



# GLASS AND CERAMIC INDUSTRY OF THE CZECH REPUBLIC 2018

AUGUST 2019

# Introduction

Dear friends and colleagues,

Glass, china and ceramics are undoubtedly excellent materials. When the industrial production is rational and in accordance with BREF, they do not damage our surroundings. On the contrary, it was shown and calculated several times, that they are materials contributing to improvement of our environment. Another bonus is, that products made of them are recyclable in a large extent. And more, if a designer feeling is involved to the final production process, they decorate our surroundings. They get on well and offer a lot of useful properties. They accompany us almost at every step not only in privacy of our homes and work places, but also in streets. The former euphoria from various plastic substitutions is in many cases exhausted. And therefore, it is worth thinking intensively about these fantastic materials, their production, properties and ways to everyday life.



As in previous years, the Association presents last year results of this industrial branch for comparison, evaluation and considering. These results are distinctly processed to tables, graphs and texts for making complete and understandable picture of Czech glass, ceramics and china. The last year data are more or less positive and they have a growing tendency. They show that Czech glass and ceramic industry has the right direction and that it strengthens. Czech glass, china or ceramics and fashion jewellery are represented in all continents and they make a good mark not only to Czech producers but also to the whole country.

A barrier to progress is, especially, manpower shortage and growing price of work, connected with this and also impacts of geopolitical decisions and realizations of law and new measures, especially all-European. However, for one it is a barrier, for the other it means an occasion. And so, seize the opportunity. I believe that the year 2018 will be better again for our companies and for our industry, in spite of a fact that the barriers did not fall, but other barriers appeared.

I wish you only positive thoughts while reading the Annual Report 2017.

Ing. Petr Mazzolini  
prezident  
Asociace sklářského a keramického průmyslu ČR



ASOCIACE SKLÁŘSKÉHO  
A KERAMICKÉHO PRŮMYSLU ČR  
Association of the Glass and Ceramic Industry of the Czech Republic

## **Board**

### **President**

Ing. Petr Mazzolini

### **Vice-presidents**

Ing. Radislav Feix, Ph.D., Ing. Milan Kucharčík, Ing. Jaroslav Seifrt

### **Members**

Ing. Petr Beránek, Ing. Jan Brázda, Luis Sergio Castro Landa, Ing. Lubomír Hnilička, Ing. Petr Hübner,  
Ing. Jan Štefl, Ing. Pavel Wurzel

## **Supervisory board**

### **Chairman**

Ing. Jiří Mašek

### **Members**

Doc. Ing. Alexandra Kloužková, CSc., Ing. Tomáš Stloukal

# TABLE OF CONTENTS

## Introduction

1. Association of the Glass and Ceramic Industry of the Czech Republic
2. Structure of the glass and ceramic industry in the Czech Republic
3. Position of the glass and ceramic industry in the Czech Republic
4. Development of the glass and ceramic industry in the period from 2012 to 2017
5. Export and import according to production branches in the period from 2012 to 2017

# INTRODUCTIONS

The Annual Report gives in its introduction part an overview on the position of the glass and ceramic industry within the processing industry of the Czech Republic, its structure and development in the period from 2012 till 2017. A survey of export and import according to individual production branches creates a part of this Report. Further on, an evaluation of the activities of the Association of the Glass and Ceramic Industry of the Czech Republic in the past period is given, as well.

Data processed in the Annual Report are based on data of the Czech Statistical Office (valid at the date of June 30, 2018). These data are completed with information gained from annual reports of the Association members.

Classification and terminology of the processing industry used in the Chapter “Position of the glass and ceramic industry in the Czech Republic” are taken from the Czech Statistical Office.

Time development lines compared in the Chapter “Development of the glass and ceramic industry” are given for the period from 2012 till 2017.

The glass and ceramic industry is in the submitted Annual Report mostly investigated and described separately, i.e. in seven so-called groups. These groups are created by related glass and ceramic production activities as far as technology and marketing. This methodology corresponds to a method of the statistical statement in the Czech Republic.

- **Flat glass** (unfinished and finished flat glass)
- **Container glass** (bottles, preserve glass jars, other glass containers)
- **Glass fibres** (reinforcing/textile fibres, insulating glass fibres)
- **Other glass** (special glasses - laboratory and laboratory apparatus glass, tubing, glass TV components, technical spheres, glass industrial apparatuses, protective welding glass, optical glass, glass blocks, fashion jewellery glass, etc.) **and lighting glass**
- **Utility glass** (drinking glass, glass for household, decorative glass, art glass, etc.)
- **Household china and ceramics** (china ware for household and decorative china, ceramic ware for household, decorative ceramics)
- **Technical ceramics and sanitary ware** (insulators, laboratory china, ceramic products for sanitary purposes, products for technical purposes)

The development in the rest groups created by the production of machinery, equipment and services for the glass and ceramic industry, is not investigated in the Annual Report as the whole. From the point of view of the statistical statement the activities connected with this group are investigated in a number of other subsections of the processing industry, and so it is not possible to process and compare them, especially numerical data, reliably.





## THE ASSOCIATION OF THE GLASS AND CERAMIC INDUSTRY OF THE CZECH REPUBLIC

### The Association of the Glass and Ceramic Industry of the Czech Republic

The Association of the Glass and Ceramic Industry of the Czech Republic is a member of the Confederation of Industry of the Czech Republic and a member of the Glass Alliance Europe.

The Association of the Glass and Ceramic Industry of the Czech Republic (Association) was established in 1990 as an interest group of producers of flat, container, technical, utility and lighting glass, glass and mineral fibres, household china, household ceramics and sanitary ware, trade companies, suppliers of machinery, machine and technological equipments and services, specialized schools, research institutes and publishers of specialized journals. The members of the Association are the Czech Glass Society and the Union of Glass and Fashion Jewellery Producers. A separate part of this chapter is devoted to them.

The Association had 45 members at the date of May 31, 2017. The activities of the Association were based on the plan accepted by the general meeting of the Association on May 24, 2017. Preciosa

Ornela, a.s. and the Union of Glass and Fashion Jewellery Producers became members of the Association in the first half of 2017.

The activities of the Association are focused, especially on the promotion, assertion and defence of interests and demands in relation to the bodies of the state administration, on organizing a mutual cooperation of members in solution of common problems, on rational utilization of local raw materials, on environmental problems solution, on ensuring collective negotiations with respective trade union and making collective bargains, on ensuring a database for strategic decisions of its members, on assistance in search of foreign partners, on coordination of research and development in the glass and ceramic industry in cooperation with specialized schools and workplaces, on expert and financial support in publishing specialized literature and journals, and also on solution of specialized education problems.

## Activities of the Association in 2017

The Association collaborated on national level on fulfilling the policy statement of the Confederation of Industry of the Czech Republic (Confederation of Industry) and with the Czech Glass Society on the promotion of interests directly connected with the glass and ceramic industry. Within the European Union the Association collaborated with the Glass Alliance Europe (GAE) on the promotion of interests of the glass industry and in the framework of its possibilities also on the promotion of interests of other associated branches and with other professional groups.

The plan suggestion for 2017 followed the activities in 2016. The activities in 2017 were divided to the following themes: "Support of the glass and ceramic industry competitiveness", "Environment", "Collective negotiations of higher degree", "Education (apprenticeship, secondary and university)", "Social dialogue", and "Services and information". Support of research and development and lobbying for the glass and ceramic industry interests and activities promoting the Association and its members, were an important part of activities of the Association.

**The Association took part in a number of projects in 2017:** National System for Qualification (NSK2), Interconnection of national, sector and regional social dialogue in the Czech Republic, Education and collaboration among social partners (as a partner with the Trade Union of Employees of Glass and Ceramic Industry and China (Trade Union).

## Support of competitiveness of the glass and ceramic industry

The aim was to support competitiveness of glass and ceramic industry products on inland and international markets, and with regard to the possibilities of the Association to collaborate with the Confederation of Industry. Specific problems of the glass and ceramic industry were solved directly with the Ministry of Industry and Trade, the Ministry of Environment and further bodies of the state administration and institutions of the European Union, e.g. the European Chemical Agency (ECHA) and the European Commission.

The Association in cooperation with member companies and within the membership in the Glass Alliance Europe (GAE), and also on national level with the Confederation of Industry, **took a firm stand actively against changes and elimination of the glass and ceramic industry from the list of sectors endangered by carbon leakage after 2020.** (Definition: Carbon leakage is a term describing a situation, which can appear when tradesmen, due to high expenses on climate protection, transfer their production to other countries with free access to greenhouse gases and emissions.)

The Association carried out a **systematic dialogue with the Ministry of Industry and Trade and the Ministry of Environment** on general support of the glass and ceramic industry, especially in the area of competitiveness support.

The Association supported providing the **working force, development of professional education** and motivation of working force through social dialogue and through all further available means.

The Association established **Expert groups** for the promotion, assertion and defence of interests of the glass and ceramic industry. They discussed about up-to-date problems regarding the glass and ceramic industry. The aim of expert groups is to define the attitude to basic themes influencing the position of the Association members, and, subsequently, in cooperation with the Association secretary, to stand up for their promotion within the state authorities, the Confederation of Industry and the Glass Alliance Europe and European Union bodies.

In the framework of the project Education and collaboration among social partners the Association realized a number of trainings focused to the competitiveness support of companies in this sector.

Personal staff of groups was ensured in cooperation with all members.

## Social dialogue

For fulfilling of employers' functions and keeping the social dialogue the Association managed the Collective agreement of higher degree with representatives of the Trade Union. Further on, the Association collaborated with the Confederation of Industry, the Ministry of Industry and Trade and the Ministry of Labour and Social Affairs.

In 2017 the negotiation on the Amendment No. 1 to the **Collective agreement of higher degree to the period from 2017 to 2018** with the Trade Union proceeded. The Association took part in the project of the Confederation of Industry "Interconnection of national, sector and regional social dialogue in the Czech Republic" (NORD); KA1 **Bipartite negotiations on sector level**.

Through the working groups of the Glass Alliance Europe the Association shared in the attitude within the European Union to the problems of the **respirable crystalline quartz**.

With aim to increase knowledge on social dialogue and strengthening the cooperation between employers and employees the Association entered as a partner of the Trade Union to the Request for support of the project **Education and cooperation between social partners** and transfer of knowledge and experience from abroad. This project was accepted and realized in the period from June 2016 till May 2018. In 2017 the secretary of the Association was actively involved in the preparation and **organization of eight two-day trainings** during the whole year.

## Education (apprenticeship, secondary and university)

The Association is supporting the development and ensuring the quality of professional education on all levels.

In the area of education **problems regarding professional education system** for the glass, jewellery and ceramic industry are continuously solved. It was necessary to interest employers, as well.



The Association collaborated with the consortium of the Confederation of Industry, the Chamber of Commerce and TREXIMA, s.r.o. on the **National Qualification System (NSK 2)**.

## Environment

The Association cooperated with the Glass Alliance Europe, the Confederation of Industry, the Ministry of Environment and the Ministry of Industry and Trade and took part in the activities of respective working groups.

In cooperation with the Glass Alliance Europe the Association took part on national level in support of interests of the Czech glass and ceramic industry within the European environmental policy (REACH, EU ETS, IPPC, etc.) and on making favourable legislation surroundings.

In the framework of activities regarding EU ETS problems (emission permits) the Association joined to the common Stand on the processing industry of the Czech Republic to the EU ETS reform appointed primarily to members of the European Parliament.

In collaboration with its members the Association put forward proposal to the European Chemical Agency (ECHA) to re-evaluate the lead reduction in fashion jewellery according to the direction REACH (EC) No. 1907/2006 in wording of the direction (EU) No. 836/2012.

In cooperation with the Confederation of Industry and within a systematic dialogue with the Ministry of Industry and Trade (Action plan for a support of an increase of the Czech Republic independence in raw materials sources by substitution of primary sources by secondary raw materials) the Association promoted the solution of the problem of waste glass for recycling (waste flat glass, container glass, etc.). In collaboration with the Confederation of Industry and its members the Association promoted the interests of industry in preparation legal regulations regarding the environment.

## Services and information

The Association secretary continued in collecting and searching for information important for the Association members and transferred it to them. The Association gave information on this branch to the bodies of the state administration and to other institutions which can contribute to the development of the glass and ceramic industry.

The Information bulletin was published monthly. This bulletin gives reports and news on activities of the Association, its members and on up-to-date problems regarding the glass and ceramic industry. The members of the Association received regularly the bulletin of the GAE and other information coming from the secretary of the GAE.

The Association regularly updated information given to members and public on [www.skloakeramika.cz](http://www.skloakeramika.cz), oriented to the support of the glass and ceramic industry in the Czech Republic and on the facebook profile. According to requirements the Association gathered and evaluated important data for monitoring of up-to-date situation and development of this branch.

In the framework of the project Education and collaboration with social partners the Association co-organized training for its members oriented to the social dialogue.

## Promotion of the Association and its members

The aim of the Association was to continue in medial promotion of the glass and ceramic industry and improve its image. The aim was always to introduce public with the production and the level of the branch and to contribute to gaining new qualified workers to companies and young people to schools of all levels of education.

The Association updated the web site oriented to the glass and ceramic industry containing latest news from this branch, report on glass and ceramics, survey of companies and schools, offer of working places, specialized publications, and calendar of specialized activities (see [www.askpcr.cz](http://www.askpcr.cz) and [www.skloakeramika.cz](http://www.skloakeramika.cz)).

The International Triennial of Glass & Jewellery in Jablonec nad Nisou was under the auspices of the Association, where the Association was represented not only by products of its members but also personally by the representatives of the executive board and of individual companies.

The Association promoted also the logo the Czech product, guaranteed by the Association of the Glass and Ceramic Industry of the Czech Republic.

The Annual Report - Glass and Ceramic Industry of the Czech Republic - 2016 was published based on the collaboration with the Association members and the Czech Statistical Office.

The Association contributed to finishing of the survey Panorama zpracovatelského průmyslu ČR (Panorama of the manufacturing industry of the Czech Republic) published by the Ministry of Industry and Trade.

There were published articles on the Association activities in the Sklář a keramik journal, where the Association has a contract on cooperation.

Further on, the Association shared on media programmes in the Czech Television, Czech Radio, etc. devoting to the Czech glass and ceramic industry.

The representatives of the Association nominated managers from the glass and ceramic industry to the competition Manager of the Year. Ing. Luděk Steklý, General Director of the AGC Automotive, a.s., Mr. Vlastimil Argman, General Director of the china producer Thun 1794, a.s. and Ing. Petr Škávra, Managing Director of UNIFRAX, s.r.o. became finalists.

The 4th Meeting of glassmakers and ceramists, the aim of which is to renew and develop relations among representatives of glass and ceramic industry in the Czech Republic was organized by the Association, which was held during two autumn days in the Nový Bor Region.

The Association became a partner of the discuss meeting Sklářské svítání (Glass dawn) in Jablonec nad Nisou. The secretary was actively involved in preparation and outputs from this action. The Association was represented in the discuss meeting by the members of the executive board and of members companies.

## The Czech Glass Society

The Czech Glass Society is a member of the International Commission on Glass (ICG) and the European Society of Glass Science and Technology (ESG).

The Czech Glass Society was originally established in 1946 as a glass section of the Czechoslovak Glass and Ceramic Society. In present form it exists after division of the Czech and Slovak Federal Republic in 1993 as the Czech Glass Society (CGS).

The CGS is a voluntary organization associating individual and collective members from the production of glass, fashion jewellery and related branches.

## Activities of the CGS in 2017

At the date of December 31, 2017 the CGS had 255 individual members and 29 members of art section, i.e. 284 members; 2 subsidiaries (VETROPACK MORAVIA GLASS, a.s., KAVALIERGEGLASS, a.s.) with 40 members, and 18 collective members.

The highest priority of the CGS was to organize the 23rd International Congress on Glass ICG in 2013. In subsequent years there were organized two dominant events - the 8th International Conference on Borate and Phosphate Glasses (2014) and the Czech and Slovak Conference on Glass (2014) and 14th International Conference on Glass Machinery including the seminary Metals in Glass Technologies (2015).

An important activity of the CGS in the international field is the participation in Technical Committees of the INTERNATIONAL COMMISSION ON GLASS (ICG): TC 2 - Chemical Durability & Analysis, TC 3 - Basic Glass Science, TC 7 - Nucleation, Crystallisation & Glass-Ceramics, TC 13 - Environment, TC 14 - Gases in Glass, TC 19 - Glass Surface Diagnostics, TC 20 - Glasses for Optoelectronics, TC 21 - Modelling of Melting Processes, TC 23 - Education & Training in Glass Science & Engineering, and TC 25 - Modelling of Glass Forming Processes.

In 2017 the 6th year of the discuss meeting Sklářské svítání (Glass dawn) was organized in the Museum of Glass and Jewellery in Jablonec nad Nisou under the auspices of the Confederation of Industry. The theme was the present and the future of glass and fashion jewellery.

The CGS devotes a great interest also to young glassmakers. The competition for young designers Master of Crystal was the 10th in 2017. It was organized by PRECIOSA in collaboration with the Museum of Glass and Jewellery in Jablonec nad Nisou and with a support of the CGS. Seventy authors' designs or works entered for the competition, from which the special jury chose the winner of individual categories.

The CGS is a publisher of Sklář a keramik journal. In 2014 it was 90 years from publishing the first number of the specialized glass journal Sklářské rozhledy, published by the Glass Institute in Hradec Králové. The other anniversary is 60 years from the change of the original journal name to Sklář a keramik and 30 years from the change of the publisher to the CGS.

The CGS is an official partner of the Centre of the Glass Art project in the František Glassworks. The CGS supported the 14th International Conference of Glass Machinery and the seminary Metals in Glass Technologies in 2015.

## Union of Glass and Fashion Jewellery Producers

The Union of Glass and Fashion Jewellery Producers (hereinafter the Union) has 52 members, from which 4 members are specialized schools and also Technical University Liberec and the Museum of Glass and Jewellery. The membership base is great enough and it represents the industry of glass beads, fashion jewellery, jewels and gift articles made of glass.

The Union keeps wide contacts with key institutions on central, regional and Jablonec Region level, e.g. with the Ministry of Foreign Affairs, the Ministry of Industry and Trade and the Ministry of Culture of the Czech Republic.

## Activities of the Union of Glass and Fashion Jewellery Producers in 2017

The Union permanently looks for sales opportunities for its members companies. It promotes putting of important European fashion jewellery exhibitions to programmes of the Ministry of Industry and Trade and of the Czech Trade agency.

In 2017 the Union was the main organizer of the exhibition *Křehká krása* (Fragile beauty) offering a lot of beautiful products made in Czech glass and glass jewellery companies. Visitors have a unique occasion to buy favourably products directly from exhibitors, and therefore this exhibition has its regular visitors. The main partners were Statutory town Jablonec nad Nisou, the Museum of Glass and Jewellery in Jablonec nad Nisou and the CzechTourism company. Partners of the exhibition were the Liberec Region, Ministry of Culture of the Czech Republic, Powiat Jelenogorski, Jablonec Cultural and Information Centre, Preciosa, Texo Plus and BusLine. 44 exhibitors took part in this exhibition and 10.5 thousand visitors came.

The Union in cooperation with traditional partners organized subsequent year of a fashion show called *Made in Jablonec*. More than 40 clothes, jewellery companies and crafts shared on preparations.

Based on the initiative of the Museum of Glass and Jewellery and with cooperation with the Union in 2013 a touristic product called "To Jablonec for glass and fashion jewellery" appeared. Its aim is to attract organized groups of tourists to Jablonec nad Nisou for a whole day visit. The first visits showed that it is interesting. Further development of this product is dependent on financial means gaining. The Union is a non-profit organization which can invest only means earned by other commercial activities.





## STRUCTURE OF THE GLASS AND CERAMIC INDUSTRY IN THE CZECH REPUBLIC

The structure of the glass and ceramic industry of the Czech Republic is described below according to the division of individual production branches, as it is used in the following parts of this Annual Report. Companies profiling the branch through their economic importance and prestige are given in individual groups. Further on, also basic information on Czech producers of machinery and equipment and on companies providing services for the glass and ceramic industry and suppliers of basic raw materials, is given.

The number of companies in the Czech Republic with more than 20 employees at the date of June 30, 2018

CZ-NACE 23.1 - Production of glass and glass products – 108 companies are included. According to the investigated production branches there are 32 producers of flat glass, 38 producers of hollow glass (from which 4 producers of container glass, other companies produce utility glass), 6 producers of glass fibres and products made of, and 32 producers of the other glass (see the following text).

