



Republic of Serbia
COMMISSION FOR PROTECTION OF COMPETITION

Report

on the Inquiry into Competitive Conditions on the Cement Market in the Republic of Serbia during the period 2014-2017

(summary)

In this summary report, the Commission for Protection of Competition publishes only aggregate data on quantity indicators into the cement production and sales market, considering that the data submitted by undertakings are protected data within the meaning of Article 45 of the Law on Protection of Competition. Having regard that there are only three active manufacturers on the market observed, the presentation of data in a range of production and sales volumes of individual undertakings operating on the said market would enable the identification of data marked as protected that do not have the status of information of public importance. With regard to the aforesaid points, certain data acquired by the Commission will not be further published.

November 2018

Subject and objective of the inquiry

Pursuant to the provisions of Article 21(1/6) of the Law on Protection of Competition (Official Gazette of the RS 51/09 and 95/13 – hereinafter, the Law), the Commission for Protection of Competition (hereinafter, the Commission) has conducted an inquiry into competitive conditions on the cement production and sales market in the territory of the Republic of Serbia.

The subject of the inquiry is the Gray (Portland) cement market in Serbia. The primary objective of the inquiry was to examine the structure and dynamics of competition on the market concerned.

For the inquiry-related purposes, **the Gray (Portland) cement market** is identified as the relevant product market. Within the Gray (Portland) cement market, the Commission has specifically analyzed the production, import, export, and wholesale segments.

For the inquiry-related purposes, the market of the Republic of Serbia is identified as the relevant geographic market, with the wholesale market also observed at the regional level, that is, (selected) municipalities and cities.

During the inquiry, the Commission has acquired and processed the data provided by the Ministry of Finance-Customs Administration on the cement imports and exports, as well as data supplied by undertakings, cement manufacturers and importers, namely:

- CRH (Srbija) d.o.o. from Popovac,
- Lafarge beočinska fabrika cementa d.o.o. from Beočin,
- "TITAN" d.o.o. from Kosjerić,
- CEMEX SRB DOO from Niš, and
- NEXE BETON DOO NOVI SAD from Veternik.

During the inquiry, the Commission has also contacted companies INTERNORMA d.o.o. from Novi Pazar, "Rex Trans" d.o.o. from Arilje, and TONI COMMERCE 2011 DOO from Bujanovac, who did not provide the requested data. The data on imports and sales volumes of company "Rex Trans" are partially covered by data submitted by company CEMEX SRB DOO, and as such are included in this inquiry.

The undertakings were requested to submit details on capacities, production/imports, and sales on the domestic and foreign markets, consumer structure and cement deliveries per municipalities, as well as on price lists and sales policies for all categories of products. In addition to the listed data, the Commission has also used data of the Statistical Office of the Republic of Serbia, as well as other publicly available data and information.

The inquiry covered a four-year time period, that is, the period from 2014 to 2017, while all data acquired during the inquiry refer to the given time period.

Definition and types of cement

Cement is a hydraulic mineral binder produced by grinding the so-called Portland cement clinker – an artificial stone material made by heating ground limestone and clay at a temperature of about 1350-1450°C. In addition to Portland cement clinker made by calcining a 3:1 mixture of limestone and clay (mass ratio), a small amount of gypsum (up to 5 percent) is also regularly added, which helps to retard the setting time of the cement. Portland cement is characterized by proportionality constant chemical composition. It is a homogeneous product, of a low rate of substitution.

The cement production process is a combination of tradition and modern technology. The first technological stage in the cement production process is the extraction or mining of highly valuable raw materials. Raw materials used to produce cement are iron and aluminum ore, calcium carbonate and silicon dioxide. The latter two are minerals found in limestone and marl. These naturally occurring raw materials are then crushed, adding other minerals in this stage in order to optimize the raw material mixture. These additives may be byproducts of other industries. The raw mixture is then transported to cement plants and stored in hangars.

The next stage is the raw material preparation. Raw materials and corrective components are in this stage crushed, ground, finely pulverized and dried so to extract the crude flour of appropriate chemical composition. Following the dehydration and decarbonization (calcification) and preheating to 1450°C, the sintering, i.e. “cooking” stage in the rotating kiln occurs. In order to reach a high working temperature, the rotating furnace requires a fuel-produced heat from fossil or renewable energy sources. The hot clinker discharge from the kiln is cooled to get a cement clinker, which is then transported to clinker storage facilities for later pulverization.

