gives the price that petrol stations and fuel wholesalers have to pay for their purchases of fuels.[6]

16. In contrast to medium-term supply contracts, spot sales or long-term supply contracts play only a minor role for the refineries‘ revenues. However, even for spot sales or in negotiations of long-term supply contracts, the refineries‘ pricing policy will be guided by price assessments offered by PRAs. International PRAs, such as Argus Media, Platts, or OPIS, therefore play a significant role for the business activities and hence profitability of European refineries. Note that price notations from PRAs are also used to determine the price of crude oil.

3. Development of Profitability

17. Changes in profitability were approximated with changes of gross margins (sales prices minus material input) both for petrol stations and oil refineries. For these calculations, the AFCA used petrol station prices provided by the E-Control, the Austrian government regulator for electricity and gas, and price assessments acquired from Argus Media. The crude oil prices (Brent) can be found on the website of the U.S. Energy Information Administration (EIA). The evolution of other variable and fixed costs in refineries, i.e. operating expenses, will be discussed in a separate chapter below, as will be the conclusions that can be drawn for the changes of the refineries‘ actual profit margins after the beginning of the war.[7]

3.1. Fuel retailing

18. The average gross margins at petrol stations in Austria were calculated as the difference between net sales prices (i.e. gross prices net of VAT and energy taxes) and corresponding Argus price notations. The approach chosen by the AFCA for calculating

[5] Instead of „price assessment“ one can use the term „(price) benchmark.“ However, not all price assessments are benchmarks. Only widely accepted and widely used price assessments in the industry should be called benchmarks after all. In particular, the Eurobob oxy price assessment from Argus Media can be regarded as a benchmark for petrol prices in Europe. However, for diesel prices, the five oil companies told the AFCA that they regularly use price assessments from Platts. Therefore, the diesel price assessment from Argus Media that the AFCA used in its analyses is unlikely to be a benchmark in the Europe.

[6] In general, the quantities procured are invoiced in the following month.

[7] In the petroleum industry, a distinction is made between net margins and cash margins. In the case of net margins, the variable operating expenses are deducted from the gross margins, while in the case of cash margins the fixed operating expenses have also been taken into account. The data submitted by the oil companies to the AFCA on operating expenses include both variable and fixed operating expenses.

gross margins largely corresponds to that of Wood MacKenzie, an established consultancy in the energy sector. One difference is the inclusion of freight costs, which the AFCA did not bring into the equation in its report.

19. The calculations show that there is evidence of substantially increased gross margins of petrol stations only for March 2022. In the following months, gross margins were only slightly above their pre-war level. However, other cost components such as increased transport costs would have to be taken into account in a conclusion whether profitability of petrol stations has changed at all and whether increased costs have compensated for the slightly elevated gross margins.[8]

20. Although there are cetainly significant price differences between individual petrol stations, especially between motorway petrol stations and conventional petrol stations, the analysis did not show any significantly different changes in prices or gross margins since 24 February 2022 between and within individual subgroups in the totality of all petrol stations in Austria.[9] Although differences are discernible in the short term, they disappear after a few weeks. In other words, there seems to be a long-term equilibrium relationship between Argus price notations for diesel and petrol and the respective diesel and petrol prices (excl. VAT and energy taxes), respectively.

21. The lack of conspicuities in the evolution of prices and gross margins in the market for vehicle fuels for small customers suggest that a lessening of competition between petrol stations is unlikely to be the cause of the increased fuel prices following Russia's invasion of Ukraine. After a month of substantial uncertainty in March 2022, international price notations and fuel prices at petrol stations (excl. VAT and energy tax) have largely moved parallel to each other in the following months, albeit with greater volatility than before the beginning of the war.

3.2. Oil refining

22. A common and easy-to-calculate indicator for approximating refinery profitability is the so-called crack spread. Crack spreads measure the difference between the selling value of refined products and the crude oil price, using either individual products or product bundles. The calculation of a 3:2:1 crack spread is a common choice for approximating gross margins of US refineries. This measure is based on three barrels of crude oil on the cost side and a product bundle of two barrels of petrol and one barrel of diesel on the revenue side. The result is then divided by the input quantity of three barrels of crude oil to obtain gross margins per barrel.