CZ-NACE 23.41 - Production of ceramic and china products, mostly for household and decorative products – 19 companies are included, from which 7 producers of china.

CZ-NACE 23.42 - Production of ceramic sanitary ware – 2 companies are included.

### Flat glass

#### ***AGC Flat Glass Czech, a.s.: the key player in the area of flat glass production and processing***

The only producer of large-dimension flat glass in the Czech Republic is AGC Flat Glass Czech, a.s., a member of the AGC Group with the seat in Teplice. This company is at present the greatest producer of flat glass and its applications in Central and Eastern Europe. The 100 % owner of the company is Asahi Glass Co. Ltd., Japan.

The activities of AGC Flat Glass Czech, a.s. include the production of basic flat float glass, clear or with defined green tint. It is finished by further transformation to the so-called low-emission glasses controlling the light and energy flow, safety (laminated or toughened) glass, sound insulating glass, matt or painted glasses for exterior and interior applications and mirrors. By further treatment double or triplex insulating glass, bent building glass, furniture glass, glass for solar technique and fire

resistant glass, are produced. Beside float glass the company produces dozens of ornamental patterns of cast glass. The trade policy of the company is based on export to the countries of Central and Eastern Europe. The company production is applied also in world distribution channels of the AGC Group.

The activities of AGC Flat Glass Czech, a.s. are supported by distribution channels in the Czech Republic, Slovakia and Poland created by subsidiary companies for distribution of glass for architecture and the building industry. Through them the company is a supplier of important volumes of unfinished flat glass to other independent processing companies.

Great volumes of flat glass are processed in the Czech Republic in the automotive division of the AGC Group, in this case AGC Automotive Czech, a.s. Chudeřice u Bíliny. This company produces toughened and laminated safety glasses, especially for private cars, lorries, buses and coaches, including the additional operations like application of encapsulated or extruded plastic profiles and application of required additional components (strips, pins, connectors, holders, etc.). AGC Automotive Czech produces and sells approx. 25 mill. of automotive glasses/windshields per year and so, it is one of the greatest and the most complex producers in Europe.

The company is a part of European group of producing, development and trade subjects of the AGC Automotive Europe Ltd. group. Its activities are concentrated in Belgium, Czech Republic, France, Italy, Hungary, Germany, Russia, Spain, Turkey and Great Britain. The company is a producer of more than 70 mill. of windshields, rear windows, sidescreens and skylights made of safety automotive glass per year.

AGC Automotive Europe Ltd. is a part of the worldwide Automotive Glass Company, Asahi Glass Co. Ltd., Japan. The main vision is to be the most respected world supplier of all types of safety glass for the automotive industry.

In the Czech Republic there are many other companies processing flat glass for various specialized products. It is for instance Saint-Gobain Sekurit ČR, spol. s r.o. and Pilkington AGC Czech spol. s r.o. - production of glass for private cars; Amirro, s.r.o. Čelákovice - production of mirrors and furniture glass; ERTL GLAS, s.r.o. Říčany - production of laminated safety glass, heat protective glass; WMA-Glass, s.r.o. Chrástava - production of insulation glass; Bepof, spol. s r.o. Hranice u Aše - processing of flat glass and mirrors, etc.

Beside the above mentioned companies there are also many wholesale companies trading with products and services regarding finished flat glass.

## Container glass

The production of container glass includes beverage bottles and preserve glass jars made for the food industry (beer, wine, liquors, non-alcoholic drinks, mineral waters, fruit, etc.), and further on, glass containers for products of the chemical, pharmaceutical and cosmetic industries.

Dominant producers of container glass in the Czech Republic are O-I Manufacturing Czech Republic, a.s. with trading company O-I Sales and Distribution Czech Republic, s.r.o. Dubí u Teplic, members of the transnational group of companies Owens-Illinois, USA, and VETROPACK MORAVIA GLASS, a.s. Kyjov, a member of the transnational group Vetropack Holding AG, Switzerland. Both these companies have about 80 % of a market share of container glass in the Czech Republic and they have

also important export shares in neighbouring countries within their transnational ownership and trade bonds.

Further on, there are producers of container glass, e.g. Sklárný MORAVIA, a.s. Úsobrno and Stölzle UNION, s.r.o. Heřmanova Huť (the owner is Stölzle - Oberglas GmbH) in the Czech Republic.

## Glass fibres and products made of

The only producer of glass textile fibres and products made of in the Czech Republic is SAINT-GOBAIN ADFORS CZ, s.r.o. Litomyšl, which is organizationally included to the sector of innovative materials of the Saint-Gobain group. As far as products it includes activities: "Vertex" and "ADFORS CONSTRUCTION PRODUCTS EUROPE". The term "CONSTRUCTION PRODUCTS" reflects the final utilization of company products.

The only Czech producer of thermal and sound insulation made of glass fibres in the form of mats and slabs (ROTAFLEX SUPER® trade mark) is Union Lesní Brána, a.s. Dubí u Teplic.

Insulation material based on glass wool in the form of slabs and rolls is produced by KNAUF INSULATION, spol. s r.o. Krupka u Teplic. The plant in Krupka is one of the most up-to-date production plants for the production of mineral insulation made of glass wool in Europe.

## Utility glass

There are about thirty companies with more than 20 employees with the main production of utility glass. Crystalex CZ, s.r.o., production plant in Nový Bor (machine made utility soda potassium glass), Crystal BOHEMIA, a.s. Poděbrady (lead crystal) and Crystalite Bohemia, a.s. Světlá nad Sázavou belongs to the greatest. Further on, there are many smaller companies with various assortments, e.g. art glass, cut lead crystal, utility glass decorated with painting, pen-and-ink drawing, staining, high enamel and engraving, handmade utility glass, historical replicas, off-hand glass, etc. For example: Ajeto, spol. s r.o. Czech Glass Craft Lindava, Blažek Glass, s.r.o. Poděbrady, CAESAR CRYSTAL BOHEMIAE, a.s. Světlá nad Sázavou, SKLÁRNA SLAVIA, s.r.o. Nový Bor, Královská Huť, s.r.o. Doksy, EGERMANN, s.r.o. Nový Bor, Bohemia Machine, s.r.o. Světlá nad Sázavou, and a number of other companies.

Luxury handmade utility glass is produced by Moser, a.s. Karlovy Vary.

KAVALIERRGLASS, a.s. Sázava nad Sázavou is a producer of household cooking glass.

## Other glass

Products included into this group of the glass industry are often (especially in abroad) called special glasses. It is a wide range of glass products with specifically defined properties having their customers mostly in other processing branches of industrial market. The assortment of this group is very wide in the Czech Republic. It includes technical, laboratory and laboratory apparatus glass,

technical spheres, glass industrial apparatuses, protective welding glass, optical glass. Also the production of glass blocks, fashion jewellery semiproducts and lighting glass are included.

A dominant Czech producer of technical and laboratory glass, tubing and apparatus glass made of borosilicate glass is KAVAILIERGLASS, a.s. Sázava. Technical and laboratory glass is also produced by Technosklo, s.r.o. Držkov, EXATHERM, s.r.o. Železný Brod (glass thermometers and densimeters), Detesk, s.r.o. Železný Brod (technical borosilicate glass) and other smaller companies.

From the producers of optical glass EcoGlass, s.r.o. Jablonec nad Nisou, the producer of exactly pressed components of optical glass for electro-optical apparatuses can be stated.

VITRABLOK, s.r.o. Duchcov is a producer of glass blocks for the building industry.

Frits and glazes are made in MEFRIT spol. s r.o. Mělník and Glazura, spol. s r.o. Roudnice.

Production of fashion jewellery semiproducts is a subject of activities of many companies mostly in the north part of the Czech Republic in Jablonec region (Preciosa, a.s., Liglass, a.s., PAS Jablonec, a.s.).

Lighting glass is produced by Sklárna Janštejn, s.r.o. and it is a supplementary assortment of several smaller producers of utility and technical glass. A number of companies are engaged in the production of components for chandeliers and also in individual production of chandeliers, the most significant is Preciosa, a.s.

## Household china and ceramics

The assortment of household china includes not only products intended for daily use but also luxury products, e.g. luxury household china, household and decorative china, for instance rose and onion pattern, and figural china.

Among significant china producers belong Thun 1794, a.s. Nová Role, Český porcelán, a.s. Dubí u Teplic, G. Benedikt Karlovy Vary, s.r.o., Rudolf Kämpf, s.r.o. Nové Sedlo, König-Porzellan Sokolov, spol. s r.o. Sokolov.

A great number of more specialized smaller companies produce household ceramics. The greatest are Keramo Kožlany, v.d., and Keramika Krumvíř, spol. s r.o. Krumvíř. Ceramic tiles are made in KERAMIA, s.r.o. Znojmo.

## Technical ceramics and sanitary ware

There are two dominant Czech producers of sanitary ware – LAUFEN CZ, s.r.o. (with producing facilities in Bechyně and Znojmo), a member of the Roca and Ideal Standard, s.r.o. Teplice. Both companies are strongly oriented to export and their market success is dependent in a great extent on the building industry boom in Europe.

The producers of technical china are Jizerská porcelánka, s.r.o. Desná v Jizerských horách producing laboratory chinaware and china tubing, and ELPOR, s.r.o. Krupka Bohosudov.

From the producers of technical ceramics can be stated: KERAMTECH, spol. s r.o. Žacléř - production of foundry ceramics and technical china, BRISK TÁBOR, a.s. - production of spark and glow plugs for internal combustion engines and technical ceramics, HOFMANN CERAMIC CZ, s.r.o. Bělá nad Radbuzou - production of technical ceramics for foundries, ESTCOM CZ-oxidová keramika, a.s. Louny - production of refractory ceramics and ceramic tubes, and Diamorph Hob Certec, s.r.o. Horní Bříza - production of technical ceramics, etc.



## Other mineral products

Aluminosilicate fibres resistant to high temperatures and insulating fibre products made of (wool, mats, shaped pieces, slabs) with SIBRAL trade mark used mainly in the construction of heat appliances, are produced by UNIFRAX, s.r.o. Dubí u Teplic.

Fused basalt products (abrasion resistant and refractory materials with EUROR trade mark), abrasion resistant piping, and tiles for industry and interiors are produced in EUTIT, s.r.o., Stará Voda. This company is the only world producer of interior floor basalt tiles.

## Furnaces/kilns, glass machinery and equipment, and special services for glass and ceramic industry

Nowadays, about forty or fifty independent companies produce and deliver glass furnaces, kilns, machinery and equipment, glass moulds and apparatuses for the glass and ceramic production, or carry out service, design and various specialized and consultancy work for this industry. These companies are of a different size and they have, of course, various ranges of their activities.

Among the companies with individual production and trade activities exceeding significantly the territory of the Czech Republic belong some producers of machinery and equipment, e.g. Sklostroj Turnov CZ, s.r.o. producing machines and equipment for automatic production of container glass. Further on, SKLOPAN LIBEREC, a.s. is a supplier of machinery for processing of flat glass, and Sklářské stroje Znojmo, s.r.o. delivers various glass machinery equipments.

Heat appliances and kilns for china and ceramics firing, as a complex and in greater amount, are designed and delivered by Realistic, a.s. Karlovy Vary, BVD PECE, s.r.o. Karlovy Vary, and LAC, s.r.o. Rajhrad. The company Elsklo, s.r.o. Desná v Jizerských horách designs and delivers equipment for small-scale electric melting of glass. Glass melting aggregates are designed and delivered by Teplotechna - Prima, s.r.o. Teplice. Companies Glass Service, s.r.o. Vsetín and Dites, s.r.o. Teplice (automatized control systems for technological processes) have important activities in abroad in the area of design and control systems for glass melting aggregates. Gas-fired melting furnaces and auxiliary furnaces for hand production of glass are produced by EGT servis, s.r.o. Hradec Králové.

Producer and supplier of cast iron and steel moulds for container glass Skloform, a.s. Suchdol nad Lužnicí - works predominantly on the level of services and deliveries for Czech producers. Further on, Desko, a.s. Desná v Jizerských horách delivers machinery and moulds for fashion jewellery production. Other producers of machinery for the production of glass are, e.g. FOR G, s.r.o. Teplice, and Bohemia Machine, s.r.o. Světlá nad Sázavou.

Quite a great group of companies and also a number of independent individuals are dealing with design of procedures and construction of machinery for mechanical working of glass (engraving, cutting, polishing), e.g. Dias Turnov, s.r.o. and Polpur, s.r.o. Turnov.

## Raw materials for the glass and ceramic industry

A long tradition and the development of glass, china and ceramic production were determined, beside other factors, by an abundance of basic raw materials, i.e. sand, kaolin, feldspar and quartz.

High quality glass sands with extremely high content of SiO<sub>2</sub> are outstanding for the glass industry and also for various utilizations in other branches. Sands are delivered in a moistened or dried form.

Companies Provodínské písky, a.s. Provodín and Sklopísek Střeleč, a.s. Mladějov v Čechách mine and deliver these sands in the Czech Republic.

Mining and processing of kaolin is carried out by LB MINERALS, s.r.o. Horní Bříza, Sedlecký kaolin, a.s. Božičany, and Kaolin Hlubany, a.s. Podbořany. LB Minerals, s.r.o. is a supplier of ceramic kaolins intended for wall and floor tiles and sanitary ware, mixed kaolins for sanitary ware, paper mills kaolins and kaolins for glass fibres. Floated kaolin delivered by Sedlecký kaolin, a.s. is used, especially for china and ceramics. Kaolin Hlubany, a.s. delivers floated kaolins for ceramics.

Beside mining and processing of kaolins also mining and processing of feldspar is a part of the production of the LB Minerals, s.r.o. Potassium feldspars are suitable for production of container and flat glass, glazes and china; soda-lime feldspars are suitable for the production of frits and enamels. Soda-potassium and potassium-sodium feldspars are delivered by K M K GRANIT, a.s. Krásno. Feldspars are applied as flux.



## Position of the glass and ceramic industry in the Czech Republic

The glass and ceramic industry is a traditional part of the processing industry in the Czech Republic.

The glass and ceramic industry is included in the subcategory Production of other non-metallic mineral products according to the Classification of Economic Activities (NACE) used by the European Union.

The CZ-NACE 23 Production of other non-metallic mineral products put together productions of glass, ceramics and building materials of various types and utilization. Production of these commodities has a long tradition and a high level in the Czech Republic.

**Classification of CZ-NACE 23 activities is the following:**

23.1	Production of glass and glass products
23.2	Production of refractory products
23.3	Production of building materials from clay materials
23.4	Production of other china and ceramic products
23.5	Production of cement, lime and plaster
23.6	Production of concrete, cement and plaster products
23.7	Cutting, shaping and finishing of stones
23.9	Production of abrasive materials and other non-metallic mineral products not stated elsewhere

**Sections 23.1 and 23.4 from which:**

23.41	Production of ceramic and china products, mostly for household and decorative products
23.42	Production of ceramic sanitary ware
23.43	Production of ceramic insulators and insulation accessories
23.44	Production of other technical ceramic products

represent the production of glass, glass products and the production of china and ceramic products which are a subject of evaluation of this Annual Report.

In following tables there are stated revenues without the value added tax (VAT) from sale of own products and services of industrial character (hereinafter revenues) and revenues without the VAT from the direct export (hereinafter direct export) of individual subcategories of the processing industry. Revenues and direct export are given in current prices. Revenues and direct export are given without the CZ-NACE 33 Repair and installation of machines and equipment.

The revenues of the processing industry in the Czech Republic reached the value of 3689.05 bill. CZK in 2017 (in 2016 it was 3432.85 bill. CZK). In comparison with the previous year the revenues of the processing industry increased by 7.46 %. The revenues in amount of 112.84 bill. CZK in the category Production of other non-metallic mineral products mean the increase by 4.27 % in comparison with 2016. The Production of other non-metallic mineral products shared on revenues of the processing industry with 3.1 % in 2017.

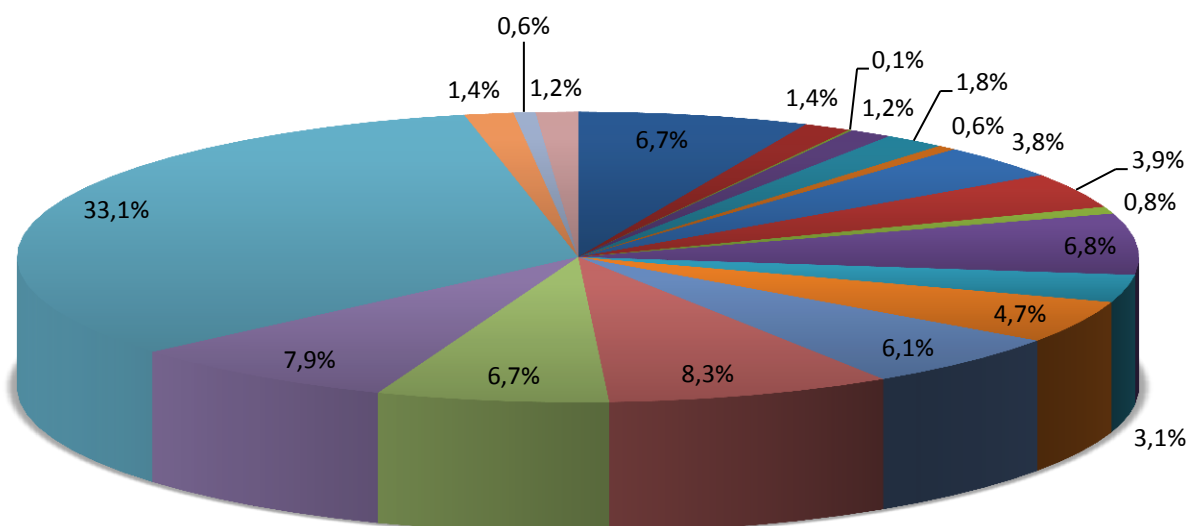


**Revenues of the processing industry in 2017**

	Revenues (mld. Kč)	Share (%)
Production of food, beverages and tobacco products	245,76	6,7
Production of textiles and clothing	50,43	1,4
Production of leather and related products	3,77	0,1
Processing of wood, production of wood, wicker and straw products, except furniture	45,64	1,2
Production of paper and products made of	65,73	1,8
Printing and copying of recorded media	20,57	0,6
Production of coke and refined oil products	138,78	3,8
Production of chemical substances and chemical preparations	144,51	3,9
Basic production of pharmaceutical products and pharmaceutical preparations	28,94	0,8
Production of rubber and plastic products	250,65	6,8
Production of other non-metallic mineral products	112,84	3,1
Production of basic metals, metallurgical processing of metals;foundry	174,53	4,7
Production of metal constructions and metal-working products, except machines	225,20	6,1
Production of computers, electronic and optical devices and equipment	304,58	8,3
Production of electrical devices	246,63	6,7
Production of machines and equipment not stated elsewhere	290,79	7,9
Production of motor vehicles (except motorcycles), trailers and semitrailers	1219,37	33,1
Production of other transport means	52,34	1,4
Production of furniture	23,18	0,6
Other processing industry not stated elsewhere	44,80	1,2
<b>Processing industry</b>	<b>3 689,05</b>	<b>100,0</b>

### Structure of revenues of the processing industry in 2017

The direct export of the processing industry was 2379.59 bill. CZK, i.e. by 5.62 % more than in 2016 (2252.94 bill. CZK)