The cement clinker is pulverized with additives (slag, fly ash, limestone) and gypsum (or only with gypsum) to get a product called the cement, i.e. Portland cement. After pulverization, the cement is stored in silos and later shipped in bulk or bags to consumers.

Cement is an indispensable raw material for all types of civil engineering works, from the building of residential, business and industrial buildings, through the construction of bridges, tunnels and roadways, to underground constructions and groundworks. In general terms, cement can be classified into types and classes. The cement types refer to categories of cement given the mixture and production technology used, while the cement classes indicate mechanical properties of cement. There are two basic types of cement: cement based on Portland cement clinker, and other – special types of cement. They include all types of cement produced by pulverizing Portland cement clinker. The group includes cement that in addition to Portland cement clinker also contains other various additives that affect the properties of Portland cement, depending on the mixture. By increasing additives, the difference between these types of cement and the ordinary Portland cement is more prominent. Although the hardness of these types of cement is initially lower than that of ordinary Portland cement, they mainly exceed their initial level of hardness after 28 days of setting. For that reason, they are in the same class as ordinary Portland cement. Also, the amount of water added differs depending on the additive mixture, especially when pozzolans are added.

Portland cement has no other ingredients except for those found in Portland cement clinker, with the exception of gypsum, which helps to retard the cement setting time. This is undoubtedly the most important type of cement since it represents a basis for the production of the majority of

other types of cement. Globally, the Portland cement production accounts for about 70 percent of the total cement production¹.

Gray cement can be classified into different classes, as defined by the European Committee for Standardization in the European norm EN 197-1, although suppliers believe that different Gray cement classes represent a single product market. The European Commission was consistent in its decisions, claiming that Gray cement of all classes represents a single product market. Gray cement is sold in bags or in bulk. The cement sold in bulk and the cement sold in bags represent a single product market (i.e., the Gray cement market), and are delivered by the same suppliers. They represent different modalities of distribution and not different product features. The bags of about 25-30kg mass are sold in “do-it-yourself” stores and by building material retailers. The cement sold in bulk is usually sold to concrete plants, concrete products factories or big building sites.

In general, all cement manufacturers sell cement both in bags and in bulk, meaning that the competitive landscape is similar. From the supply perspective, bagging facilities are low-tech installations and do not require significant investments. Any cement supplier can supply and deliver the bagged cement with ease.

Cement production

According to available data of the Statistical Office of the Republic of Serbia for the period 2014-2016², the Portland cement production (product code: 2351.12.10) has an upward trend, reaching a 10 percent increase in 2016 against the production output in 2014.

Table 1 - Portland cement production and chain indexes (2014-2016)

Year	Production		Output	
	in tones	chain index	in tones	chain index
2014	1,631,633		1,613,861	
2015	1,654,390	101	1,667,004	103
2016	1,800,805	109	1,774,404	106

Source: Statistical Office of the RS

In addition to publicly available data of the Statistical Office of the Republic of Serbia on the cement aggregate production, the Commission has also acquired data from undertakings on the cement production output during the observed period.

There are three cement manufacturers in the territory of the Republic of Serbia. Company CRH Srbija (former Holcim)³ manages the cement factory in Popovac, located 160 km southeast of

¹ Source: <https://www.wikipedia.org/>

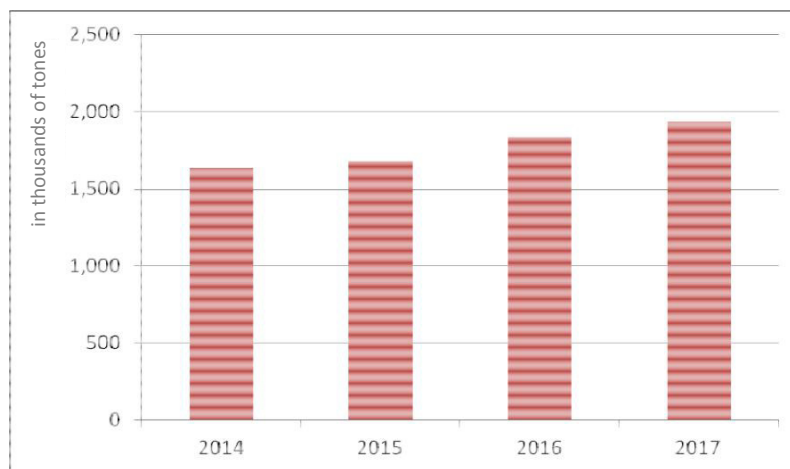
² Production of industrial products from the Annual industrial survey – PRODCOM.