23. In a representative refinery in Europe, the ratio of diesel to petrol in the product yield is about 2:1. In US refineries, in contrast, the ratio of diesel to petrol is about 1:2 and thus the reverse. For this reason, the AFCA calculated a European version of the 3:2:1 crack spread:

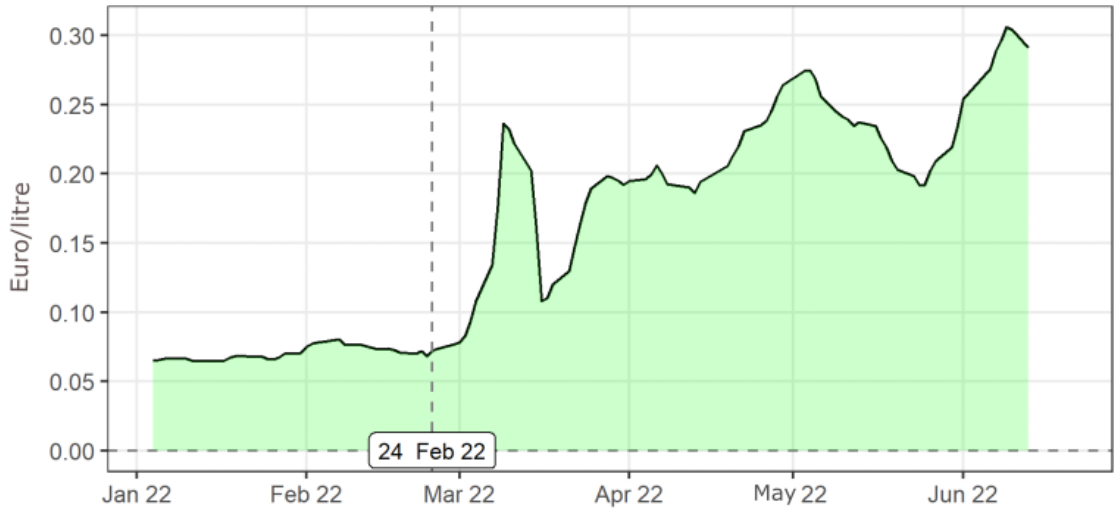
[8] The oil companies interviewed stated that transport costs for fuels before the beginning of the war in Ukraine accounted for between 15 and 20 per cent of the fuel prices at petrol stations in Austria.

[9] Among others, the following groups were considered: major-owned and major-operated petrol stations, motorway petrol stations, petrol stations on the border with Slovenia (20 minutes or 50 minutes driving time away from the border), petrol stations on the border with Hungary (20 minutes or 50 minutes driving time away from the border), petrol stations divided by province and independent petrol stations.

	2/3 × selling price of diesel/barrel
+	1/3 × selling price of petrol/barrel
-	1 × crude oil price/barrel
=	European 3:2:1 crack spread

24. Figure 2 shows the evolution of this European 3:2:1 crack spread for the year 2022. While the gross margins showed no trending behaviour before the beginning of the war in Ukraine, a dramatic spike can be recognized afterwards. In some instances, gross margins quadrupled. On average, a tripling of gross margins can be registered after 24 February 2022.

Figure 2: Gross refining margins in 2022



Source: Argus Media; EIA; own calculations.

25. In summary, the data suggest that the profitability of European refineries has increased significantly since the beginning of the war. The reason for this increase is a decoupling of international price assessments for diesel and petrol, which are used as reference prices in supply contracts, from crude oil prices.