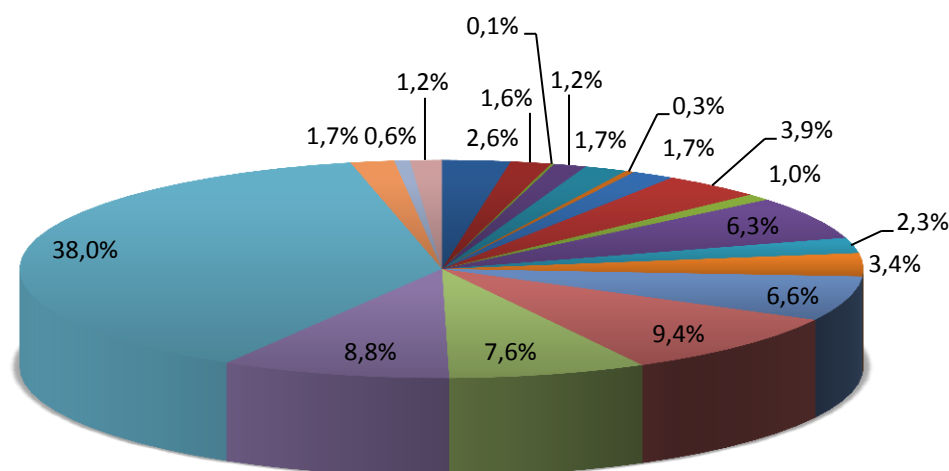


- Production of food, beverages and tobacco products
- Production of textiles and clothing
- Production of leather and related products
- Processing of wood, production of wood, wicker and straw products, except furniture
- Production of paper and products made of
- Printing and copying of recorded media
- Production of coke and refined oil products
- Production of chemical substances and chemical preparations
- Basic production of pharmaceutical products and pharmaceutical preparations
- Production of rubber and plastic products
- Production of other non-metallic mineral products
- Production of basic metals, metallurgical processing of metals; foundry
- Production of metal constructions and metal-working products, except machines
- Production of computers, electronic and optical devices and equipment
- Production of electrical devices
- Production of machines and equipment not stated elsewhere
- Production of motor vehicles (except motorcycles), trailers and semitrailers
- Production of other transport means
- Production of furniture
- Other processing industry not stated elsewhere

**Direct export of the processing industry in 2017**

	Revenues (mld. Kč)	Share (%)
Production of food, beverages and tobacco products	62,22	2,6
Production of textiles and clothing	37,12	1,6
Production of leather and related products	3,12	0,1
Processing of wood, production of wood, wicker and straw products, except furniture	29,61	1,2
Production of paper and products made of	39,32	1,7
Printing and copying of recorded media	8,15	0,3
Production of coke and refined oil products	39,47	1,7
Production of chemical substances and chemical preparations	92,28	3,9
Basic production of pharmaceutical products and pharmaceutical preparations	22,85	1,0
Production of rubber and plastic products	150,96	6,3
Production of other non-metallic mineral products	54,36	2,3
Production of basic metals, metallurgical processing of metals;foundry	81,48	3,4
Production of metal constructions and metal-working products, except machines	157,82	6,6
Production of computers, electronic and optical devices and equipment	223,68	9,4
Production of electrical devices	180,83	7,6
Production of machines and equipment not stated elsewhere	208,83	8,8
Production of motor vehicles (except motorcycles), trailers and semitrailers	904,52	38,0
Production of other transport means	39,83	1,7
Production of furniture	14,25	0,6
Other processing industry not stated elsewhere	28,89	1,2
<b>Processing industry</b>	<b>2 379,59</b>	<b>100,0</b>

## Structure of direct export of the processing industry in 2017



- Production of food, beverages and tobacco products
- Production of textiles and clothing
- Production of leather and related products
- Processing of wood, production of wood, wicker and straw products, except furniture
- Production of paper and products made of
- Printing and copying of recorded media
- Production of coke and refined oil products
- Production of chemical substances and chemical preparations
- Basic production of pharmaceutical products and pharmaceutical preparations
- Production of rubber and plastic products
- Production of other non-metallic mineral products
- Production of basic metals, metallurgical processing of metals; foundry
- Production of metal constructions and metal-working products, except machines
- Production of computers, electronic and optical devices and equipment
- Production of electrical devices
- Production of machines and equipment not stated elsewhere
- Production of motor vehicles (except motorcycles), trailers and semitrailers
- Production of other transport means
- Production of furniture
- Other processing industry not stated elsewhere

In the following table the individual processing industry subcategories are arranged according to the level of the inter-year change of revenues reached within years 2017 and 2016. These inter-year changes are used here as indicators of growth dynamism of individual branches.



**Dynamism of sale according to the individual processing industry subcategories**

	Revenues 2016 (mld. Kč)	Revenues 2017 (mld. Kč)	Index 17/16 (%)
Production of leather and related products	3,82	3,77	98,7
Other processing industry not stated elsewhere	45,17	44,80	99,2
Production of computers, electronic and optical devices and equipment	285,62	304,58	106,6
Production of other transport means	57,10	52,34	91,7
Production of metal constructions and metal-working products, except machines and equipment	212,30	225,20	106,1
Processing of wood, production of wood, wicker and straw products, except furniture	46,11	45,64	99,0
Production of machines and equipment not stated elsewhere	267,64	290,79	108,7
Production of electrical devices	226,08	246,63	109,1
Production of paper and products made of	62,81	65,73	104,6
Production of textiles and clothing	49,39	50,43	102,1
<b>Processing industry</b>	<b>3 426,94</b>	<b>3 689,05</b>	<b>107,6</b>
Production of food, beverages and tobacco products	237,87	245,76	103,3
Production of other non-metallic mineral products	108,22	112,84	104,3
Production of rubber and plastic products	233,10	250,65	107,5
Basic production of pharmaceutical products and pharmaceutical preparations	28,54	28,94	101,4
Production of furniture	22,32	23,18	103,9
Production of motor vehicles (except motorcycles), trailers and semitrailers	1137,08	1219,37	107,2
Production of chemical substances and chemical preparations	115,49	144,51	125,1
Production of basic metals, metallurgical processing of metals; foundry	155,53	174,53	112,2
Production of coke and refined oil products	112,47	138,78	123,4
Printing and copying of recorded media	20,29	20,57	101,4

The most significant growth was in the category Production metal constructions and metal-working products, except machines and equipment and the Production of electrical devices.

**Glass and ceramic industry**

In the following chapter “Development of the glass and ceramic industry in the period from 2012 till 2017”, the glass and ceramic industry as a part of the Czech processing industry, which corresponds to the characteristic orientation of organizations activities included in the Association, is studied and described in more details, i.e. in group division. For understanding the relations among the processing industry, production of other non-metallic mineral products and the glass and ceramic industry an informative table is given further on.

**Glass and ceramic industry in the processing industry in 2017**

	Revenues	Direct export
Glass and ceramic industry		
Indicators in bill. CZK (current prices)	47,50	32,65
Share in the Other non-metallic mineral products (%)	42,10	60,07
Share in the processing industry (%)	1,29	1,37
Production of the other non-metallic mineral products Indicators in bill. CZK (current prices)	112,84	54,36
Share in the processing industry (%)	3,06	2,28
Processing industry Indicators in bill. CZK (current prices)	3 689,05	2 379,59

The revenues of the glass and ceramic industry in 2017 in comparison with 2016 increased by 2.99 bill. CZK, i.e. by 6.7 %, from which the direct export decreased by 0.15 bill. CZK, i.e. by 0.45 %.



## Development of the glass and ceramic industry in the period from 2012 till 2017

In this part of the Annual Report characteristic values of the main production indices of the glass and ceramic industry of the Czech Republic in 2017 and in the period from 2012 till 2017 are recorded. In the context of real outer and inner background of the Czech Republic, based on these data, the aim is to analyze and describe the main trends of the development of economic indices of the glass and ceramic industry in above-mentioned years.

In the introduction of the glass and ceramic industry development analysis a survey of basic macroeconomic indices for the Czech Republic in the investigated period from 2012 till 2017 is given for understanding wide relations.

### Main macroeconomic indices in the Czech Republic in the period from 2012 till 2017

(Source: Czech Statistical Office, July 2018)

		2012	2013	2014	2015	2016	2017
Gross domestic product	growth in %, actually	-0,8	-0,5	2,7	5,3	2,5	4,3
Average inflation rate	growth in %, actually	3,3	1,4	0,4	0,3	0,7	2,5
General unemployment rate	average in %	7,0	7,0	6,1	5,0	4,0	2,9
Average real wage growth	in %	-0,8	-1,5	2,5	2,9	3,7	3,6
Balance of trade	bill. CZK	310,8	350,8	154,1	155,2	183,9	152,6
CZK / EUR	average per year	25,14	25,97	27,53	27,28	27,03	26,33
CZK / USD	average per year	19,58	19,57	20,75	24,60	24,43	23,38

In favourable economic surroundings of 2017 the gross home product increased in comparison with previous year by 4.4 % and lengthened the growth trend to four years. On the side of expenses the main source was the inland demand, where the influence of investment strengthened at stable development of consumption, especially the private investments. Also the foreign trade with goods and services accelerated. Dynamic growth of economy projected significantly to the development on labour market, which showed symptoms of overheating and which moved already under the limit of

natural rate of unemployment. Difficulties with searching suitable workers to new working positions slowed down higher outputs of companies and pressed to the growth of wages.

Inflation accelerated the inter-year growth rate to the highest rate in last five years. Food prices pulled it up in reaction to a blistering growth of prices of agricultural products and also housing costs. More expensive oil projected in the growth of import prices.

The industrial production was growing in 2017 already four years and culminated by inter-year dynamics of 6.5 %. The main credit on the increase of decisive processing industry had the production of motor vehicles, which ensured almost one third of total revenues of the industry. Also the employment in the industry increased. However, revenues increased quicker than employment and mutual relation of these indices projected to the increase of productivity of labour. Building production in the last year increased, when the building construction was a supporter of growth. On the other side the civil engineering stayed under the level of previous year. Its present unfavourable development is connected mainly with unpreparedness of projects, and therefore also with slow starting-up of use of the European Union grants.

(Source: Czech Statistical Office, Vývoj ekonomiky České republiky v roce 2017, July 2018)

The industry of glass and ceramics which is included in the subcategory Production of other mineral products belongs to the competence of the Ministry of Industry and Trade, which expects continuous growth of industrial production also in the following years.

The Czech economy was successful in 2017. The growth of the gross added value increased almost twice (to 4.5 %) in comparison with the rate reached in 2016. From this point of view the year 2017 like 2015 joined the most successful years in the last decade. Especially, noticeable acceleration of output in the first half of the last year helped. Nevertheless, the gross added value strengthened also in last three months of 2017 in comparison with previous quarter by significant 0.6 % (the same as in the European Union). The inter-quarter growth of the gross added value continued nineteen times already. In total the output of all branches increased from the end of last recession by 18.2 %. As opposed to previous years of present prosperity, all main branch grouping contributed to the inter-year growth of the gross added value last year. Also the improvement of output of the energy and building industries helped to this result.

The processing industry, which contributed to the inter-year growth of total gross added value almost halfway, kept a key role among branches also in the last year. Good results of industrial exporters reflected in a high rate of the gross added value of this branch (+ 7.6 %, the highest in last six years). A strong growth of the gross added value was reached in the surroundings of weak increase of employment (+ 0.6 %) and also man-hours (+ 1.0 %), what positively reflected on the development of productivity. In the sector of services the output increased only by 3.5 %, however to the growth of the gross added value of the whole economy it contributed comparably like the processing industry in the last year. While the contributions of the processing industry to the growth in last seven quarters stagnated, the role of services on the other side strengthened, and it was accompanied by more intensive creation of working places. Services were during almost the whole year drawn by dominant grouping trade – transport – accommodation – restaurant. However, the most dynamic segment was monetary system and insurance (+ 9.3 %, the most after 2008) like in 2016. In the last years also professional, scientific, technical and administrative activities profit on the growing demand. On the other side in branches with domination of state the gross added value (and

also employment) increased only close above 1 %. In spite of this it was the strongest rate in the last seven years.

Also data from companies' statistics show a favourable development of industry. The output of the industry (according to the index of industrial production) in spite of a temporary worsening in summer, increased during the whole year by 6.9 %. It reached the best result since 2010, when it recovered from the consequences of deep recession.

(Source: Czech Statistical Office, Vývoj ekonomiky České republiky v roce 2017, July 2018)

Data and analyses given below were gathered and processed for the glass and ceramic industry as the area of the Czech processing industry corresponding to the characteristic orientation of companies associated in the Association. The selected method of the industrial development description comes out from investigation of data arranged in individual branches of the glass and ceramic industry. For the analysis of 2017 available statistical data of companies with more than 50 employees relevant to 30 June 2018, have been used and they were added with qualified estimations.

### **Price indices for the group of products of the glass and ceramic industry**

#### **Inter-year price indices**

REPR*		2012	2013	2014	2015	2016	2017
CG 23	Other non-metallic mineral products	100,2	99,6	99,8	100,2	101,2	100,9
CG 231	Glass and glass products	99,4	99,7	98,7	99,2	103,2	102,5
CG 232	Refractory products	102,1	101,1	100,1	99,5	101,3	98,7
CG 234	Other china and ceramic products**						

*Inter-year price indices (same period of previous year = 100 %)*

The total average price index of the Other non-metallic mineral products slightly decreased in comparison with previous year.

#### **Cumulative price indices**

REPR		2012	2013	2014	2015	2016	2017
CG 23	Other non-metallic mineral products	97,1	96,7	96,5	97,1	98,3	99,2
CG 231	Glass and glass products	98,8	98,4	97,1	88,4	91,4	93,6
CG 232	Refractory products	101	102,1	102,2	108	109,4	108
CG 234	Other china and ceramic products*						

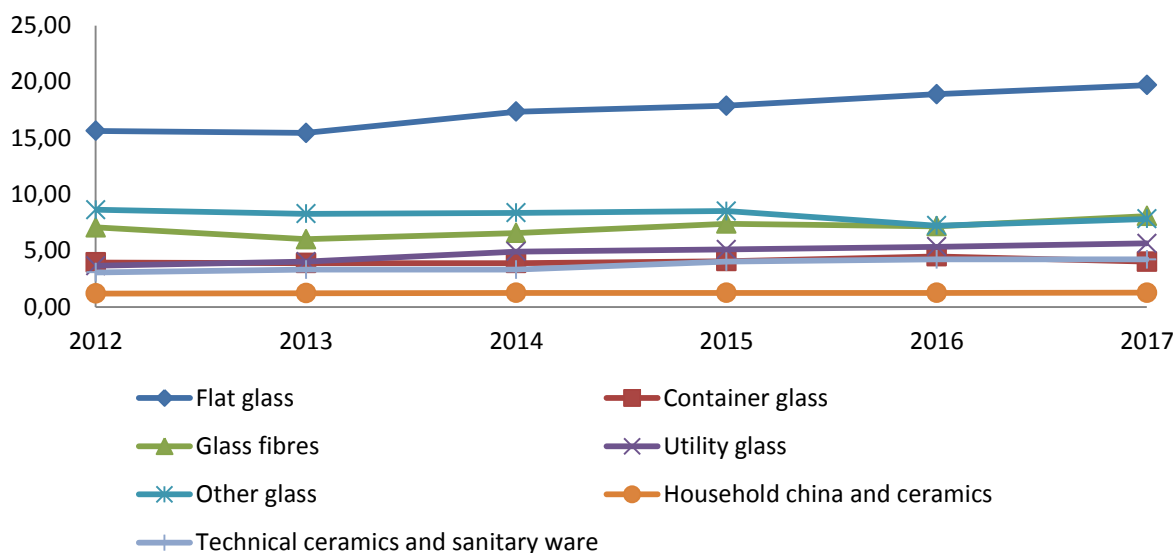
*Cumulative price indices (2007=100%)*

\*) Price indices for CG 234 branch the Czech Statistical Office does not publish



**Revenues for sale of own products and services****Revenues for sale of own products and services (bill. CZK)**

	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	15,64	15,46	17,34	17,87	18,90	19,71	104,3
Container glass	3,96	3,90	3,90	4,07	4,49	4,02	89,6
Glass fibres	7,06	6,02	6,56	7,4	7,17	8,07	112,6
Utility glass	3,66	4,03	4,92	5,1	5,35	5,64	105,4
Other glass	8,63	8,28	8,36	8,52	7,23	7,82	108,2
Glass, total	38,95	37,69	41,08	42,96	43,13	45,26	104,9
Household china and ceramics	1,19	1,22	1,25	1,25	1,26	1,26	100,4
Technical ceramics and sanitary ware	3,07	3,31	3,32	4,03	4,23	4,23	100,1
Ceramics, total	4,26	4,53	4,56	5,28	5,48	5,49	100,2
<b>Glass and ceramics, total</b>	<b>43,21</b>	<b>42,22</b>	<b>45,65</b>	<b>48,24</b>	<b>48,61</b>	<b>50,75</b>	<b>104,4</b>

**Development of revenues for sale of own products and services (bill. CZK)**

In 2017 the revenues for sales of own products and services (hereinafter revenues) reached in investigated branches 50.75 bill. CZK.

The revenues of the glass industry reached 45.26 bill. CZK, what is by 4.9 % more than in 2016. The revenues increased in all glass industry branches. The share of flat glass was 44.0 %, other glass 17.0 %, glass fibres and products made of 18.0 %, container glass 9.0 %, and utility glass 12.0 %.

The revenues of investigated branches of china and ceramics reached 5.49 bill. CZK, what is by 0.2 % more than in 2016. The share of household china and ceramics was 23 %, the share of technical ceramics and sanitary ware was 77 %.

The development of revenues in 2017 in individual branches was the following.

The revenues for flat glass in 2017 were 19.71 bill. CZK. In comparison with 2016 it increased by 4.3 %. The flat glass production is dependent on the development of the building and automotive industries. The output of the Czech building industry improved after several years of decline,

according to statistical data. The building production in 2017 in comparison with previous year increased by 2.1 %. Production of building construction in comparison with previous year increased by 5.0 % and civil engineering showed an inter-year decline by 5.7 %. Building companies with 50 and more employees in 2017 concluded 61,515 building orders at home and in comparison with previous year this number increased by 0.3 %. A total value of these orders in comparison with previous year increased by 9.3 % and was 202.6 bill. CZK.

The Czech automotive industry achieved outstanding results in 2017 and henceforth has a significant share on the growth of the Czech economy. At the same time the year 2017 brought a number of historical records in motor vehicles production and made a base for good results in 2018. The world production of motor vehicles increased in comparison with previous year by 5.1 %, i.e. 1446,543 motor vehicles. Production of cars increased in 2017 in the Czech Republic at all inland producers (1413,881 cars).

(Source: Sdružení automobilového průmyslu)

The development of flat glass in following years will be influenced mainly by further development of the building industry in Central Europe and by the production of the automotive industry.

The revenues for container glass reached amount of 4.02 bill. CZK in 2017, i.e. they decreased in comparison with 2016 by 10.4 %. The revenues for glass fibres and products made of increased by 12.6 % in comparison with the previous year. The increase of the building industry in the Czech Republic had an influence on revenues. The growth of export of this assortment to foreign countries, especially to the European Union and Russia, which completed the development on the Czech market, projected positively to the revenues.

Since 2010 the revenues for utility glass have been increasing permanently. In comparison with 2016 the revenues of utility glass increased by 5.4 % (0.29 bill. CZK). The export is decisive for the amount of revenues. In this branch there is a very hard competition and Czech companies face it by a high quality, design and originality of products. It is possible to say that companies and their products in the world since 2010 have been strengthening their position.

The revenues for other glass increased in comparison with 2016 (0.59 bill. CZK). This group includes a wide assortment of products (technical and laboratory glass, glass tiles and bricks, glass semiproducts for fashion jewellery, etc.). The revenues development of individual assortment groups is very unbalanced.

The revenues for household china and ceramics had practically no inter-year increase (0.4 %). The china producers succeeded to conclude necessary amount of trade contracts thanks to a consistent trade policy, however, they were affected by an unstable situation in countries of the former Soviet Union.

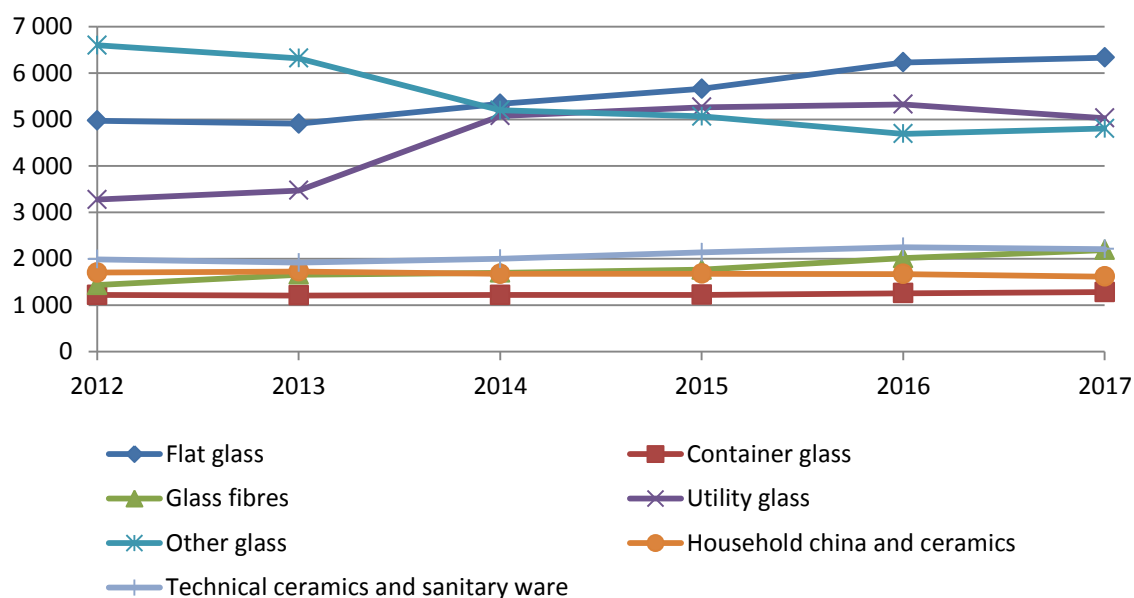
The revenues for technical ceramics and sanitary ware increased only at minimum by 0.1 %.