³ In line with the company’s data, CRH has taken over the business in Serbia as of August 1, 2015.

Belgrade, company Lafarge manages the cement factory in Beočin, located 95 km north of Belgrade, while company Titan owns the cement factory in Kosjerić, located about 135 km southwest of Belgrade. The distance between the Popovac and Beočin cement factories is about 240 km. The Kosjerić cement factory is about 180 km and 190 km away from the Lafarge and Holcim cement factories, respectively. All three cement manufacturers predominantly or exclusively produce Gray cement.

According to data on the Gray (Portland) production output submitted by undertakings, the total cement production in Serbia in the period 2014-2017 has recorded an upward trend at the average annual rate of 6 percent, making the 2017 production output 19 percent higher than in 2014.

Chart 1 – Cement production in Serbia (2014-2017)



Source: Economic Analyses Division calculations, based on data provided by undertakings

When observed in terms of installed cement production capacities, the cement market in the Republic of Serbia is characterized by the oligopoly market structure of a high concentration ratio, with the Herfindahl–Hirschman index of 3576.

On average, cement manufacturers use about 50 percent of the installed capacity. During the observed period, the capacity utilization rate among all undertakings was the lowest in 2014 when the production was at a minimum, only to recover to a certain degree in the following years among all undertakings, resulting in the average utilization rate of 56 percent in 2017.

Cement imports

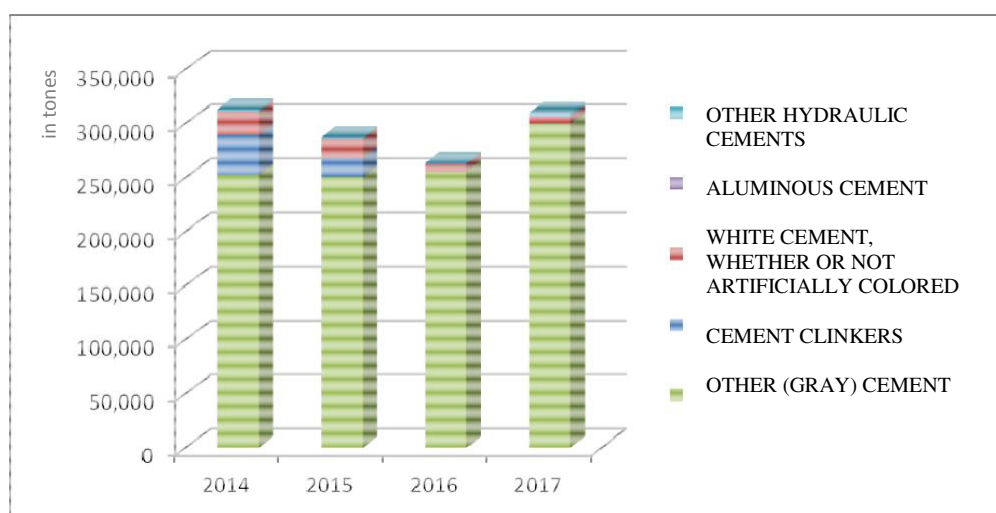
Pursuant to the customs classification, the import of cement is covered by the following tariff codes:

- 2523 10 00 00 - Cement clinkers;
- 2523 21 00 00 - Portland cement - White cement, whether or not artificially colored;
- 2523 29 00 00 - Portland cement – Other (Gray);

- 2523 30 00 00 - Aluminous cement;
- 2523 90 00 00 - Other hydraulic cements.

The import classified by tariff code 2523 29 00 00, relating to Gray cement from Portland cement clinker, dominates in the total cement imports. The Gray cement import amounts to about 97 percent (in volume) and about 93 percent (in value) of the total cement imports in 2016 and 2017, unlike in 2014 and 2015 when the Gray cement imports share, in volume and value, was balanced and amounted to about 80 percent and 87 percent in 2014 and 2015, respectively.

Chart 2 – Cement imports - the structure (2014-2017)



Source: Economic Analyses Division calculations, based on data from the Customs Administration

Relative to Gray cement, the White cement imports are negligible, with only 2 percent (in volume) and 5 percent (in value) of the total imports in 2016 and 2017. The White cement imports were slightly more prominent in 2014-2015. One of the potential reasons for more significant imports was certainly the lower price of White cement recorded during this period. During other observed years, the average import price of White cement was double the value of average import prices of Gray cement.