3.3. Operating expenses

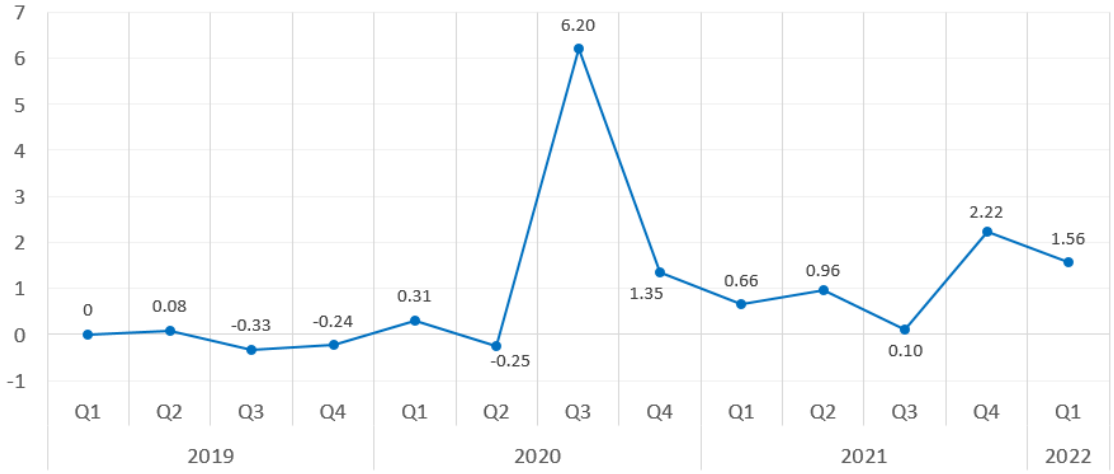
26. The operating expenses reported by the oil companies in the market survey suggest that the refineries' actual profit margins (i.e. gross margins minus operating expenses) have also increased significantly since the start of the war in Ukraine. This conclusion follows against the backdrop of the sharp price increases of natural gas and electricity since 2021.

27. In the first quarter of 2022, wholesale gas and electricity prices increased by approximately 600% and 160%, respectively, compared to the first quarter in 2021.[10] Over the same period, refinery operating expenses, which include gas and electricity costs, increased by less than 1 cent per litre on average (see Figure 3). This shows the secondary

[10] The price of CO2 certificates increased by about 124 per cent from Q1 2021 to Q1 2022.

importance of gas and electricity costs compared to crude oil costs, which increased by about 25 cents per litre over this period.

Figure 3: Cumulative Change of Operating Expenses in Cent/Litre (Base: Q1 2021)



Note: The numbers measure changes in operating expenses compared to the first quarter of 2019.
Source: own calculations base on data from RFIs.

28. In the light of this change in operating expenses, the AFCA concluded that there is unlikely to have been a substantial increase in operating expenses in Q2 2022, as gas and electricity prices only increased by around 40% and 20% in the second quarter 2022 compared to the previous quarter. So while gross margins tripled on average after the beginning of the war, at least a doubling, if not tripling, can be inferred for actual profit margins.

4. Results and conclusions

29. The findings of the AFCA's sector inquiry show that the bulk of the price increases at petrol stations is due to higher international price notations for diesel and petrol. At the same time, significantly higher profit margins of refineries have also been found since the beginning of the war in Ukraine. In the market for vehicle fuels for small customers, the AFCA found substantially increased gross margins only for March 2022, which, however, virtually disappear in the following months and largely returned to their pre-war levels.

30. The analyses of the price and cost data did not reveal any salient clues of price fixing or abuse of market power, neither at the level of fuel retailing nor at the level of oil refining. International price notations are used worldwide as reference prices in supply contracts. These international price assessments can predict the evolution of petrol and diesel prices (excl. VAT and energy tax) with a relatively high precision after the short period of uncertainty and high volatility in March 2022. However, the difference between prices at petrol stations and international price notations features much greater volatility after the beginning of the war than before. Furthermore, there are no conspicuous clues in the prices changes or evolution of gross margins between the various subgroups in the totality of all petrol stations in Austria that would prompt a more in-depth investigation beyond the sector inquiry.

31. After the publication of the preliminary report of the sector inquiry at the beginning of July 2022, the market participants concerned were given the opportunity to submit comments on the preliminary findings by 27 July 2022. Two market participants submitted comments. Even though they were constructive, they did not have any impact on the findings of the preliminary report. The main findings of the sector inquiry were not challenged after all.

32. One of the most important lessons that the AFCA learned in its sector inquiry into the Austrian fuel market was the need of an in-depth understanding of both the geographically wide market for refined products and the significance of international price assessments of various petroleum products for the pricing behaviour in this market. On the one hand, price changes in this market for refined products are effectively passed through to fuel retailers, at least in the long-run, i.e. after a few weeks of adjustments. On the other hand, PRAs seem to play a much more prominent role in the price behaviour of petroleum products than previously thought because PRAs make these prices move that petrol stations ultimately have to incur as costs. Since the market for price information services in the energy and commodities market is highly concentrated, with Argus Media and S&P Global Platts being the dominant agencies, an in-depth inquiry into this market appears to be indispensable in the future in order to better understand how PRAs assess the prices of various products and whether the market for price information services gives rise to competition concerns.