## Workers

### Average accounting number of workers (persons)

	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	4 975	4 911	5 338	5 660	6 229	6 335	101,7
Container glass	1 221	1 208	1 219	1 223	1 257	1 280	101,8
Glass fibres	1 432	1 656	1 698	1 763	2 012	2 189	108,8
Utility glass	3 276	3 472	5 079	5 264	5 327	5 030	94,4
Other glass	6 598	6 320	5 198	5 070	4 694	4 806	102,4
Glass, total	17 502	17 567	18 532	18 980	19 519	19 640	100,6
Household china and ceramics	1 702	1 725	1 676	1 680	1 671	1 617	96,8
Technical ceramics and sanitary ware	1 988	1 915	2 000	2 138	2 251	2 210	98,2
Ceramics, total	3 690	3 640	3 676	3 818	3 922	3 827	97,6
<b>Glass and ceramics, total</b>	<b>21 192</b>	<b>21 207</b>	<b>22 208</b>	<b>22 798</b>	<b>23 441</b>	<b>23 467</b>	<b>100,1</b>

### Development of average accounting number of workers (persons)



Total workers number in the glass and ceramic industry shown in 2017 in comparison with 2016 increased by 0.1 %, from which the glass industry showed a growth by 0.6 % (by 121 persons) and the ceramic industry decreased by 2.4 % (by 95 persons). The inter-year development of workers number differs in individual branches. Low increase of workers number in spite of necessity and interest of companies to engage new employees is given by shortage not only of qualified working force but also by general shortage of free employees on the labour market.

The workers number increase in flat glass production is dependent on an increased demand of the automotive industry and building industries. The number of workers increased by 106 persons.

The workers number increase was achieved also in container glass production (increase by 1.8 %) and in the production of glass fibres and products made of the workers number increased by 8.8 %.

The workers number in utility glass production decreased by 5.6 %. This sector solves a manpower shortage in this time. The decrease of workers number is influenced by permanent decline of demand for glass semiproducts for fashion jewellery and reduction the assortment with prevailing share of manual work.

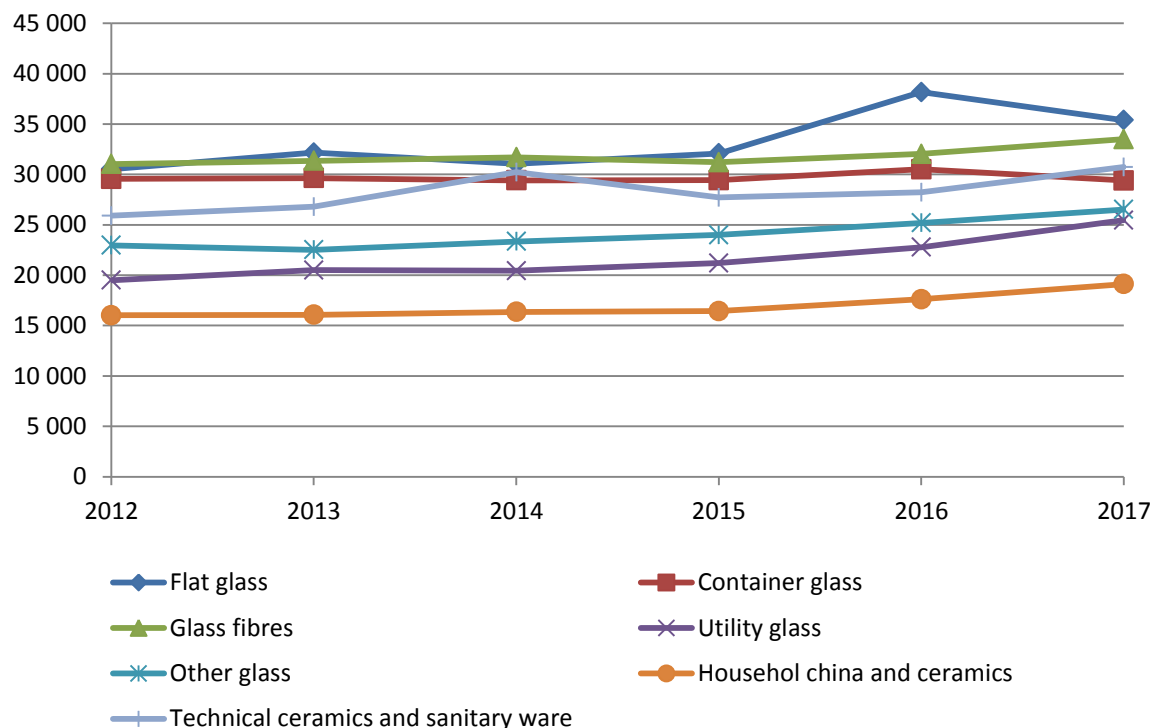
The workers number in household china and ceramics production slightly declined. It is possible to say that the situation is stable and without any significant change from the last year.

### **Average month-wages**

#### **Average month-wages (CZK)**

	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	30 537	32 164	31 056	32 093	38 172	35 394	92,7
Container glass	29 561	29 645	29 418	29 431	30 509	29 403	96,4
Glass fibres	31 033	31 355	31 702	31 216	32 041	33 507	104,6
Utility glass	19 499	20 498	20 442	21 207	22 773	25 456	111,8
Other glass	22 971	22 527	23 354	23 997	25 192	26 531	105,3
Househol china and ceramics	16 018	16 066	16 365	16 440	17 606	19 128	108,6
Technical ceramics and sanitary ware	25 910	26 802	30 230	27 721	28 224	30 734	108,9
<b>Glass and ceramics, total</b>	<b>24 857</b>	<b>25 382</b>	<b>25 382</b>	<b>26 042</b>	<b>27 788</b>	<b>28 593</b>	<b>102,9</b>

## Development of average month-wages (CZK)



The development of average month-wages within 2017 and 2016 documents the economic situation of glass and ceramic industry companies.

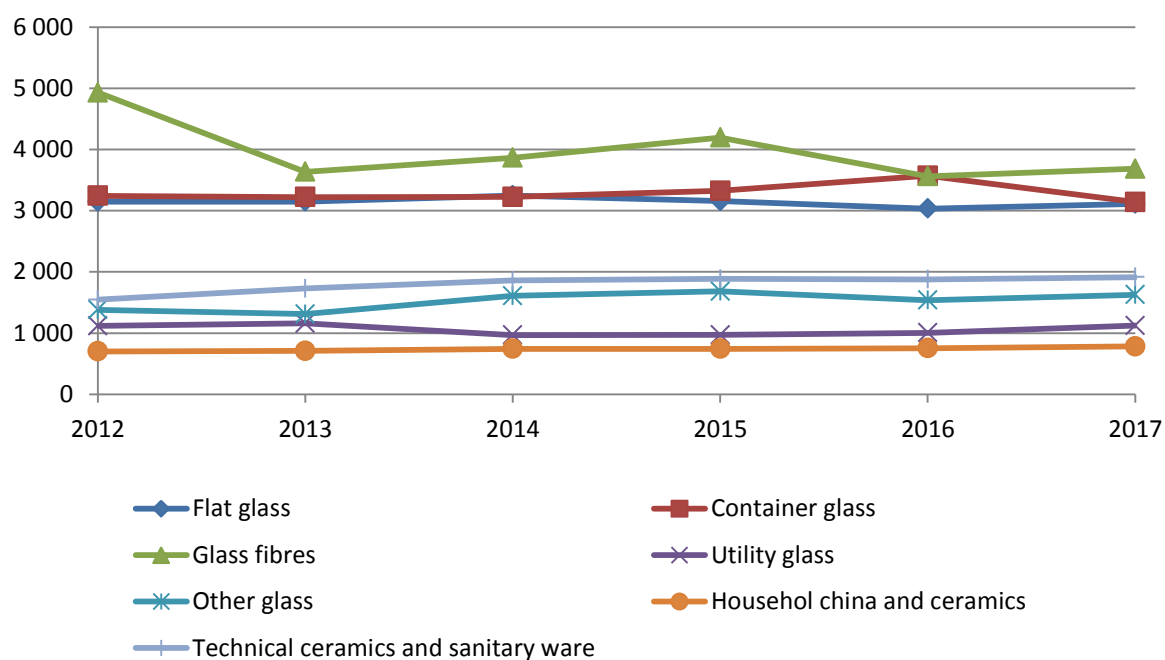
The average wages increased in the most of production branches.

More and more noticeable tendency in differentiation of wages in mass and practically full-automatized production continues. It means production of flat glass and its processing (35,394 CZK), glass fibres and products made of and container glass. Further on, it applies to branches with more often changes (shorter production series) in the regime of automatized production lines and also a certain share of manual production. Significantly above the wage median in the Czech Republic (27,320 CZK; *Source: Czech Statistical Office, 4<sup>th</sup> quarter*) there are average wages reached in the branches of glass fibres and products made of flat and container glass. The average wage reached in the technical ceramics and sanitary ware (30,734 CZK) is higher than the average wage in the Czech Republic, and the average wage in the sanitary ware is 32,703 CZK. The level of the average wage in other glass is influenced on one side by strengthening the share of more qualified work (a group of technical glass production), and low wages in the production of glass semiproducts for fashion jewellery on



**Productivity of labour****Productivity of labour from sales in current prices (ths. CZK/worker)**

	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	3 145	3 148	3 249	3 158	3 034	3 112	102,6
Container glass	3 242	3 223	3 226	3 324	3 570	3 142	88,0
Glass fibres	4 931	3 634	3 866	4 195	3 561	3 685	103,5
Utility glass	1 117	1 160	967	970	1 005	1 122	111,6
Other glass	1 380	1 310	1 608	1 681	1 539	1 627	105,7
Househol china and ceramics	701	708	743	743	753	781	103,7
Technical ceramics and sanitary ware	1 547	1 730	1 860	1 886	1 877	1 914	102,0
<b>Glass and ceramics, total</b>	<b>2 295</b>	<b>2 130</b>	<b>2 217</b>	<b>2 280</b>	<b>2 191</b>	<b>2 198</b>	<b>100,3</b>

**Development of productivity of labour from sales in current prices (ths. CZK/worker)**

The above-mentioned information (development of revenues, workers number and production character) is projected in more complex index of the productivity of labour from sales. The productivity of labour of the glass and ceramic industry as the whole increased by 0.3 % in comparison with previous year.

The productivity of labour in flat glass increased by 2.6 %, in container glass it decreased by 12 %. The productivity of labour in household china and ceramics increased. The productivity of labour increased by 11.6 % in utility glass. The productivity of labour in comparison with previous year increased by 2.0 % in technical ceramics and sanitary ware.

## Export

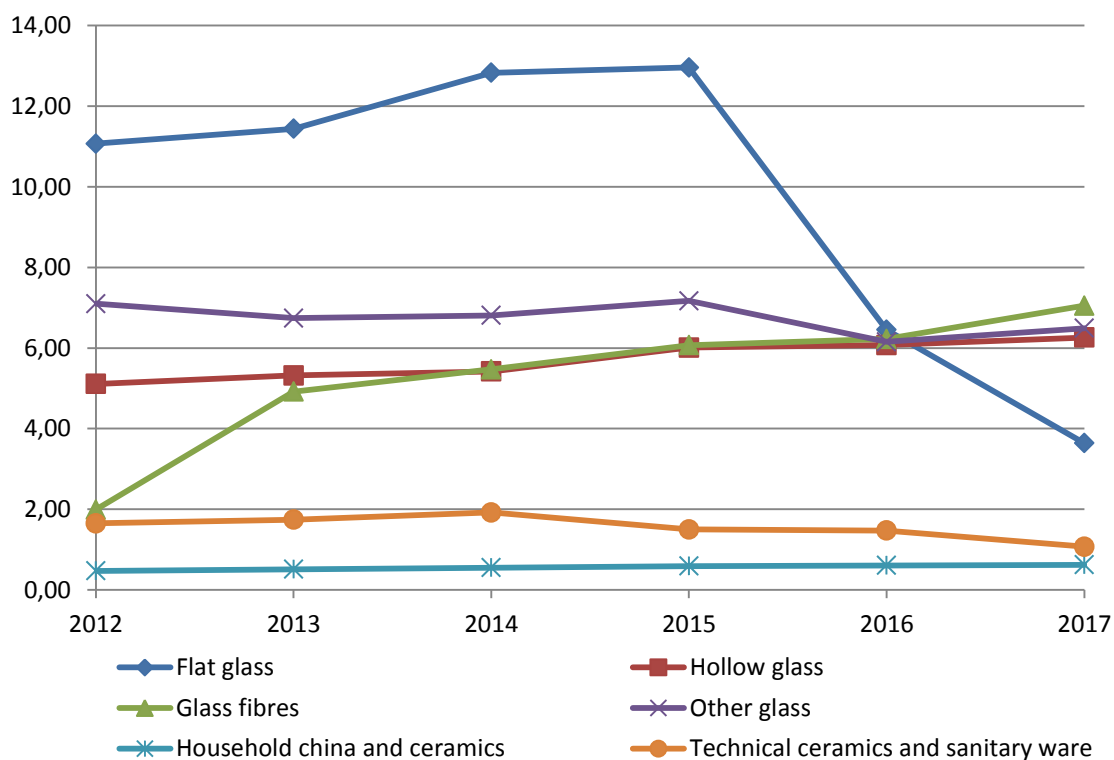
The export is stated further on in revenues from direct export in current prices (hereinafter direct export) and total export (i.e. direct export, indirect export).

The development of direct export is given in the following table. The hollow glass production includes utility and container glass. Due to the statistical investigation it is not possible to divide hollow glass to above mentioned production branches.

### Direct export (bill. CZK)

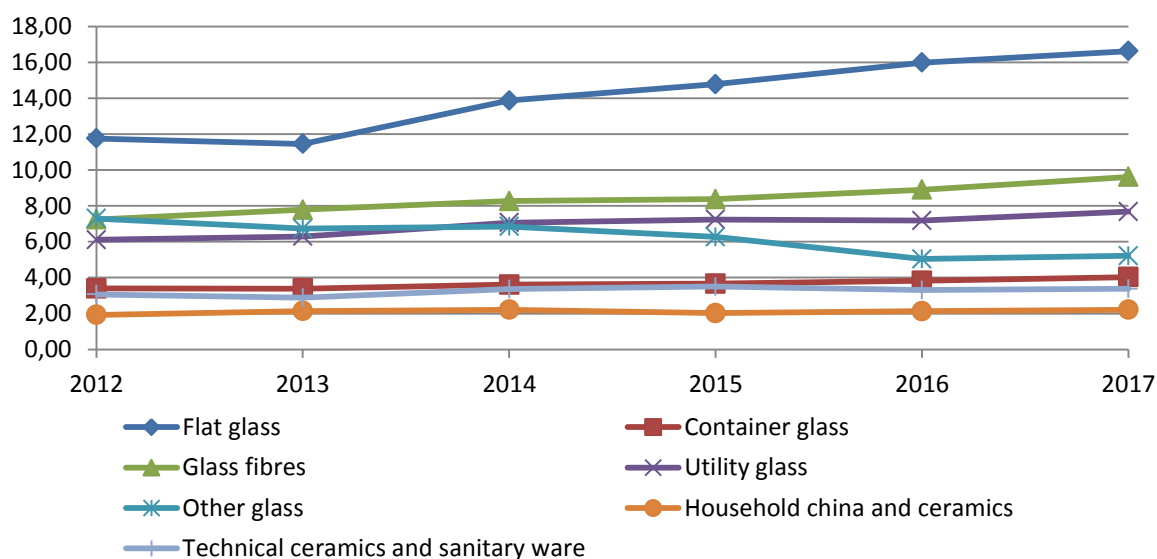
	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	11,07	11,44	12,83	12,96	6,45	3,64	56,4
Hollow glass	5,11	5,32	5,42	6,01	6,08	6,26	103,0
Glass fibres	1,99	4,92	5,47	6,07	6,22	7,05	113,3
Other glass	7,10	6,74	6,81	7,17	6,15	6,49	105,5
Glass total	25,27	28,42	30,53	32,21	24,90	23,44	94,1
Household china and ceramics	0,47	0,51	0,55	0,59	0,60	0,62	102,7
Technical ceramics and sanitary ware	1,65	1,74	1,92	1,50	1,47	1,07	72,7
Ceramics, total	2,12	2,25	2,47	2,09	2,07	1,69	81,5
<b>Glass and ceramics</b>	<b>27,39</b>	<b>30,67</b>	<b>33,00</b>	<b>34,30</b>	<b>26,98</b>	<b>25,13</b>	<b>93,1</b>

### Development of direct export (bill. CZK)



**Export (bill. CZK)**

	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	11,757	11,450	13,866	14,778	15,980	16,624	104,0
Container glass	3,393	3,391	3,613	3,667	3,829	4,031	105,3
Glass fibres	7,240	7,786	8,266	8,374	8,897	9,614	108,1
Utility glass	6,112	6,298	7,065	7,240	7,181	7,678	106,9
Other glass	7,292	6,730	6,851	6,266	5,036	5,214	103,5
Glass, total	35,794	35,655	39,661	40,325	40,923	43,161	105,5
Household china and ceramics	1,921	2,137	2,209	2,019	2,132	2,212	103,8
Technical ceramics and sanitary ware	3,067	2,882	3,364	3,501	3,307	3,382	102,3
Ceramics, total	4,988	5,019	5,573	5,520	5,439	5,594	102,8
<b>Glass and ceramics, total</b>	<b>40,782</b>	<b>40,674</b>	<b>45,234</b>	<b>45,845</b>	<b>46,362</b>	<b>48,755</b>	<b>105,2</b>

**Development of export (bill. CZK)**

The glass and ceramic industry of the Czech Republic is oriented to export, i.e. it is directly influenced by economic changes in the world, especially in the European Union where 73.0 % of export of investigated production branches are directed.

After the decline of this branch export within years 2008 and 2009, the export has been increasing since 2010. However, in comparison with 2016 the direct export in 2017 decreased by 6.9 %. The total export increased by 5.2 %. The direct export of investigated branches in 2017 was 25.13 bill. CZK, total export was 48.76 bill. CZK.

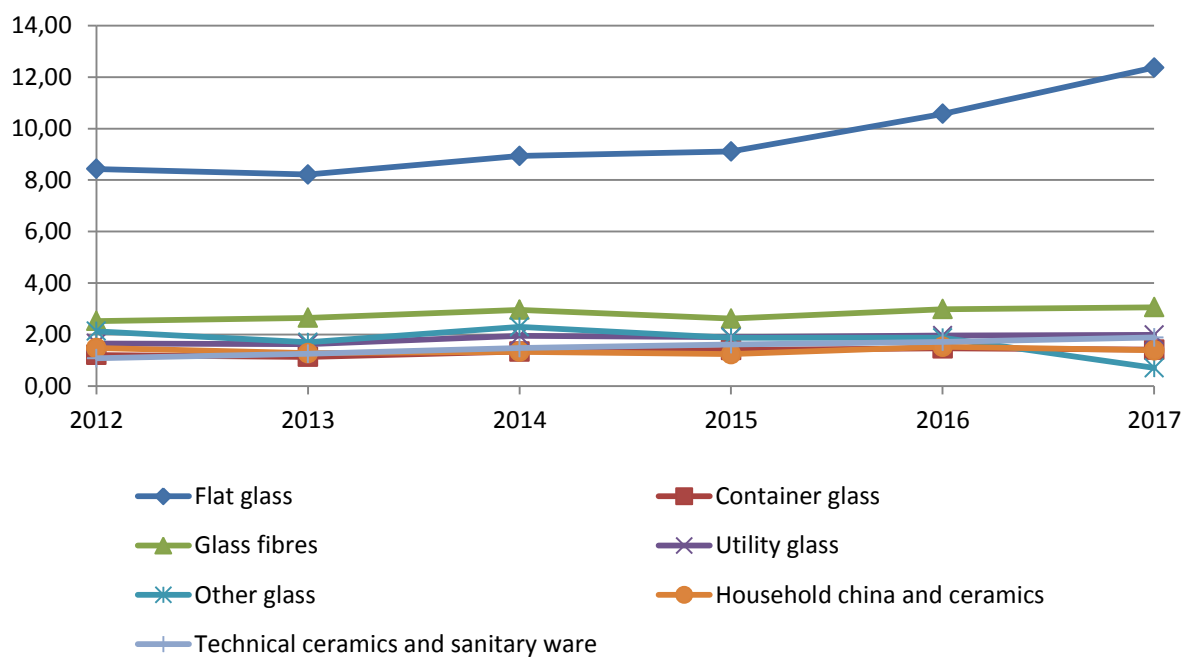
The export development in 2017 in individual branches is given in more details in Chapter 5, which analyses the export and import.