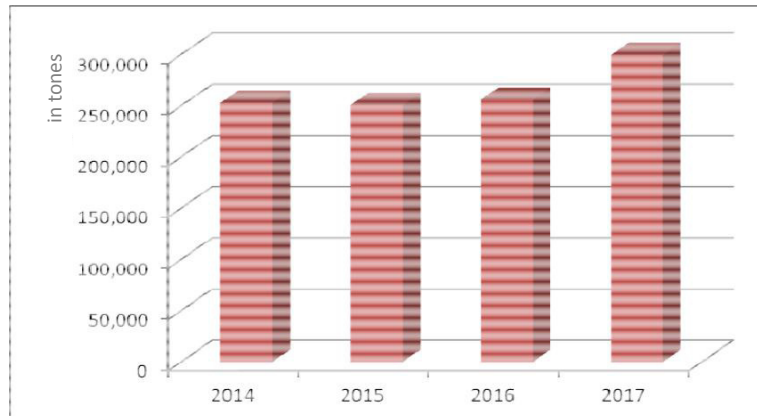
Table 2 – Average import price of White and Gray cement (EUR/t)

Cement type per tariff codes	2014	2015	2016	2017
WHITE CEMENT, WHETHER OR NOT ARTIFICIALLY COLORED	86.9	90.8	153.0	152.4
OTHER (GRAY) CEMENT	71.8	69.3	66.5	70.4
Average import price ratio	1.21	1.31	2.30	2.17

Source: Economic Analyses Division calculations, based on data from the Customs Administration

Given that Gray cement is a dominant component of the total cement imports, as well as the considerable price difference, the inquiry hereinafter takes the data on Gray cement imports, tariff code 2523 29 00 00, as the economic indicator of imports.

Chart 3 – Grey cement imports (2014-2017)

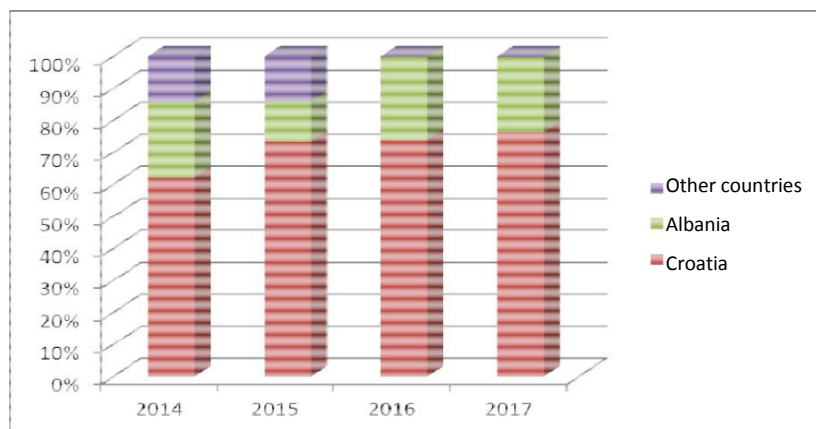


Source: Economic Analyses Division calculations, based on data from the Customs Administration

The imports of Gray cement have recorded an upward trend during the observed period, despite a slight 1 percent decrease in 2015. In 2017, the cement imports have reached 300 thousand tonnes, which is an increase of 19 percent relative to imports achieved in 2014.

The cement importers create competitive pressures on domestic cement manufacturers by importing cement manufactured in the neighboring countries, which may be the result of a relatively close proximity of those manufacturing facilities to the borders of the Republic of Serbia, that is, owing to the economic viability of cement transportation schemes. The cement is predominately imported from Croatia⁴ (about 75 percent) and Albania⁵ (about 25 percent), while the import from other countries is marginal, not exceeding 1 percent of the total imports in 2016 and 2017.

Chart 4 - Imports by country of origin (2014-2017)



Source: Economic Analyses Division calculations, based on data from the Customs Administration

⁴ Nexe – Našicecement plant – Našice, Cemex - Solin

⁵ Cement plant owned by Greek “Titan”, Fushe Kruje - Tirana

During the observed four-year period, the imports from Croatia and Albania have increased 46 percent and 18 percent, respectively.