## Import

### Import (bill. CZK)

	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	8,433	8,212	8,937	9,111	10,57	12,367	117,0
Container glass	1,203	1,129	1,334	1,397	1,459	1,409	96,6
Glass fibres	2,520	2,646	2,960	2,617	2,982	3,054	102,4
Utility glass	1,651	1,624	1,953	1,897	1,956	1,978	101,1
Other glass	2,123	1,693	2,295	1,875	1,868	0,701	37,5
Glass, total	15,930	15,304	17,479	16,897	18,835	19,509	103,6
Household china and ceramics	1,474	1,270	1,33	1,232	1,518	1,385	91,2
Technical ceramics and sanitary ware	1,076	1,245	1,47	1,615	1,716	1,879	109,5
Ceramics, total	2,550	2,515	2,800	2,847	3,234	3,264	100,9
<b>Glass and ceramics, total</b>	<b>18,480</b>	<b>17,819</b>	<b>20,279</b>	<b>19,744</b>	<b>22,069</b>	<b>22,773</b>	<b>103,2</b>

### Import development (bill. CZK)



*The total import of the glass and ceramic industry products has been decreasing since 2011.*

*An increase appeared in 2014. In 2015 the inter-year decrease was by 2.6 % (2.03 bill. CZK), but in 2016 and 2017 it increased again by 3.2 % in 2017.*

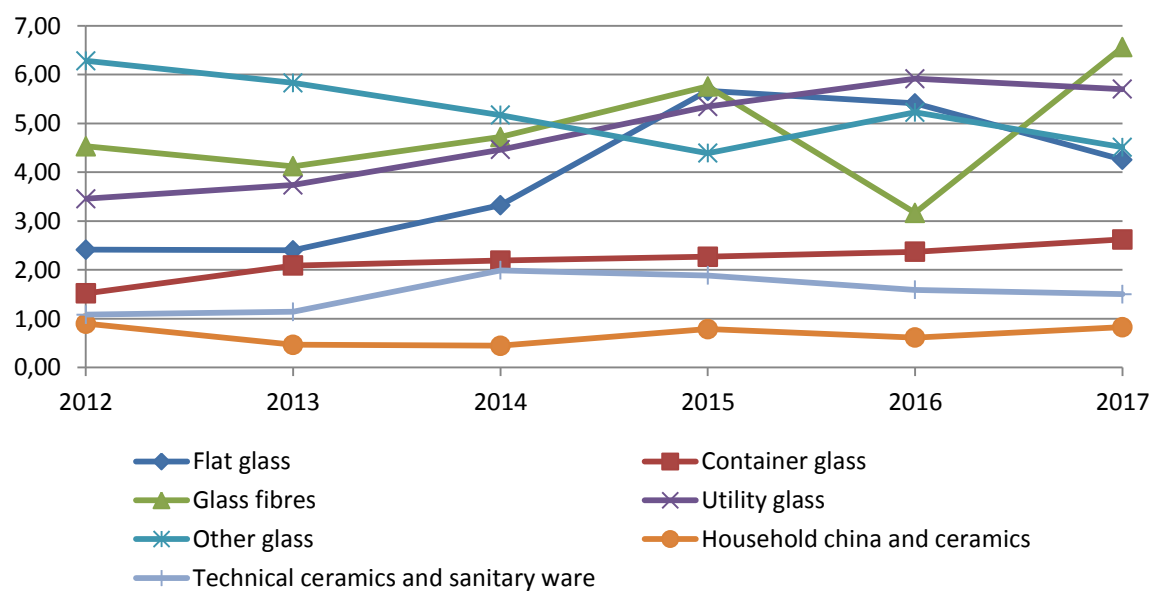
The import development in individual production branches in 2017 is given in more details in Chapter 5.

## Balance of foreign trade

### Balance of foreign trade (bill. CZK)

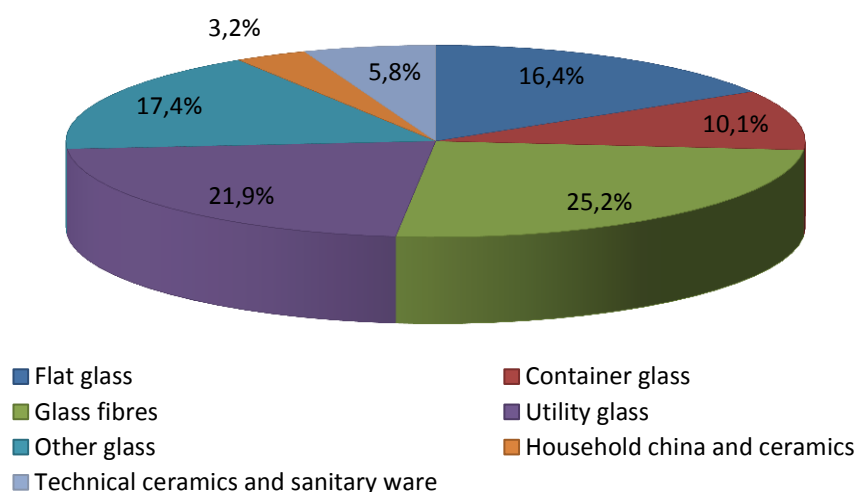
	2012	2013	2014	2015	2016	2017	index 17/16 (%)
Flat glass	2,415	2,402	3,324	5,667	5,410	4,257	78,7
Container glass	1,517	2,089	2,190	2,270	2,370	2,622	110,6
Glass fibres	4,532	4,120	4,720	5,757	3,168	6,560	207,1
Utility glass	3,457	3,739	4,461	5,343	5,915	5,700	96,4
Other glass	6,282	5,830	5,169	4,391	5,225	4,513	86,4
<b>Glass, total</b>	<b>18,203</b>	<b>18,180</b>	<b>19,864</b>	<b>23,428</b>	<b>22,088</b>	<b>23,652</b>	<b>107,1</b>
Household china and ceramics	0,899	0,466	0,447	0,787	0,614	0,827	134,7
Technical ceramics and sanitary ware	1,082	1,143	1,991	1,886	1,591	1,503	94,5
<b>Ceramics, total</b>	<b>1,981</b>	<b>1,609</b>	<b>2,438</b>	<b>2,673</b>	<b>2,205</b>	<b>2,330</b>	<b>105,7</b>
<b>Glass and ceramics, total</b>	<b>20,184</b>	<b>19,789</b>	<b>22,302</b>	<b>26,101</b>	<b>24,293</b>	<b>25,982</b>	<b>107,0</b>

### Development of balance of foreign trade (bill. CZK)





## Structure of balance of foreign trade



The branches of the glass and ceramic industry in the investigated period from 2012 till 2017 notably contributed to the active balance of foreign trade of the whole processing industry of the Czech Republic. The values of the balance of foreign trade confirm significantly important export orientation of this industry. The balance of foreign trade was 25.982 bill. CZK in 2017, it increased by 7.0 % in comparison with 2016.

## Effective home demand

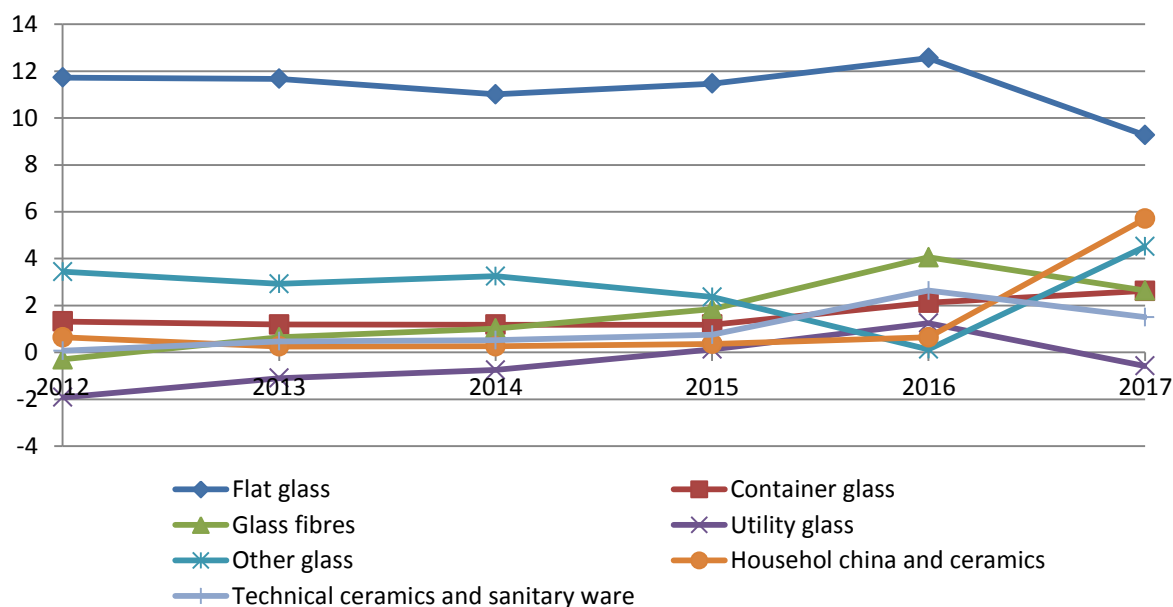
The effective home demand index is defined by the formula:

*(The revenues from industrial activities + Import – Export)*

### Effective home demand (bill. CZK)

	2012	2013	2014	2015	2016	2017
Flat glass	11,72	11,67	11,01	11,47	12,56	9,27
Container glass	1,32	1,19	1,18	1,18	2,12	2,62
Glass fibres	-0,30	0,64	1,02	1,85	4,06	2,64
Utility glass	-1,92	-1,10	-0,75	0,13	1,25	-0,58
Other glass	3,44	2,92	3,25	2,36	0,13	4,51
Househol china and ceramics	0,64	0,25	0,26	0,36	0,64	5,70
Technical ceramics and sanitary ware	0,07	0,47	0,52	0,75	2,64	1,50

## Development of effective home demand (bill. CZK)



The development of the effective home demand in individual groups of the glass and ceramic industry is differentiated and specific.

## Conclusions

After several years of slow growth signs of improvement begin to show in global economy. The world trade and processing industry grow and indicators of confidence in private sector vigorously strengthened. However, on the other side economical and political uncertainties in the world act negatively.

The Czech economy profits on good outer and inner conditions. In 2017 there was succeeded to keep the growth of revenues from previous years and keep the growth after decline in 2013. The main reason was the increase of demand for products intended to the automotive industry in the Czech Republic and success of producers in sales on new markets. The revenues for sale of the own products and services increased (by 4.4 %) in comparison with 2016. And, as a result of this, the productivity of labour from sales slightly increased by 0.3 %. In comparison with previous year the revenues for the direct export decreased by 6.9 %. The total export increased by 5.2 %, as well. Both values reached higher values than in the fault year 2008. The balance of foreign trade increased by 7.0 %.

The results in 2017 and the development in 2018 are dependent on the development of economy of the Czech Republic and on the development on foreign markets.

In the summary of prediction of the Ministry of Finance from July 2018 there is stated:

The growth of world economy stays stable and robust, but global uncertainties and risk significantly grow. They are related not only to results of massive fiscal stimulus in the USA, but also to new conditions between the Great Britain and the European Union due to the date of Brexit. Moreover,

the price of oil reached the highest level in last four years, the future of world market also arouse great fear.

Economic growth in Eurozone and in the European Union was in 2017 the highest in last 10 years. In the beginning of 2018 it slowed down a little. Although it is generally believed that this slowing down reflects various single factors, no turnover appeared in the development of confidence indices. In spite of this the fundamental factors are favourable. The economics of Eurozone can profit on deregulated financial conditions, which decrease costs of financing for private and public sector. Decreasing number of unemployed people and decreasing household indebtedness are a promise for future dynamics of private consumption. Similar evaluation, i.e. healthy basis and increased uncertainties can be related also on the Czech economy.

The inter-year growth of real gross domestic product in the 1st quarter of 2018 slowed down to 3.4 %. Also in an inter-quarter comparison (after taking away seasonal influences) the economical growth slightly slowed down to 0.5 %.

Good economic situation should continue also in the rest part of 2018 and in 2019, in spite of probably slowing dynamics. Economical growth should be further drawn by a household consumption, which will reflect a strong wage dynamics at an extremely low rate of unemployment, growing rate of participation and very high number of free working places. Investments should be stimulated not only through the means of the European structural and investment funds, by necessity of private sector to innovate technological equipment at imbalances on a labour market, but also by decreasing relative price of capital to price of labour at still low real interest rate. The growing uncertainties out of the Czech economy should be projected negatively on balance of foreign trade.

Therefore, there appears a slight decrease of prediction of growth of the real gross domestic product for 2018 from 3.6 % to 3.2 % and for 2019 from 3.3 % to 3.1 %.

The high growth of employment, which since the end of 2014 is permanently above the level of 1 %, has already exhausted the almost unexploited sources on labour market. The manpower shortage becomes a barrier of the extensive production growth, what motivate companies to investments increasing the productivity of labour. The space for further decline of unemployment is probably very limited already. With respect to the development in the 1st quarter we decrease slightly the prediction of rate of unemployment in 2018 from 2.4 % to 2.3 %, in 2019 we let it on 2.3 %.

### Prediction of the development of main macroeconomic indices

(Source: Ministry of Finance, July 2018)

		2016	2017	2018
Gross domestic product	increase %, s.c.	2,6	3,1	3,2
Average inflation rate	%	0,7	2,2	2,2
Unemployment rate	average %	4,0	3,2	2,3
Wages and salaries	increase %, b.c.	5,8	6,1	9,3
CZK / EUR	average per year	27	26,4	25,6

For a favourable development of the glass and ceramic industry the above mentioned facts are good news, however, it cannot be overestimated. The export orientation and dependence on a great number of related industrial branches, for which it delivers its products, make the glass and ceramic industry very vulnerable. Not only development of home demand but also future economic development, especially in Europe - the greatest export territory of the Czech glass and ceramic industry - will be important. However, exporters will have to face up also loosing markets in regions stricken with war conflicts. The increasing competition of countries of the Third World, and mainly from the Far East, is permanently a great problem. This competition impinges without exceptions all branches of the glass and ceramic industry investigated in this Annual Report.

Glass and ceramic industry is a traditional branch of the processing industry of the Czech Republic. During its long-term existence this branch went through periods of prosperity and also recessions. It is possible to say, that it has never face up to such uncertainty and unpredictability of development on markets like in last years. For companies' owners and managers, it is necessary not only to predict at the very least development on markets but also to search new markets and strengthen their marketing activities. Also a consistent orientation to the production with high added value must be carried out. At the same time the product innovations and related services must be strengthen as much as possible.



## **Export and import Development According to production branches in the period from 2011 till 2017**

### **Export**

In the following text the export of the assortment of the glass and ceramic industry is investigated according to the codes of the Customs Tariff, i.e. not only the direct export, but the total export from the Czech Republic.

### **Flat glass**

The export of flat glass in 2016 reached an amount of 15,206.5 mill. CZK. In comparison with 2015 the export increased by 2.9 %.

## Export of flat glass according to the assortment

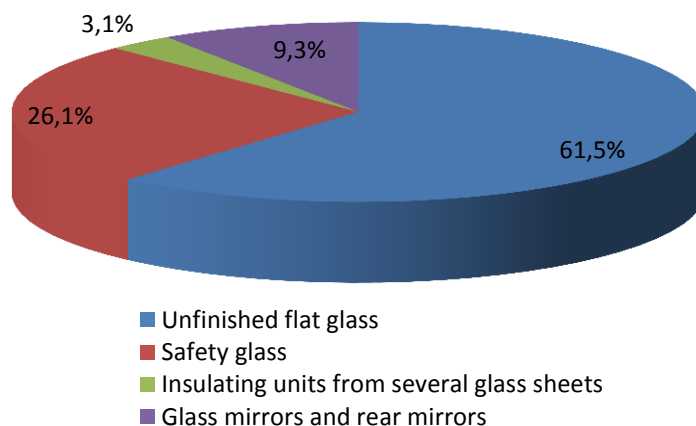
### Structure of export of flat glass according to the assortment in 2017 (t)

	2012			2013			2014		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
Unfinished flat glass	286 672,4	3 545,5	30,2	274 751,1	3 103,5	27,1	294 228,3	3 228,5	23,3
Safety glass	88 121,5	6 400,1	54,4	101 128,6	6 694,0	58,5	109 563,2	8 743,2	63,1
Insulating units from several glass sheets	8 033,6	321,6	2,7	8 717,7	318,0	2,8	13 727,3	474,6	3,4
Glass mirrors and rear mirrors	35 635,8	1 490,0	12,7	30 233,5	1 334,1	11,7	32 984,8	1 419,3	10,2
<b>Totally</b>	<b>418 463,3</b>	<b>11 757,2</b>	<b>100,0</b>	<b>414 830,9</b>	<b>11 449,6</b>	<b>100,0</b>	<b>450 503,6</b>	<b>13 865,6</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
Unfinished flat glass	315 500,0	3 522,0	23,8	337 721,7	3 836,2	25,2	339 093,6	3 419,8	20,6
Safety glass	110 371,1	9 144,3	61,9	125 758,2	9 144,3	60,1	143 574,6	10 827,5	65,1
Insulating units from several glass sheets	14 039,3	479,7	3,2	14 756,7	538,8	3,5	17 068,4	632,7	3,8
Glass mirrors and rear mirrors	40 159,6	1 632,3	11,0	47 306,7	1 687,2	11,1	51 384,0	1 744,3	10,5
<b>Totally</b>	<b>480 070,0</b>	<b>14 778,3</b>	<b>100,0</b>	<b>525 543,3</b>	<b>15 206,5</b>	<b>100,0</b>	<b>551 120,6</b>	<b>16 624,3</b>	<b>100,0</b>

### Structure of export of flat glass according to the assortment in 2017 (CZK)

The greatest share of export in weight units had the unfinished flat glass in 2017 with 61.5 % (84 % was created by float glass), followed by the safety glass export with 26 %. As far as the export in CZK, the situation was contrary. The greatest share had the export of safety glass with 65.1 %. The share of the unfinished flat glass export was 20.1 %.