Table 3 - Average import price by country of origin (EUR/t)

Country of origin	2014	2015	2016	2017
Croatia	75	71	69	72
Albania	63	61	59	60
Total	72	69	67	70

Source: Economic Analyses Division calculations, based on data from the Customs Administration

Cement originating from Croatia was also the most expensive during the entire observed period, 3-4 percent more expensive relative to the average import price, and 16-20 percent more expensive than cement originating from Albania.

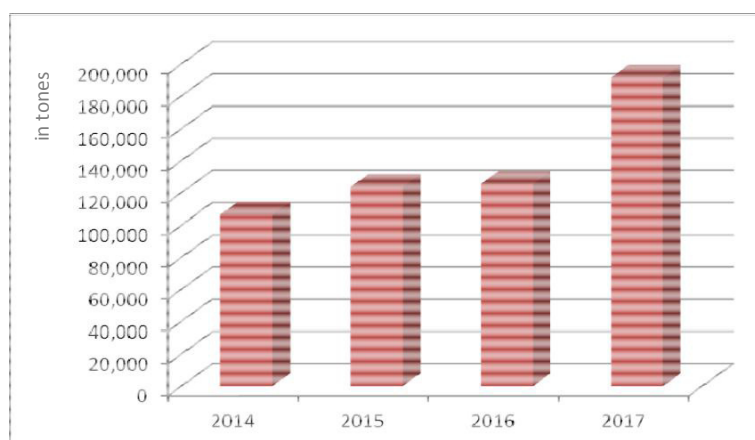
Cement exports

With regard to the total cement exports, the export classified by tariff code 2523 29 00 00 relating to Gray cement from Portland cement clinker is the dominant export.

During the period from 2014 to 2016, the export of Gray cement constituted almost 100 percent of the total cement exports by volume and value, while the cement exports in 2017 classified under tariff code 2523 10 00 00 (cement clinkers) reached 8 percent of the total export volume and 4 percent of the value. Other types of cement have a negligible share in exports. Considering the dominant share of Gray cement in the total exports, the inquiry hereinafter will be focused on Gray cement from Portland cement clinker only.

During the observed period, the total cement exports showed an upward trend, increasing by 80 percent in 2017 relative to the exports in 2014. The significant export increase was achieved in 2017, when the export volumes were higher by 53 percent relative to the preceding year, 2016.

Chart 5 - Gray cement exports (2014-2017)



Source: Economic Analyses Division calculations, based on data from the Customs Administration

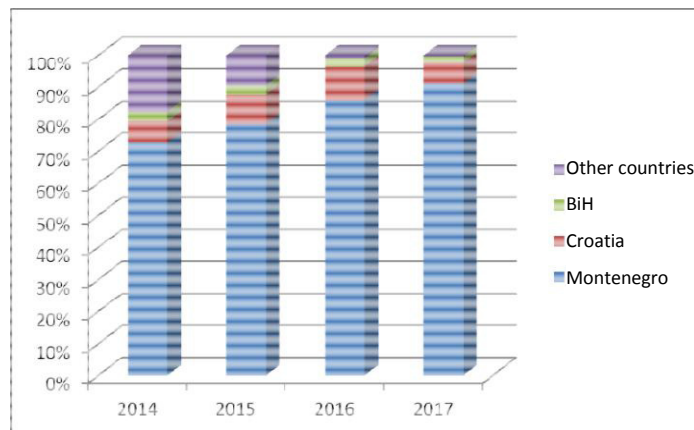
In value terms, the export of Gray cement continues with an upward trend until the end of the observed period. During 2017, the cement exports increased by 73 percent relative to the base year, 2014.

The average export price of Gray cement during the observed period had a relatively stable trend, varying between 64 and 69 EUR/t.

Cement is predominately exported to Montenegro, which is a growing trend given that during the four-year period (2014-2017) the exports to this country have increased by 125 percent. The cement exports to Montenegro accounted for between 73 percent and 91 percent in terms of the total export volume, and between 79 percent and 90 percent of the total export value.

The exports to Croatia in 2016 have exhibited a positive growth of 84 percent relative to 2014, reaching 10 percent of the total export volume of cement in that year, followed by a slight export decline in 2017.