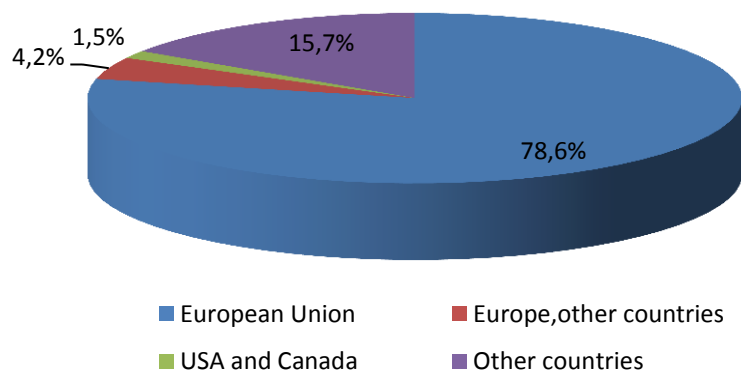




**Export of flat glass according to territories**

	2012			2013			2014		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	387 173,4	10 491,8	89,2	379 311,4	9 967,2	87,1	401 568,6	12 449,3	89,8
Europe,other countries	24 073,2	783,0	6,7	20 395,2	800,4	7,0	17 517,6	749,0	5,4
USA and Canada	2 306,9	56,5	0,5	1 341,1	51,9	0,5	2 647,5	128,2	0,9
Other countries	4 909,8	425,9	3,6	13 783,2	630,1	5,5	28 769,9	539,1	3,9
<b>Totally</b>	<b>418 463,3</b>	<b>11 757,2</b>	<b>100,0</b>	<b>414 830,9</b>	<b>11 449,6</b>	<b>100,0</b>	<b>450 503,6</b>	<b>13 865,6</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	444 096,7	13 289,0	89,9	489 230,4	14 406,7	94,7	278 313,2	13 068,5	78,6
Europe,other countries	19 012,2	561,8	3,8	19 886,3	534,8	3,5	31 523,5	696,1	4,2
USA and Canada	3 066,2	243,9	1,7	2 265,2	163,9	1,1	3 446,0	246,1	1,5
Other countries	13 895,0	683,6	4,6	14 161,4	101,0	0,7	237 838,8	2 613,6	15,7
<b>Totally</b>	<b>480 070,1</b>	<b>14 778,3</b>	<b>100,0</b>	<b>525 543,3</b>	<b>15 206,4</b>	<b>100,0</b>	<b>551 121,5</b>	<b>16 624,3</b>	<b>100,0</b>

**Structure of export of flat glass according to the assortment in 2017 (CZK)**

A substantial part of flat glass export was directed to the European Union countries. In 2017 the share on export was 78.6 %. The greatest customers were France, Germany, Italy, Spain and the Netherlands. The greatest customers out of the European Union were Algeria, the USA and Bosnia and Herzegovina.

The structure of export corresponds to the final use of the assortment of flat glass (mostly utilized in the building and automotive industries) and to the production and trade strategy of companies.

## Container glass

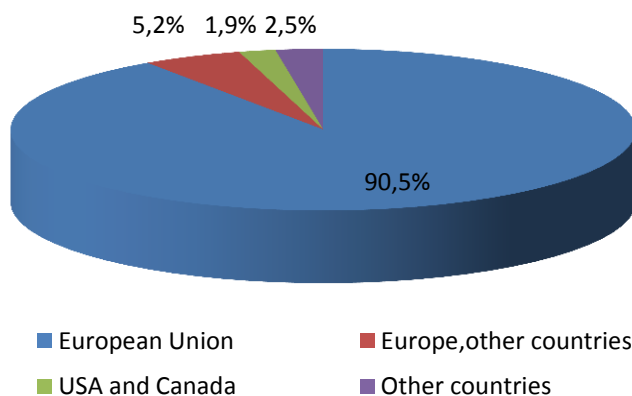
Container glass export in 2017 was 4031.2 mill. CZK. In comparison with 2016 the export slightly increased.

### Export of container glass according to territories

	2012			2013			2014		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	293 835,3	2 992,9	88,2	280 335,3	2 993,9	88,3	286 545,4	3 244,0	89,8
Europe,other countries	28 423,2	335,2	9,9	23 225,2	286,4	8,4	17 468,5	236,0	6,5
USA and Canada	1 848,2	36,2	1,1	1 430,8	30,8	0,9	3 809,5	85,0	2,4
Other countries	1 334,1	28,4	0,8	4 302,6	80,0	2,4	2 129,6	48,0	1,3
<b>Totally</b>	<b>325 440,8</b>	<b>3 392,7</b>	<b>100,0</b>	<b>309 293,9</b>	<b>3 391,1</b>	<b>100,0</b>	<b>309 953,0</b>	<b>3 612,9</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	313 740,1	3 514,7	90,9	287 631,7	3 344,9	87,3	308 571,3	3 647,3	90,5
Europe,other countries	11 019,4	168,1	4,3	11 595,8	183,7	4,8	14 316,0	208,2	5,2
USA and Canada	3 587,3	79,8	2,1	2 177,7	84,1	2,2	2 365,4	76,5	1,9
Other countries	5 026,6	104,8	2,7	9 081,3	217,2	5,7	3 565,3	99,1	2,5
<b>Totally</b>	<b>333 373,4</b>	<b>3 867,4</b>	<b>100,0</b>	<b>310 486,5</b>	<b>3 829,9</b>	<b>100,0</b>	<b>328 817,9</b>	<b>4 031,2</b>	<b>100,0</b>

### Structure of export of container glass according to territories in 2017 (CZK)



The export is determined by the character of use of a substantial part of container glass assortment. It is not economical to deliver bottles and preserve jars to long distances. In 2017 90.5 % of export was intended to the European Union countries. The greatest customers were Germany, Poland, Slovakia, Austria and Italy. The 5.2 % of export was directed to other European countries. The greatest customers from these countries were Switzerland and Russia.

## Glass fibres and products made of

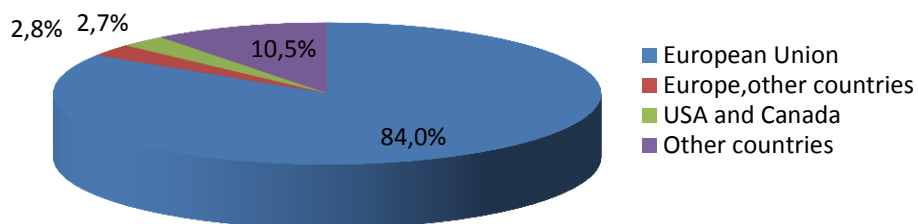
The export of glass fibres and products made of in 2017 was 9614.6 mill. CZK. In comparison with 2016 it decreased by 7.5 % (8897.6 mill. CZK).

### Export of glass fibres and products made of according to territories

	2012			2013			2014		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	144 169,5	6 530,9	90,2	134 110,3	6 785,8	87,1	131 985,5	6 544,6	79,2
Europe,other countries	8 275,7	279,5	3,9	8 404,4	252,0	3,2	4 546,7	231,7	2,8
USA and Canada	1 228,2	74,8	1,0	1 163,9	75,2	1,0	1 870,1	5,3	0,1
Other countries	6 112,4	354,4	4,9	15 697,0	673,5	8,6	14 273,1	1 484,7	18,0
<b>Totally</b>	<b>159 785,8</b>	<b>7 239,6</b>	<b>100,0</b>	<b>159 375,6</b>	<b>7 786,5</b>	<b>100,0</b>	<b>152 675,4</b>	<b>8 266,3</b>	<b>100,0</b>

	2015			2016			2017		
	Netto ( t )	mil.Kč	Share (%)	Netto ( t )	mil.Kč	Share (%)	Netto ( t )	mil.Kč	Share (%)
European Union	143 555,7	7 240,3	86,5	149 212,2	7 689,1	86,4	165 292,0	8 080,6	84,0
Europe,other countries	4 392,0	233,0	2,8	3 032,1	198,0	2,2	4 761,5	267,1	2,8
USA and Canada	3 405,5	169,0	2,0	2 202,7	94,3	1,1	5 725,5	262,1	2,7
Other countries	13 728,4	732,2	8,7	16 751,7	916,2	10,3	19 512,4	1 004,9	10,5
<b>Totally</b>	<b>165 081,5</b>	<b>8 374,5</b>	<b>100,0</b>	<b>171 198,8</b>	<b>8 897,6</b>	<b>100,0</b>	<b>195 291,4</b>	<b>9 614,6</b>	<b>100,0</b>

### Structure of export of glass fibres and products made of according to territories in 2017 (CZK)



A substantial part of export (84 %) was realized in the European Union countries. The greatest customers in 2017 were Germany, Poland, France, Slovakia, Italy and Great Britain. As far as countries out of the European Union it was Turkey and the USA.

## Utility glass

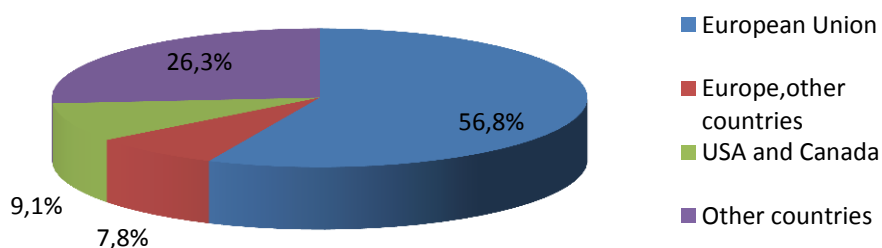
The export of utility glass belongs to traditional export branches of the Czech processing industry. In 2017 the export was in amount of 7678.2 mill. CZK. In comparison with 2016 it increased a little.

### Export of utility glass according to territories

	2012			2013			2014		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	41 483,4	2 878,3	47,1	46 550,5	3 044,2	48,3	53 136,5	3 651,4	51,7
Europe,other countries	9 670,8	928,1	15,2	9 418,2	978,2	15,5	8 921,2	962,5	13,6
USA and Canada	2 702,0	443,2	7,3	2 485,6	420,3	6,7	2 898,4	489,7	6,9
Other countries	12 403,4	1 862,8	30,5	12 470,9	1 855,5	29,5	13 749,4	1 961,0	27,8
<b>Totally</b>	<b>66 259,6</b>	<b>6 112,4</b>	<b>100,0</b>	<b>70 925,2</b>	<b>6 298,2</b>	<b>100,0</b>	<b>78 705,5</b>	<b>7 064,5</b>	<b>100,0</b>

	2015			2016			2017		
	Netto ( t )	mil.Kč	Share (%)	Netto ( t )	mil.Kč	Share (%)	Netto ( t )	mil.Kč	Share (%)
European Union	52 511,3	3 913,3	54,0	57 024,5	4 069,3	56,7	60 368,8	4 359,2	56,8
Europe,other countries	5 985,7	611,1	8,4	6 354,4	626,6	8,7	6 371,4	599,2	7,8
USA and Canada	4 111,2	671,9	9,3	4 645,5	673,0	9,4	5 175,7	699,0	9,1
Other countries	14 805,8	2 044,0	28,2	13 604,2	1 812,5	25,2	15 788,6	2 020,9	26,3
<b>Totally</b>	<b>77 413,9</b>	<b>7 240,3</b>	<b>100,0</b>	<b>81 628,6</b>	<b>7 181,4</b>	<b>100,0</b>	<b>87 704,5</b>	<b>7 678,2</b>	<b>100,0</b>

### Structure of export of utility glass according to territories in 2017 (CZK)



It is possible to say that the utility glass assortment is exported to the whole world. The share of export in 2017 to the European countries was 56.8 %. The greatest customers were Germany, France, Slovakia, Austria, Italy, Spain, Sweden and Poland. The share on export directed to the Other countries (export to 80 countries) and to the USA and Canada was in amount of 35.4 %. The greatest customers were the USA, Iran, Brazil, the United Arab Emirates, China, India and Turkey.

## Other glass

The assortment of the other glass export is very wide. It includes technical, laboratory and laboratory apparatus glass, technical spheres, glass industrial apparatuses, protective welding glass, optical glass, and also the production of glass blocks, glass fashion jewellery semiproducts and production of lighting glass, is incorporated.

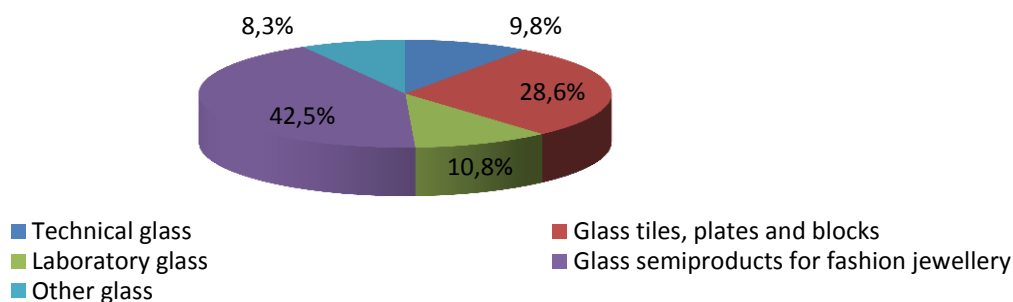
The other glass export in 2017 reached amount of 5214 mill. CZK, what is by 3.4 % more than in 2016 (5036.6 mill. CZK). In 2017 lighting glass which is not stated in codes for the export and import of glass (Products for electrical lighting devices made of glass, except reflectors and facet glass etc., glass decorations for electrical chandeliers, approx. 300 mill. CZK) was not included to the export.

### Export of other glass according to assortment

	2012			2013			2014		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
Technical glass	4 674,7	498,1	6,8	3 813,5	405,6	6,0	3 936,5	464,2	6,8
Glass tiles, plates and blocks	70 446,9	1 348,1	18,5	71 226,7	1 422,2	21,1	58 463,5	1 497,5	21,9
Laboratory glass	3 800,2	541,6	7,4	3 012,4	442,3	6,6	3 095,1	508,9	7,4
Glass semiproducts for fashion jewellery	4 936,5	4 462,0	61,2	5 075,4	4 293,7	63,8	4 889,6	4 168,8	60,8
Other glass	22 212,4	441,9	6,1	10 235,6	166,5	2,5	16 434,0	211,6	3,1
<b>Totally</b>	<b>106 070,7</b>	<b>7 291,7</b>	<b>100,0</b>	<b>93 363,6</b>	<b>6 730,3</b>	<b>100,0</b>	<b>86 818,7</b>	<b>6 851,0</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share (%)	netto ( t )	mil.Kč	share (%)	netto ( t )	mil.Kč	share (%)
Technical glass	4 176,8	500,0	8,0	4 816,8	543,9	10,8	4 251,5	511,4	9,8
Glass tiles, plates and blocks	57 652,5	1 444,9	23,1	57 249,9	1 368,4	27,2	64 013,4	1 493,2	28,6
Laboratory glass	3 140,2	556,9	8,9	2 789,3	555,3	11,0	2 851,4	562,2	10,8
Glass semiproducts for fashion jewellery	4 606,9	3 546,1	56,6	3 755,4	2 319,3	46,0	3 565,6	2 216,4	42,5
Other glass	20 982,5	217,9	3,5	41 079,0	249,7	5,0	32 414,5	430,8	8,3
<b>Totally</b>	<b>90 558,9</b>	<b>6 265,8</b>	<b>100,0</b>	<b>109 690,4</b>	<b>5 036,6</b>	<b>100,0</b>	<b>107 096,4</b>	<b>5 214,0</b>	<b>100,0</b>

### Structure of other glass export according to assortment in 2017 (CZK)



The greatest share with 42.5 % has the export of fashion jewellery and glass fashion jewellery semiproducts. The export of this assortment which is traditional in the Czech Republic has been facing up still stronger and substantially cheaper competition from the Far East. In comparison with 2016 the share of glass tiles, plates and bricks (28.6 %) increased, on the contrary the share of glass fashion jewellery semiproducts decreased again (42.5 %).

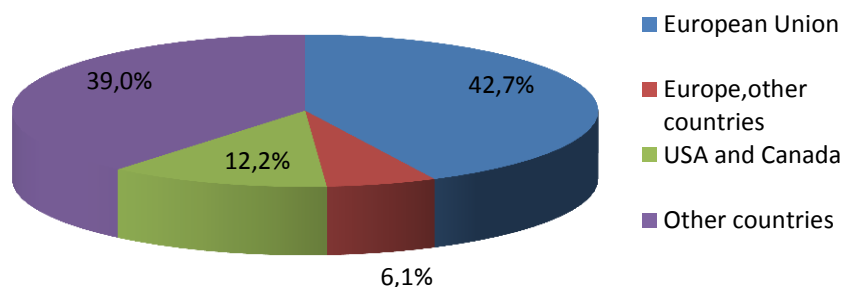
In the following table the export of other glass according to territories is given.

#### Export of other glass according to territories

	2012			2013			2014		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	59 141,6	2 564,8	35,2	50 455,9	2 415,2	35,9	53 380,2	2 477,6	36,2
Europe,other countries	5 792,3	312,5	4,3	4 600,3	410,0	6,1	5 536,7	455,7	6,7
USA and Canada	7 504,3	475,2	6,5	7 106,4	466,1	6,9	6 314,0	490,5	7,2
Other countries	33 632,5	3 939,2	54,0	31 201,0	3 439,0	51,1	21 587,9	3 427,1	50,0
<b>Totally</b>	<b>106 070,7</b>	<b>7 291,7</b>	<b>100,0</b>	<b>93 363,6</b>	<b>6 730,3</b>	<b>100,0</b>	<b>86 818,8</b>	<b>6 850,9</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)	netto ( t )	mil. Kč	share (%)
European Union	52 508,5	2 394,6	38,2	66 729,1	2 025,3	40,2	56 595,1	2 228,1	42,7
Europe,other countries	3 364,8	323,9	5,2	5 215,7	346,7	6,9	5 298,0	317,5	6,1
USA and Canada	5 998,9	599,3	9,6	9 537,4	598,8	11,9	11 916,4	634,5	12,2
Other countries	28 686,6	2 948,0	47,0	28 208,3	2 065,9	41,0	33 187,0	2 033,9	39,0
<b>Totally</b>	<b>90 558,8</b>	<b>6 265,8</b>	<b>100,0</b>	<b>109 690,5</b>	<b>5 036,7</b>	<b>100,0</b>	<b>106 996,5</b>	<b>5 214,0</b>	<b>100,0</b>

#### Structure of export of other glass according to territories in 2017 (CZK)



In contrast with flat, container and fibre glass export and products made of, the most of the other glass export (39 %) is oriented to the countries out of Europe. In each group of products there is a different situation and it can differ according to orders every year. In 2017 the share of export of glass tiles, plates and blocks assortment (70.4 %), laboratory glass (70.5 %) and technical glass (54.9 %) to the European Union prevailed. On the other side the export of glass semiproducts for fashion jewellery assortment (77.9 %) prevailed to the Other countries, including the USA and Canada.

The greatest customers in the European Union were Germany, Poland, Italy, France, Belgium, Austria and Romania, in the other European countries Russia, Ukraine, Switzerland and Norway. From the

Other countries and the USA and Canada the greatest customers, mostly of fashion jewellery and glass semiproducts for fashion jewellery, were the United Arab Emirates, China, Hongkong, the USA, Japan and India.

## Household china and ceramics

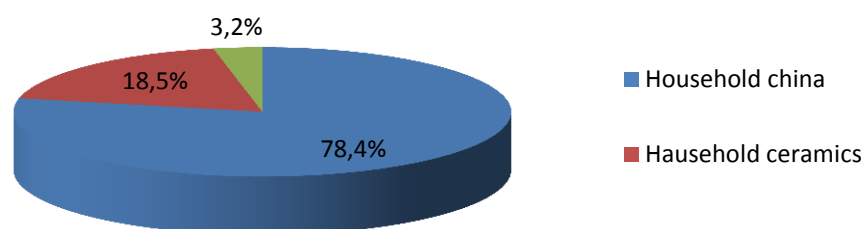
The household china export similarly as the utility glass export belongs to the traditional export branches of the Czech processing industry. In 2017 the export was 2211.7 mill. CZK. In comparison with 2016 the export increased by 3.6 %.

### Export of household china and ceramics according to the assortment

	2012			2013			2014		
	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)
Household china	14 549,7	1 713,0	89,1	17 763,6	1 890,4	88,5	15 730,9	1 909,7	86,4
Household ceramics	1 377,1	127,1	6,6	1 637,8	154,3	7,2	1 967,2	225,0	10,2
Decorative and figural china and ceramics	381,0	81,7	4,3	369,7	91,9	4,3	323,7	74,5	3,4
<b>Totally</b>	<b>16 307,8</b>	<b>1 921,8</b>	<b>100,0</b>	<b>19 771,1</b>	<b>2 136,6</b>	<b>100,0</b>	<b>18 021,8</b>	<b>2 209,2</b>	<b>100,0</b>

	2015			2016			2017		
	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)
Household china	14 470,7	1 739,7	86,2	13 449,6	1 720,4	80,7	13 260,5	1 733,3	78,4
Household ceramics	1 799,5	202,2	10,0	1 940,1	352,8	16,5	2 118,7	408,2	18,5
Decorative and figural china and ceramics	303,3	77,3	3,8	283,6	59,2	2,8	920,8	70,2	3,2
<b>Totally</b>	<b>16 573,5</b>	<b>2 019,2</b>	<b>100,0</b>	<b>15 673,3</b>	<b>2 132,4</b>	<b>100,0</b>	<b>16 300,0</b>	<b>2 211,7</b>	<b>100,0</b>

### Structure of export of household china and ceramics according to the assortment in 2017 (CZK)



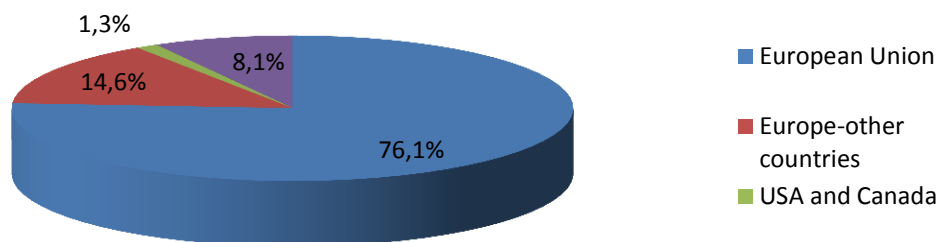
The share of household china in the branch household china and ceramics is 78.4 %.