Chart 6 – Exports by country of destination (2014-2017)



Source: Economic Analyses Division calculations, based on data from the Customs Administration

During the observed four-year period, the average export price for the largest buyer of the Serbian cement, Montenegro, showed a slight downward trend, reaching 66 EUR/t in 2017. The similar trend and the level of prices are seen in the case of Croatian exports also, while the exports to Bosnia and Herzegovina remained considerably more expensive throughout the entire observed period, but with a price stability at approx. 82 EUR/t.

Table 4 – Average export price by country of destination (EUR/t)

Country of destination	2014	2015	2016	2017
Montenegro	71	68	67	66
BiH	81	82	82	82
Croatia	71	72	68	67

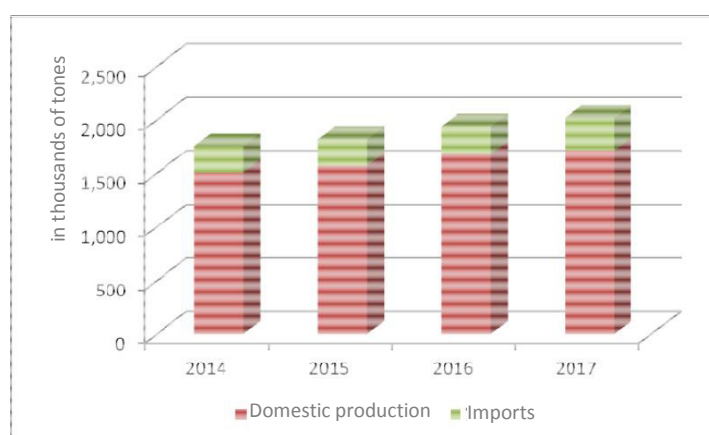
Source: Economic Analyses Division calculations, based on data from the Customs Administration

Cement sales

The total sales of domestically manufactured cement on the Serbian market have mirrored the production trend throughout the entire observed period, recording a 14 percent increase in 2017 relative to the sales in 2014. By comparing the sales data of domestic manufacturers against the aggregate production data, it can be concluded that domestic manufacturers put on the Serbian market about 90 percent of the total production output.

In addition to domestically manufactured cement, the aggregate supply of cement on the Serbian market also includes the imported cement. Assuming that the entire imported quantities are put on the domestic market in the year of import, the cement of foreign origin is increasingly acquiring a growing presence on the domestic market, accounting for 15 percent of the total sales in 2017.

Chart 7 – Cement sales on the Serbian market, domestic production and imports



Source: Economic Analyses Division calculations, based on data provided by undertakings

The market shares by sales of cement manufacturers are relatively stable and do not deviate considerably from their respective market shares by production.

Relative to the total domestic sales, the intragroup sales are relatively small, indicating that the value of sales of cement manufacturers predominately comes from the third-party sales.

In addition to data provided by cement manufacturers on the domestic sales and data supplied by the Customs Administration on the aggregate exports, during the course of the inquiry the Commission has also contacted the largest cement importers. Two out of a total of five importers contacted with the request for the provision of information have provided the requested information, namely companies CEMEX SRB DOO NIS⁶ and NEXE BETON DOO NOVI SAD. Data on the domestic sales provided by said importers are used to calculate their respective market shares by sales, while in the case of other importers, in the absence of more precise data, it is assumed that the entire imported quantities are sold in the year of import.

In such manner, the Commission has ensured the best possible assessment of the Gray cement market size and market shares of manufacturers and importers during the period 2014-2017. By comparing the market shares of manufacturers assessed in this manner with the market shares

⁶ The company also provided data on quantities directly sold by company CEMEX Hrvatska d.d. to buyers in the territory of the Republic of Serbia.

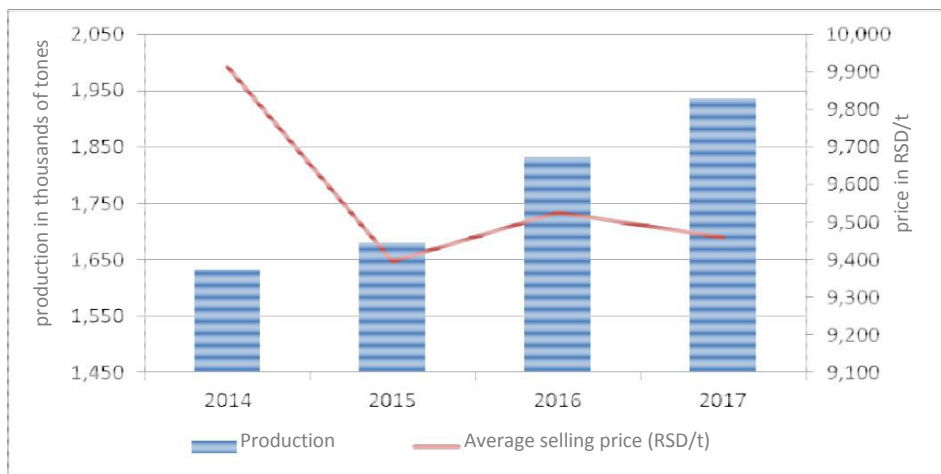
calculated when assuming that the entire imported quantities are sold in the year of import, we were able to conclude that deviations are minimal.

The average selling price of Gray cement is calculated as the ratio between the total sales values and the total sales volumes. The average selling prices showed a downward trend during the observed four-year period, with the exception of 2016 when a slight price increase has occurred, ranging between 1-4 percent relative to the previous year, 2015. When compared to the beginning of the observed period, a relatively uniform decrease of the average selling price was recorded in 2017, ranging between 2-5 percent.

When comparing the average selling price trends of all three manufacturers and two importers, it can be seen that prices have level off the most in nominal terms during 2015, when manufacturers had almost identical prices, later followed by divergences in price trends and price levels.

The next step in the injury was focused on observing the comparable trends in the total cement production outputs and the average selling price, calculated as the ratio between the total sales value and the total sales volume in the respective years.

Chart 8 – Trend in the production volume and average manufacturer selling price (2014-2017)



Source: Economic Analyses Division calculations, based on data provided by undertakings

The left Y-axis shows the Gray cement production in thousands of tonnes, while the right Y-axis shows the average manufacturer selling price in RSD/t. We can note that the production increase during the observed four-year period by 19 percent was followed by a 5 percent decrease in the average selling price.

The undertakings supply both end-users and wholesalers with cement. The end-user category includes concrete plants, construction firms, manufacturers of concrete elements and other products, while other buyers purchasing the cement for resale purposes are treated as distributors, that is, wholesalers.

During the observed four-year period, the average cement price on an ex-works basis is reduced in the range of 2-6 percent. The more notable decrease in the average selling prices is seen in 2015, with about 10 percent price decrease relative to the previous year, 2014. A “slight” recovery of cement prices is noted during 2016 and 2017, but they still are below the 2014 levels.

Recognizing that importers do not have an ex-works price and that their selling prices include all associated costs of transportation to the delivery point(s), the Commission then simply compared the average selling prices for deliveries to the selected (major) cities or municipalities. The average selling prices for each city or municipality are calculated by dividing the total delivery value for a given city/municipality by the total delivered volumes. The conducted analysis has shown that price differences are not expected. For example, the price of individual manufacturers that also includes the delivery costs on an ex-works basis for the City of Belgrade was in certain years lower than the ex-works price, which was particularly the case in 2014 and 2017. Also, the average price on an ex-works basis for buyers in the Belgrade region was often lower than the average selling price on the identical parity basis in other municipalities or cities. This can be partially explained by the fact that the competition is more pronounced in the Belgrade region than in other regions, inter alia, owing to the fact that distance of manufacturing plants to Belgrade does not vary considerably, ranging from 95-167 km, and that all undertakings deliver in the Belgrade region.

Towards establishing the degree of interconnection between the delivery point and selling price, the Commission then conducted a correlation analysis of the average selling prices on an ex-works basis for CIP buyers and the distance to delivery points. The average selling price for each delivery point was based on data provided by manufacturers on delivery volumes and values per individual Serbian municipalities, including deliveries on factory grounds. This is followed by the delivery point distance calculation for each manufacturer using the fastest route as presented on the website www.google.rs/maps, measured in kilometers⁷.

The correlation coefficient is a measure of the strength (degree) and the direction of a relationship between two variables. The correlation coefficient value is measured on a scale that varies from (+1) indicating a perfect positive correlation, to (-1) which indicates a perfect negative correlation. Values close to zero indicate that variables have a very weak correlation, while a value of zero indicates that there is no relationship between the two variables.

The conducted analysis has not shown that the distance to delivery points and the selling prices for CIP buyers are highly correlated values, indicating that more remote buyers do not pay more expensive cement prices by default, and vice versa. At the same time, individual correlation coefficients do not exceed 0.4, which is indicative of the weak correlation relationship and which could be here interpreted as the absence of considerable correlation between the distance to delivery points and the selling prices for CIP buyers.