**Export of household china and ceramics according to territories**

	2012			2013			2014		
	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)
European Union	12 040,1	1 079,8	56,2	15 499,8	1 277,8	59,8	14 201,3	1 353,2	61,3
Europe-other countries	3 052,5	496,9	25,9	3 054,4	539,0	25,2	2 473,0	492,2	22,3
USA and Canada	384,2	101,7	5,3	114,8	27,0	1,3	120,0	24,3	1,1
Other countries	831,8	243,4	12,7	1 102,1	292,8	13,7	1 227,5	339,6	15,4
<b>Totally</b>	<b>16 308,6</b>	<b>1 921,8</b>	<b>100,0</b>	<b>19 771,1</b>	<b>2 136,6</b>	<b>100,0</b>	<b>18 021,8</b>	<b>2 209,3</b>	<b>100,0</b>

	2015			2016			2017		
	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)
European Union	13 662,1	1 426,9	70,7	13 111,4	1 578,2	74,0	13 705,1	1 682,8	76,1
Europe,other countries	1 569,4	363,7	18,0	1 745,0	349,9	16,4	1 517,4	322,0	14,6
USA and Canada	134,8	22,1	1,1	109,1	19,8	0,9	167,7	27,8	1,3
Other countries	1 207,2	206,5	10,2	707,8	184,5	8,7	909,8	179,1	8,1
<b>Totally</b>	<b>16 573,5</b>	<b>2 019,2</b>	<b>100,0</b>	<b>15 673,3</b>	<b>2 132,4</b>	<b>100,0</b>	<b>16 300,0</b>	<b>2 211,7</b>	<b>100,0</b>

**Structure of export of household china and ceramics according to territories in 2017 (CZK)**

As follows from the above given table and graph, there is visible that export to all investigated territories is relatively stable without significant decreases and increases.

The greatest customers in the European Union countries were Germany, Slovakia, Sweden and Austria. In the other European countries, it was Russia and Switzerland. In the group of Other countries, incl. the USA and Canada, the export was directed to 55 countries of the world. The greatest customers in 2017 were the USA and Korea.

The household china export was very strongly influenced by substantially cheaper ware from the Far East like the export of utility glass and glass semiproducts for fashion jewellery.

## Technical ceramics and sanitary ware

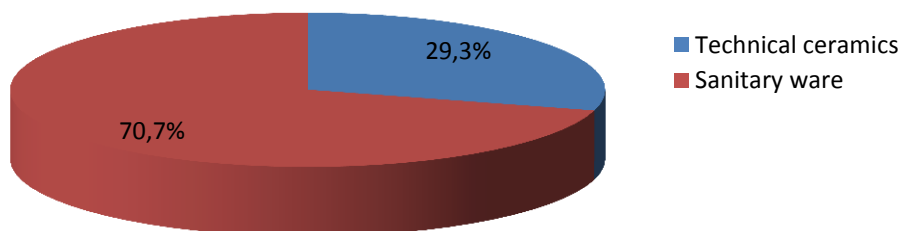
The technical ceramics and sanitary ware export was 3382.4 mill. CZK in 2017. In comparison with 2016 the export increased by 2.2 %.

### Export of technical ceramics and sanitary ware according to the assortment

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Technical ceramics	4 598,7	1 165,0	38,0	7 524,0	1 014,5	35,2	6 582,5	1 251,5	37,2
Sanitary ware	32 584,5	1 902,3	62,0	31 904,4	1 868,4	64,8	33 045,4	2 112,2	62,8
<b>Totally</b>	<b>37 183,2</b>	<b>3 067,3</b>	<b>100,0</b>	<b>39 428,4</b>	<b>2 882,9</b>	<b>100,0</b>	<b>39 627,9</b>	<b>3 363,7</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Technical ceramics	4 751,1	1 215,3	34,7	4 740,6	971,2	29,4	4 665,5	992,7	29,3
Sanitary ware	35 532,6	2 286,0	65,3	35 346,9	2 336,2	70,6	36 128,2	2 389,7	70,7
<b>Totally</b>	<b>40 283,7</b>	<b>3 501,3</b>	<b>100,0</b>	<b>40 087,5</b>	<b>3 307,4</b>	<b>100,0</b>	<b>40 793,7</b>	<b>3 382,4</b>	<b>100,0</b>

### Structure of export of technical ceramics and sanitary ware according to the assortment in 2017 (CZK)



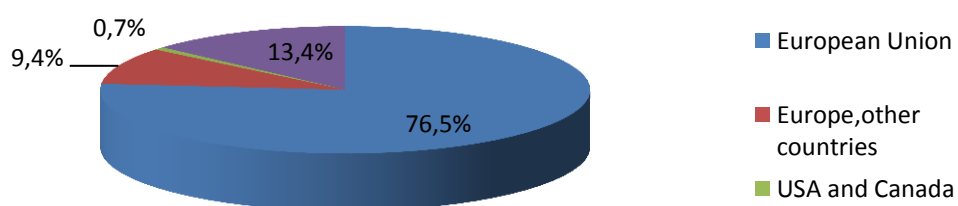
In 2017 the sanitary ware shared with 70.7% and the technical ceramics with 29.3 % on export.

### Export of technical ceramics and sanitary ware according to territories

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	29 664,8	2 066,1	67,4	31 605,5	1 983,9	68,8	31 635,0	2 248,6	66,8
Europe, other countries	3 883,7	310,2	10,1	3 781,8	270,8	9,4	4 542,2	320,8	9,5
USA and Canada	113,1	20,2	0,7	119,7	20,7	0,7	212,2	34,6	1,0
Other countries	3 521,6	670,8	21,9	3 921,4	607,5	21,1	3 238,5	759,7	22,6
<b>Totally</b>	<b>37 183,2</b>	<b>3 067,3</b>	<b>100,0</b>	<b>39 428,4</b>	<b>2 882,9</b>	<b>100,0</b>	<b>39 627,9</b>	<b>3 363,7</b>	<b>100,0</b>

	2015			2016			2017		
	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)	netto (t)	mil.Kč	share (%)
European Union	32 075,2	2 502,1	71,5	32 188,2	2 532,4	76,6	32 103,5	2 587,2	76,5
Europe,other countries	4 100,5	299,2	8,5	3 483,9	271,7	8,2	4 352,5	317,4	9,4
USA and Canada	244,2	36,1	1,0	116,6	23,0	0,7	122,0	24,6	0,7
Other countries	3 863,8	663,9	19,0	4 298,8	480,2	14,5	4 215,8	453,2	13,4
<b>Totally</b>	<b>40 283,7</b>	<b>3 501,3</b>	<b>100,0</b>	<b>40 087,5</b>	<b>3 307,3</b>	<b>100,0</b>	<b>40 793,8</b>	<b>3 382,4</b>	<b>100,0</b>

### Structure of export of technical ceramics and sanitary ware according to territories in 2017 (CZK)



A substantial part of both assortments was exported to the countries of Europe. Sanitary ware shared on export to the European countries in 2017 with 85.9 % (from which 75.7 % to the European Union), technical ceramics shared on the export with 82.0 % (from which 78.7 % to the European Union). Germany, Great Britain and Slovakia belong to the greatest customers of sanitary ware in Europe.

Due to an unpleasant development in the building industry in the European Union, sanitary ware producers look for new markets in the countries out of Europe. Sanitary ware is exported e.g. to China, the Republic of South Africa, Tunis, Oman, Nigeria and Mongolia.

## Import

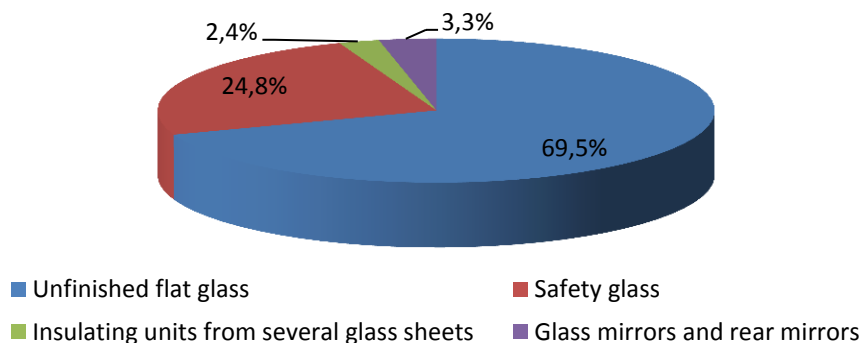
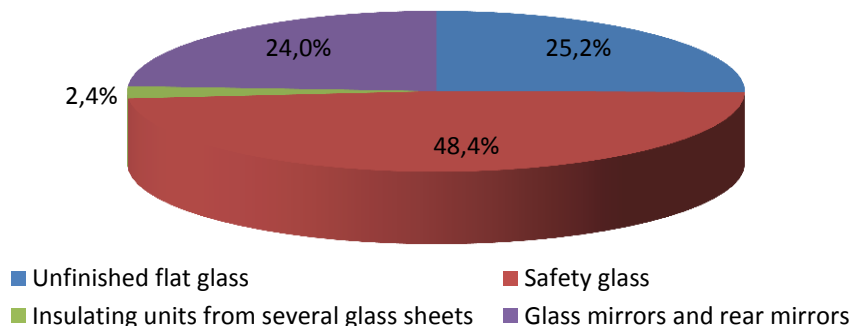
### Flat glass

The import of flat glass assortment was in 2017 in amount of 12,367.9 mill. CZK. In comparison with 2016 it increased by 14.6 % (10,563.1 mill. CZK).

**Import of flat glass according to the assortment**

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Unfinished flat glass	210 393,8	2 925,9	34,7	192 847,3	2 639,1	32,1	210 097,9	2 877,1	32,2
Safety glass	72 876,8	3 487,7	41,4	64 210,2	3 588,2	43,7	62 329,1	3 887,7	43,5
Insulating units from several glass sheets	8 978,4	266,6	3,2	8 146,9	263,4	3,2	6 977,3	247,5	2,8
Glass mirrors and rear mirrors	9 544,2	1 753,1	20,8	9 447,0	1 721,6	21,0	9 756,6	1 925,7	21,5
<b>Totally</b>	<b>301 793,2</b>	<b>8 433,3</b>	<b>100,0</b>	<b>274 651,4</b>	<b>8 212,3</b>	<b>100,0</b>	<b>289 160,9</b>	<b>8 938,0</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Unfinished flat glass	181 369,0	2 613,2	28,7	206 741,3	2 869,6	27,2	229 361,8	3 112,6	25,2
Safety glass	63 943,7	4 263,5	46,9	69 987,7	5 124,2	48,5	81 744,7	5 983,9	48,4
Insulating units from several glass sheets	6 181,3	217,7	2,4	6 421,5	233,1	2,2	7 763,4	302,3	2,4
Glass mirrors and rear mirrors	9 301,1	1 996,4	22,0	9 791,2	2 336,2	22,1	10 964,6	2 969,1	24,0
<b>Totally</b>	<b>260 795,1</b>	<b>9 090,8</b>	<b>100,0</b>	<b>292 941,7</b>	<b>10 563,1</b>	<b>100,0</b>	<b>329 834,5</b>	<b>12 367,9</b>	<b>100,0</b>

**Structure of import of flat glass according to the assortment in 2017 (t)****Structure of import of flat glass according to the assortment in 2017 (CZK)**

As follows from the above stated table (expressed in CZK), the import of all investigated assortments increased. The share on the flat glass import in mass had the import of unfinished flat glass with 72.4 %, from which float glass shows 91.0 %. The amount of import is given by the processing capacities in the Czech Republic.

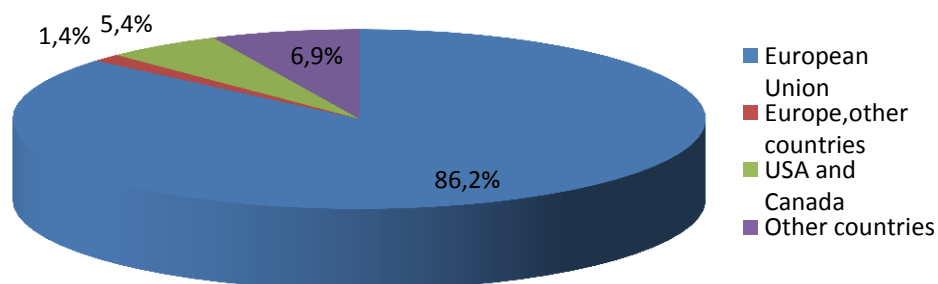
Toughened laminated safety glass shared with 48.4 % (expressed in CZK) on import. It is followed by unfinished flat glass with 25.2 %.

#### Import of flat glass according to territories

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	273 871,8	7 215,9	85,6	252 951,3	7 023,5	85,5	264 369,8	7 578,3	84,8
Europe,other countries	318,4	46,5	0,6	166,6	59,2	0,7	156,9	59,3	0,7
USA and Canada	426,3	352,4	4,2	420,7	352,8	4,3	418,7	400,6	4,5
Other countries	27 176,7	818,5	9,7	21 112,8	776,8	9,5	24 214,5	899,8	10,1
<b>Totally</b>	<b>301 793,2</b>	<b>8 433,3</b>	<b>100,0</b>	<b>274 651,4</b>	<b>8 212,3</b>	<b>100,0</b>	<b>289 159,9</b>	<b>8 938,0</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	244 007,0	7 627,5	83,9	278 716,1	9 165,2	86,8	308 501,8	10 665,5	86,2
Europe,other countries	78,1	52,4	0,6	971,9	91,4	0,9	3 546,1	170,3	1,4
USA and Canada	417,9	531,9	5,9	410,2	571,4	5,4	520,7	673,3	5,4
Other countries	16 292,1	879,1	9,7	12 843,5	735,2	7,0	17 266,0	858,8	6,9
<b>Totally</b>	<b>260 795,1</b>	<b>9 090,9</b>	<b>100,0</b>	<b>292 941,7</b>	<b>10 563,2</b>	<b>100,0</b>	<b>329 834,6</b>	<b>12 367,9</b>	<b>100,0</b>

#### Structure of import of flat glass according to territories in 2017 (CZK)



In 2017 there was imported 86.2 % of flat glass (expressed in CZK) to the Czech Republic from the European Union countries. The greatest importers from the European Union were Poland, Germany and Bulgaria.

## Container glass

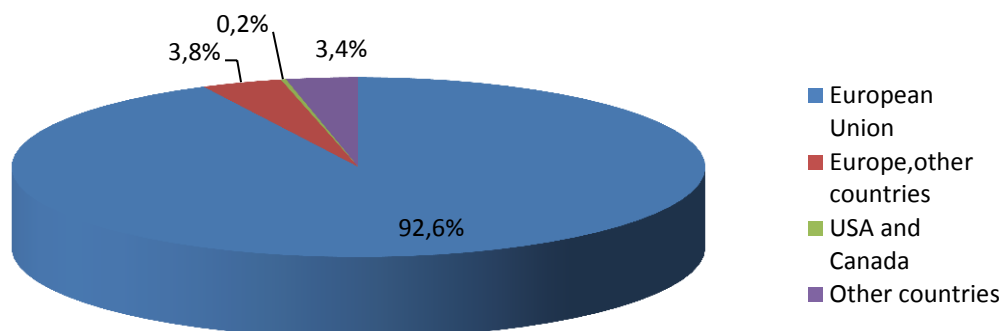
The container glass import in 2017 was in amount of 1408.6 mill. CZK, i.e. it was by 3.6 % less than in 2016.

### Import of container glass according to territories

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	102 250,1	1 147,7	95,4	104 663,2	1 097,8	97,3	108 696,8	1 202,4	90,1
Europe,other countries	4 114,3	35,2	2,9	1 326,4	12,6	1,1	11 737,9	98,1	7,3
USA and Canada	4,4	1,7	0,1	14,5	3,7	0,3	69,4	17,8	1,3
Other countries	398,8	18,8	1,6	393,6	14,6	1,3	508,0	15,9	1,2
<b>Totally</b>	<b>106 767,6</b>	<b>1 203,4</b>	<b>100,0</b>	<b>106 397,7</b>	<b>1 128,7</b>	<b>100,0</b>	<b>121 012,1</b>	<b>1 334,1</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	113 082,3	1 283,3	91,8	104 133,5	1 331,7	91,3	97 595,8	1 304,6	92,6
Europe,other countries	1 099,3	10,2	0,7	1 810,4	16,1	1,1	6 738,0	53,2	3,8
USA and Canada	5,8	5,0	0,4	7,0	3,6	0,3	14,4	3,5	0,2
Other countries	9 510,5	98,7	7,1	10 609,3	107,6	7,4	1 103,8	47,3	3,4
<b>Totally</b>	<b>123 698,0</b>	<b>1 397,2</b>	<b>100,0</b>	<b>116 560,1</b>	<b>1 459,1</b>	<b>100,0</b>	<b>105 452,0</b>	<b>1 408,6</b>	<b>100,0</b>

### Structure of import of container glass according to territories in 2017 (CZK)



The import like the export is determined by the character of use of container glass assortment. In 2017 there was realized 92.6 % of import from the European Union countries. The greatest importers were Germany, Poland and Slovakia.

## Glass fibres and products made of

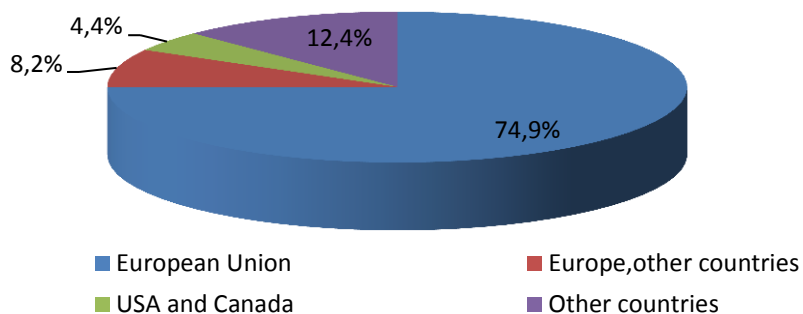
The import of glass fibres and products made of to the Czech Republic was 3054.1 mill. CZK in 2017, what is by 2.34 % more than in 2016.

**Import of glass fibres and products made of according to territories**

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	48 275,6	1 832,8	72,7	41 449,5	2 054,6	77,7	46 610,1	2 253,6	76,1
Europe,other countries	1 512,2	102,4	4,1	1 426,1	94,7	3,6	1 786,6	129,0	4,4
USA and Canada	546,5	88,4	3,5	529,0	91,1	3,4	663,3	124,0	4,2
Other countries	13 705,3	496,1	19,7	9 936,8	405,2	15,3	10 272,2	453,3	15,3
<b>Totally</b>	<b>64 039,6</b>	<b>2 519,7</b>	<b>100,0</b>	<b>53 341,4</b>	<b>2 645,6</b>	<b>100,0</b>	<b>59 332,2</b>	<b>2 959,9</b>	<b>100,0</b>

	2015			216			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	41 265,1	2 053,3	78,5	45 534,0	2 275,3	76,3	45 703,2	2 288,9	74,9
Europe,other countries	1 862,6	82,1	3,1	3 223,4	102,3	3,4	9 159,8	250,6	8,2
USA and Canada	965,6	127,0	4,9	1 477,3	148,4	5,0	901,3	135,0	4,4
Other countries	6 504,6	354,6	13,5	9 558,3	456,6	15,3	7 526,2	379,5	12,4
<b>Totally</b>	<b>50 597,8</b>	<b>2 617,0</b>	<b>100,0</b>	<b>59 793,0</b>	<b>2 982,5</b>	<b>100,0</b>	<b>63 290,5</b>	<b>3 054,1</b>	<b>100,0</b>

**Structure of import of glass fibres and products made of according to territories in 2017 (CZK)**

The share of the European Union countries on import was 74.9 %. The greatest importers were Germany, Poland, France, Belgium and Austria. The importers from the other European countries were Russia and Taiwan.