Analysis of sales policies

The cement sales policies represent instructions and guidelines for setting cement prices and are used to more closely define the sales activities of companies. Two out of five undertakings included in the inquiry have submitted their respective sales policies, while the commercial policy in the case of other undertakings is regulated by official price lists and/or separate decisions.

By analyzing information on sales policies, price lists and supporting decisions of undertakings included in the inquiry, it can be concluded that invoice price (of manufacturers) in most cases includes the following elements:

- 1) base price (price on an ex-works basis as per official price list)
- 2) fees,
- 3) rebates, and
- 4) transport.

⁷ The distance of 0 km is used for deliveries on factory grounds.

Rebates are granted on several grounds and in principle can be grouped as:

- rebates based on buyer profiles via market segmentation (discounts based on a company's marketing and sales strategies, and most often segmented per consumption channels – distributor, civil engineering, concrete plants, powdery raw materials, etc., as well per packaging forms, cement purchased in bags or in bulk);
- regional rebates (discounts approved to individual municipalities or regions, granted pursuant to the specific market conditions prevailing in a particular region);
- project rebates (discounts for project-related buyers, perceived by a company to carry a certain weight);
- promotional or special rebates (discounts approved for promotional purposes, with time and territorial restrictions);
- rebates on lump sum advance payments, etc.

The quantity rebates can be annual, quarterly or monthly, and can also be provided in a form of the corresponding quantities of cement or through funds recovery claimed by buyers in the amount of granted discount. The quantity rebates are most often presented through rebate scales as percentages or in EUR/t, and can be granted as one-time rebates and/or lifted by separate decisions enacted by companies.

Project rebates can be further classified as per type of project, on agriculture, energy, infrastructure, industrial projects and as per project size, under which separate rebate scales per cement consumption scale are presented.

Conclusion

The inquiry into the Gray (Portland) cement production and sales market is conducted with the objective to examine the structure and dynamics of the market concerned. For the inquiry-related purposes, the Commission has acquired data provided by undertakings, cement manufacturers and importers, relating to the period 2014-2017.

The finalized inquiry shows that the cement production in the Republic of Serbia during the observed period has experienced growth at an average rate of 6 percent per year, resulting in a 19 percent increase in the total production in 2017 relative to the production output in 2014. The market structure and market shares have remained relatively stable during the observed period.

The cement plants on average use about 50 percent of installed capacity. The capacity utilization rate during the observed period of all cement plants was the lowest in 2014. Thereafter, the capacity utilization rate increase became notable in the case of all undertakings, resulting in the average capacity utilization rate of 56 percent in 2017.

The cement of foreign origin is increasingly more represented on the domestic market, accounting for 15 percent of the total sales. The cement imports have recorded an upward trend during the entire observed period, reaching a 19 percent increase relative to the imports in 2014. Cement is predominately imported from the neighboring countries, Croatia (about 75 percent) and Albania (about 25 percent), while the imports from other countries remained marginal, not exceeding 1 percent.

The total cement exports during the observed period have also shown an upward trend, growing by 80 percent in 2017 against the export levels in 2014. Cement is predominately exported to

Montenegro, showing a rising tendency, while far fewer quantities are exported to Croatia and BiH.

When comparing the average selling prices on an ex-works basis to the average selling prices on an ex-works basis for CIP buyers for specific delivery points (municipalities), we have established that price differences are not always expected. We have noted that the price of individual manufacturers that also includes the delivery costs on an ex-works basis for the City of Belgrade was in certain years lower than the ex-works price, which was particularly the case in 2014 and 2017. Also, it can be noted that the average price on an ex-works basis for CIP buyers in the Belgrade region was more often lower than the average selling price on the identical parity basis in other municipalities or cities.

During the period 2014-2017, the average cement price on an ex-works basis is reduced in the range of 2-6 percent. The price drop was foreseeable given the increase in the total cement production volumes during the observed period. The production increase during the observed four-year period by 19 percent was followed by an average selling price decrease of 5 percent.

Considering the cement industry significance for the development of civil engineering and overall industrial development, as well as conclusions of this inquiry, the Commission will continue to monitor the behavior of this market's undertakings with due care, and circumstances potentially indicating the infringement of the Law.

Commission for Protection of Competition