**Utility glass**

The utility glass import in 2017 was 1977.7 mill. CZK.

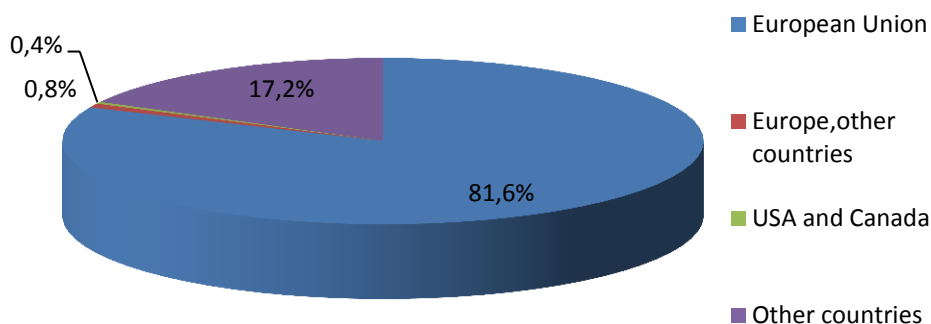
**Import of utility glass according to territories**

	2012			213			214		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	39 905,1	1 286,9	78,0	32 899,1	1 229,6	75,7	33 839,4	1 572,3	80,5
Europe,other countries	565,3	14,2	0,9	793,0	26,5	1,6	781,1	24,8	1,3
USA and Canada	17,5	3,7	0,2	15,1	3,3	0,2	11,1	4,7	0,2
Other countries	5 581,2	345,9	21,0	9 093,1	364,9	22,5	9 446,8	351,1	18,0
<b>Totally</b>	<b>46 069,1</b>	<b>1 650,7</b>	<b>100,0</b>	<b>42 800,3</b>	<b>1 624,3</b>	<b>100,0</b>	<b>44 078,4</b>	<b>1 953,0</b>	<b>100,0</b>



	215			216			217		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	45 654,0	1 547,5	81,6	34 354,9	1 541,6	78,8	36 887,9	1 614,2	81,6
Europe,other countries	778,2	23,2	1,2	1 151,8	17,6	0,9	423,8	15,6	0,8
USA and Canada	70,5	0,5	0,0	39,1	7,6	0,4	38,9	7,5	0,4
Other countries	6 613,7	325,7	17,2	8 108,9	389,3	19,9	6 206,6	340,4	17,2
<b>Totally</b>	<b>53 116,4</b>	<b>1 896,9</b>	<b>100,0</b>	<b>43 654,7</b>	<b>1 956,1</b>	<b>100,0</b>	<b>43 557,2</b>	<b>1 977,7</b>	<b>100,0</b>

### Structure of import of utility glass according to territories in 2017 (CZK)



The greatest share of import (81.6 %) was realized from the European Union countries. The greatest importers were Bulgaria, Germany, Poland, Portugal, France and Italy. From the Other countries (17.2 % of total import) the greatest importers in 2017 were China and Turkey. Both these countries totally created 93.4 % of import from the Other countries.

### Other glass

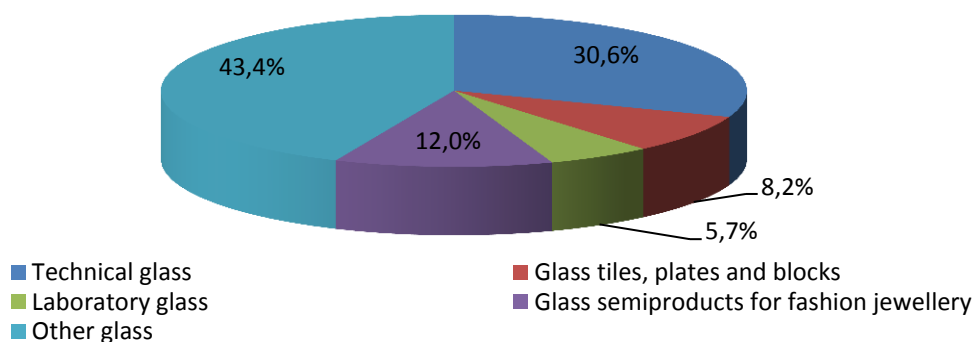
The import of other glass in 2017 was 1615.5 mill. CZK. The inter-year increase was by 0.82 % (1602.3 mill. CZK in 2016).

### Import of other glass according to the assortment

	212			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Technical glass	1 967,6	240,3	11,3	2 466,3	259,8	15,3	4 174,3	635,9	24,6
Glass tiles, plates and blocks	5 550,0	213,4	10,0	5 130,4	226,1	13,4	7 117,2	239,9	9,3
Laboratory glass	473,2	80,0	3,8	320,0	67,0	4,0	253,1	79,9	3,1
Glass semiproducts for fashion jewellery	3 313,9	812,3	38,3	2 614,7	555,3	32,8	2 863,7	968,1	37,5
Other glass	136 098,9	777,5	36,6	136 408,7	584,8	34,5	171 069,4	657,1	25,5
<b>Totally</b>	<b>147 403,6</b>	<b>2 123,5</b>	<b>100,0</b>	<b>146 940,1</b>	<b>1 693,0</b>	<b>100,0</b>	<b>185 477,7</b>	<b>2 580,9</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Technical glass	3 726,0	425,5	23,0	3 658,6	451,6	28,2	8 552,0	494,8	30,6
Glass tiles, plates and blocks	4 214,2	225,5	12,2	3 971,0	160,3	10,0	2 665,9	132,6	8,2
Laboratory glass	567,8	103,1	5,6	260,7	91,2	5,7	262,5	92,6	5,7
Glass semiproducts for fashion jewellery	3 088,0	446,6	24,2	3 063,0	254,6	15,9	3 325,4	194,2	12,0
Other glass	171 104,4	647,8	35,0	175 633,8	644,6	40,2	207 270,2	701,3	43,4
<b>Totally</b>	<b>182 700,4</b>	<b>1 848,5</b>	<b>100,0</b>	<b>186 587,1</b>	<b>1 602,3</b>	<b>100,0</b>	<b>222 076,0</b>	<b>1 615,5</b>	<b>100,0</b>

### Structure of import of other glass according to the assortment in 2017 (CZK)

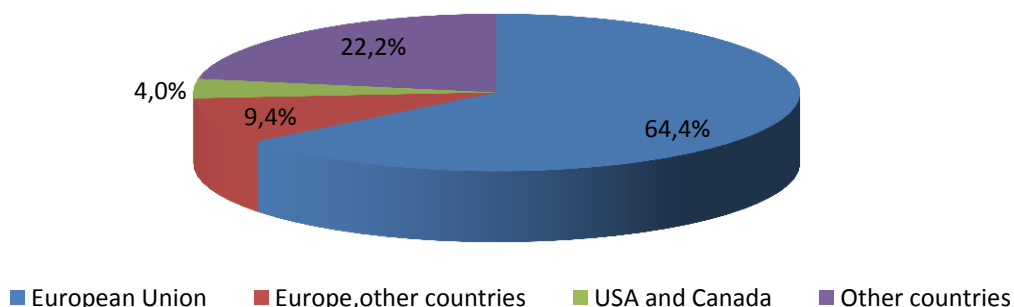


In the following table the other glass import according to territories is given.

### Import of other glass according to territories

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	138 018,4	1 702,8	80,2	127 864,7	1 285,3	75,9	160 150,8	1 557,0	60,3
Europe, other countries	6 101,1	37,9	1,8	108,2	58,6	3,5	82,9	69,9	2,7
USA and Canada	33,0	36,2	1,7	341,0	42,8	2,5	345,4	39,9	1,5
Other countries	3 251,1	346,0	16,3	18 626,2	306,3	18,1	24 888,8	913,9	35,4
<b>Totally</b>	<b>147 403,6</b>	<b>2 122,9</b>	<b>100,0</b>	<b>146 940,1</b>	<b>1 693,0</b>	<b>100,0</b>	<b>185 467,9</b>	<b>2 580,7</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	174 132,6	1 199,0	63,7	159 908,6	1 077,4	67,8	168 902,6	451,6	64,4
Europe, other countries	103,3	82,9	4,4	111,8	79,4	5,0	48,6	65,8	9,4
USA and Canada	496,7	74,1	3,9	375,8	52,1	3,3	8,0	28,2	4,0
Other countries	26 470,3	525,6	27,9	26 299,5	379,9	23,9	38 310,9	155,8	22,2
<b>Totally</b>	<b>201 202,9</b>	<b>1 881,6</b>	<b>100,0</b>	<b>186 695,7</b>	<b>1 588,8</b>	<b>100,0</b>	<b>207 270,1</b>	<b>701,4</b>	<b>100,0</b>

**Structure of import of other glass according to territories in 2017 (CZK)**

In 2017 the import from the European Union countries was 64.4 % and 22.2 % from the Other countries. The import was realized from various countries according to the assortment. In 2017 the greatest importers of technical glass were Germany, France, China, Malaysia and Taiwan, laboratory glass Germany, Italy, the USA, Great Britain, India and China, glass tiles, plates and blocks Belgium, Germany, the USA, Great Britain, India and China, and glass semiproducts for fashion jewellery Austria, Germany, France, the USA, China, Hongkong and Japan.

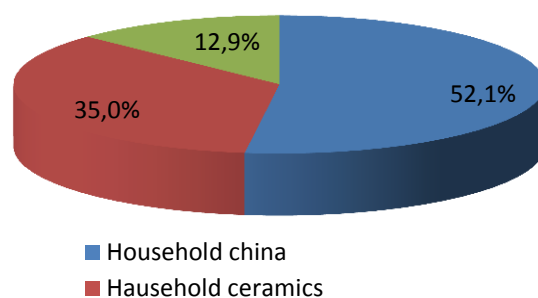
**Household china and ceramics**

In 2017 the household china and ceramics were imported to the Czech Republic in a value of 1384.5 mill. CZK, i.e. by 9.6 % less than in 2016.

**Import of household china and ceramics according to the assortment**

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Household china	9 037,4	790,4	53,6	7 974,8	791,6	62,3	10 295,8	790,3	59,4
Household ceramics	7 820,3	522,5	35,4	5 429,8	304,5	24,0	6 805,2	398,5	30,0
Decorative and figural china and ceramics	2 750,2	161,1	10,9	3 095,9	174,1	13,7	2 226,7	141,7	10,6
<b>Totally</b>	<b>19 607,9</b>	<b>1 474,0</b>	<b>100,0</b>	<b>16 500,5</b>	<b>1 270,2</b>	<b>100,0</b>	<b>19 327,7</b>	<b>1 330,4</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
Household china	7 070,9	709,4	57,6	11 253,9	740,2	48,8	7 189,9	721,0	52,1
Household ceramics	5 574,8	377,7	30,6	7 147,9	615,2	40,5	5 803,0	485,2	35,0
Decorative and figural china and ceramics	2 248,5	145,2	11,8	2 480,0	162,7	10,7	2 639,6	178,3	12,9
<b>Totally</b>	<b>14 894,2</b>	<b>1 232,3</b>	<b>100,0</b>	<b>20 881,8</b>	<b>1 518,1</b>	<b>100,0</b>	<b>15 632,5</b>	<b>1 384,5</b>	<b>100,0</b>

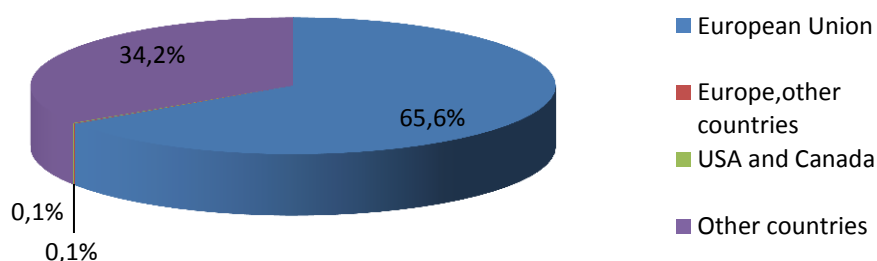
**Structure of import of household china and ceramics according to the assortment in 2017 (CZK)**

The household china shares with 52.1 %, household ceramics with 35.0 % and decorative and figural china and ceramics with 12.9 % on the import of this group assortment.

**Import of household china and ceramics according to territories**

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	8 563,9	756,1	51,3	9 170,7	824,3	64,9	10 678,9	798,7	60,0
Europe,other countries	142,2	4,3	0,3	53,6	3,1	0,2	36,8	5,0	0,4
USA and Canada	5,8	0,9	0,1	1,9	0,6	0,0	2,6	0,4	0,0
Other countries	10 896,0	712,7	48,4	7 274,3	442,2	34,8	8 609,5	526,4	39,6
<b>Totally</b>	<b>19 607,9</b>	<b>1 474,0</b>	<b>100,0</b>	<b>16 500,5</b>	<b>1 270,2</b>	<b>100,0</b>	<b>19 327,8</b>	<b>1 330,5</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	7 486,3	722,7	58,7	9 878,1	1 035,0	68,2	8 924,3	908,1	65,6
Europe,other countries	33,7	1,2	0,1	9,6	0,8	0,1	7,2	1,3	0,1
USA and Canada	1,5	0,8	0,1	1,6	1,1	0,1	2,0	1,6	0,1
Other countries	7 372,6	507,5	41,2	10 992,6	481,2	31,7	6 698,9	473,7	34,2
<b>Totally</b>	<b>14 894,1</b>	<b>1 232,2</b>	<b>100,0</b>	<b>20 881,9</b>	<b>1 518,1</b>	<b>100,0</b>	<b>15 632,4</b>	<b>1 384,7</b>	<b>100,0</b>

**Structure of import of household china and ceramics according to territories in 2017 (CZK)**

The import from the European Union countries shared on total import with 65.6 %. The greatest importer was Germany, sharing on import from the European Union with 29.6 %, followed by Italy.

The Other countries shared on import of household china and ceramics with 34.2 %. The greatest importer was China, sharing on import from the Other countries with 29 % (137.24 mill. CZK)

## Technical ceramics and sanitary ware

The technical ceramics and sanitary ware import was 1878.9 mill. CZK in 2017. The import increased in comparison with 2016 by 8.7 % (1716.1 mill. CZK).

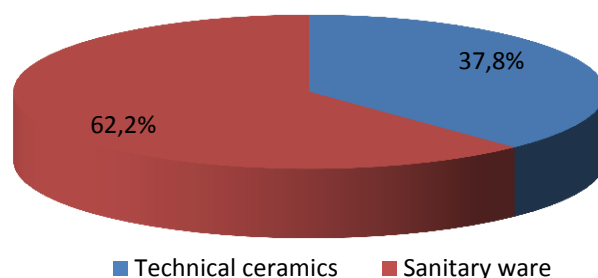
### Import of technical ceramics and sanitary ware according to the assortment

	2012			2013			2014		
	netto (t)	mil.Kč	share ( % )	netto (t)	mil.Kč	share ( % )	netto (t)	mil.Kč	share ( % )
Technical ceramics	4 360,6	296,7	27,6	3 616,7	339,5	27,3	3 670,6	487,1	33,1
Sanitary ware	14 559,2	779,4	72,4	13 457,2	905,5	72,7	13 981,6	982,5	66,9
<b>Totally</b>	<b>18 919,8</b>	<b>1 076,1</b>	<b>100,0</b>	<b>17 073,9</b>	<b>1 245,0</b>	<b>100,0</b>	<b>17 652,2</b>	<b>1 469,6</b>	<b>100,0</b>

	2015			2016			2017		
	netto (t)	mil.Kč	share ( % )	netto (t)	mil.Kč	share ( % )	netto (t)	mil.Kč	share ( % )
Technical ceramics	3 838,0	642,0	39,7	3 758,6	655,9	38,2	4 144,7	710,5	37,8
Sanitary ware	14 548,2	973,1	60,3	15 251,0	1 060,2	61,8	16 612,5	1 168,4	62,2
<b>Totally</b>	<b>18 386,2</b>	<b>1 615,1</b>	<b>100,0</b>	<b>19 009,6</b>	<b>1 716,1</b>	<b>100,0</b>	<b>20 757,2</b>	<b>1 878,9</b>	<b>100,0</b>

### Structure of import of technical ceramics and sanitary ware according to the assortment in 2017 (CZK)



Sanitary ware shared on import in 2017 with 62.2 % and technical ceramics with 37.8 %.

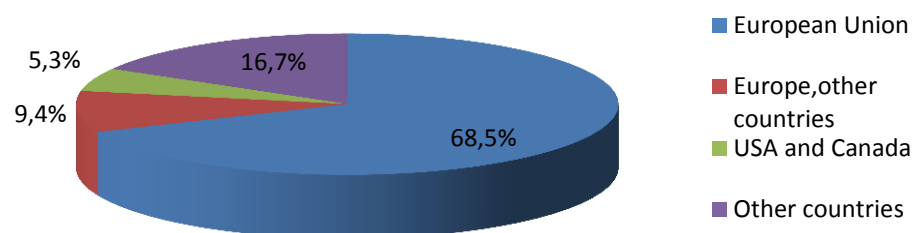
### Import of technical ceramics and sanitary ware according to territories

	2012			2013			2014		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	13 248,2	805,8	74,9	11 663,7	877,6	70,5	11 517,8	1 029,7	70,1
Europe,other countries	1 179,4	63,9	5,9	1 179,7	62,4	5,0	1 759,3	116,4	7,9
USA and Canada	14,2	38,9	3,6	14,9	8,9	0,7	5,5	80,2	5,5
Other countries	4 478,0	167,5	15,6	4 215,6	296,1	23,8	4 369,7	243,2	16,5
<b>Totally</b>	<b>18 919,8</b>	<b>1 076,1</b>	<b>100,0</b>	<b>17 073,9</b>	<b>1 245,0</b>	<b>100,0</b>	<b>17 652,3</b>	<b>1 469,5</b>	<b>100,0</b>

	2015			2016			2017		
	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )	netto ( t )	mil.Kč	share ( % )
European Union	12 247,1	1 202,1	74,4	12 318,0	1 228,5	71,6	13 474,2	1 287,7	68,5
Europe,other countries	1 616,1	76,5	4,7	1 547,9	102,6	6,0	2 451,0	177,2	9,4
USA and Canada	5,9	75,7	4,7	7,8	74,6	4,3	22,1	100,2	5,3
Other countries	4 517,0	260,9	16,2	5 136,0	310,3	18,1	4 809,9	313,8	16,7
<b>Totally</b>	<b>18 386,1</b>	<b>1 615,2</b>	<b>100,0</b>	<b>19 009,7</b>	<b>1 716,0</b>	<b>100,0</b>	<b>20 757,2</b>	<b>1 878,9</b>	<b>100,0</b>

**Structure of import of technical ceramics and sanitary ware according to territories in 2017 (CZK)**



In 2017 the import from the European Union countries shared on technical ceramics import with 68.5 %. The greatest importer was Germany. As far as sanitary ware the share of import from the European Union countries was 60.4 %. The greatest importers were Poland, Austria and Germany. From the Other countries the share on total import of sanitary ware of which was 16.7 %, the greatest importers of this assortment were China and Turkey.

**[www.askpcr.cz](http://www.askpcr.cz)**  
**[www.skloakeramika.cz](http://www.skloakeramika.cz)**

**© 2018 ASSOCIATION OF THE GLASS AND CERAMIC INDUSTRY OF THE CZECH REP.**  
**Dělnická 12, 170 00 Praha 7 Česká republika**

**Phone: +420 271 745 888 E-mail: [info@askpcr.cz](mailto:info@askpcr.cz)**

**The Annual Report 2017 is available also in English. Both versions you can find on:**  
**[www.askpcr.cz/en](http://www.askpcr.cz/en)**

**Photos published in the Annual Report were given by companies:**

**AGC Flat Glas Czech a.s.**  
**Crystal BOHEMIA a.s.**  
**Crystalex CZ s.r.o.**  
**Český porcelán a.s.**  
**LAUFEN CZ, s.r.o.**  
**Moser a.s.**  
**VETROPACK MORAVIA GLASS a.s.**