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Turkey: more than a buying market

The Machine Builders at the Bosphorus

The machine-building sector is considered to be the engine of the Turkish industry. Thereby, the supply industry plays a critical role. With the policy "Quality for competitive prices," Turkey has become the focus of many purchasing managers.

As a highly developed economic nation, the U.S. is both a role model and an important customer market for the players in the Turkish mechanical engineering industry. The economic relations between the U.S. and Turkey in the mechanical engineering sector are based on solid pillars due to the constant developments of recent years, but this is not enough for us.



Kutlu Karavelioğlu, who has been the president of Machinery Exporters' Association (Turkish Machinery) since 2018, already was active in the Board of Directors of the Association many years before. For medium-sized and large American companies, the Turkish mechanical engineering sector offers great potential as a strategic procurement market. In addition, there are the excellent framework conditions as an international location and for international investments. Large, well-known Turkish companies such as Dalgakiran (compressors), Ermaksan (machine tools), Aktas Holding (vehicle supplier), and Durmazlar (machine tools) are already very successful in the U.S. and have established partnerships. American companies invest in Turkey and vice versa. We want to expand these relationships and double the volume of trade between our countries in our sector in the coming years.

Together, we are stronger

Our country's strong supply industry offers perfect conditions in the modularization of machine components. With a view to IIoT, the potential of the Turkish firms provides a great surplus value to their partners. And not least: The logistical conditions recommend Turkey's location as well. We wish to grow and intensify our partnerships. Research and development, personnel qualification, third-markets handling, the development of new sales channels, as well as new service concepts are some of the areas in which we intend to further upgrade our technological cooperation.

Background Information

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- Turkey's Economy in Figures:
- Population, as of 2018: 82 million
 Labor force, as of 2018: 32 million
- Labor force, as of 2018: 52 m
- World economic rank: 15
- Growth Q3 2017: +11.1%
- Distribution of branches, as of 2016: Agriculture 8.6%
- Industry 26.7%, Services 64.3%

On the following pages, we offer you an overview of the structure, developments, opportunities, and potential of the Turkish market in general as well as the mechanical engineering sector in particular. We invite you to benefit from these opportunities.



13.000

Turkish Machinery represents more than 13.000 exporting mechanical engineering companies.



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Turkey is Europe's 6th largest machine manufacturer.



The Turkish mechanical engineering industry provides its products to more than 200 countries worldwide. Industry 4.0 – Intelligent Networking of production, product development, logistics and customers

Adaptation to developments requires flexibility, straightforwardness, capacity for learning, qualification and cooperativeness.

We, as Turkish machine-builders, are eager to face the challenges.



The trade volume between USA and Turkey is 21 billion USD.

500%

About 60% of Turkey's machinery export is realized to the EU and the USA.



Discover the potential



The 5 most important product groups of Turkish mechanical engineering are: • Motors and components • Air conditioners and cooling aggregates • Washing and drying machines • Construction and mining machines

Pumps and compressors





<image>

Turkey: The industrial country

Achievements plus Subsidies

Turkey has developed into an attractive business location in the recent years and has thus created a solid foundation for further development. The figures prove the efficient structure of the Turkish economy – above all, the mechanical engineering branch.

Between 2002 and 2017, the Turkish economy rose from 18th to 15th place in the world economic ranking. During the same period, Turkey achieved an annual average gross domestic product of 5.7 percent. In 2017, the country had the fastest-growing economy among the G20 members - despite all global and regional challenges. During the last 15 years, Turkey has increased its overall economy from 236 billion USD to 851 billion USD. At the same time, the per-capita income has tripled from 3,581 USD to 10,597 USD. The economic growth was driven by a robust domestic market and a committed private sector, which have both promoted investments and exports.

Turkey is considered as one of the nine national economies with a per-capita GDP of more than 10,000 USD among the countries with a population of more than 50 million. With an impressive average export annual growth of 10.3 percent, Turkey increased the export volume in the past 15 years, from 36 billion USD to 157 billion USD. Hand in hand with this development, Turkey's share in the worldwide exports has increased from less than 0.6 percent in 2002 to almost 1 percent in 2017. Thus, the Turkish economy achieved a comprehensive export diversification, both in terms of the destinations as well as the exported products. The achievements of the Turkish economy are based on unique location advantages:

Geostrategic location

The logistical proximity of Turkey to Europe and the Middle East is an essential location advantage, in comparison to Asia, the Far East, and China. The geostrategic location between Europe and Asia offers favorable traffic routes to the markets of Europe and towards Russia, Caucasus, Central Asia, as well as the Near East. So, Turkey is deemed as a significant international energy turntable or as an intersection respectively for Europe's energy supply. Furthermore, Turkey takes an important place in the Chinese project of the New Silk Road.

Large domestic market

The size of the domestic market with a GDP of about 766.4 billion USD (as of 2018) as well as a population of about 80 million inhabitants offer a persuasive location advantage.

SPECIAL PUBLICATION

Growing young population

Another bonus of the Turkish economy lies in the structure of the population and working culture. The population is one of the youngest in Europe, with an average age of 30 years. More than 30 million inhabitants are actively employed. An important element of the Turkish working culture is the exemplary workplace morale. The workplace is honored since it gives people the possibility to use their talent and evolve. The involvement of the Turkish labor force is reflected in the high productivity, the low absence rate, and the rank as one of the countries with the highest annual working time.

Motivated, well-trained employees

In general, Turkey has a well-trained labor force. On the other hand, the wage level is comparatively low in comparison to Germany and other western European and even eastern European countries.

THE PCX/ER TO COMPETE IS IN USA.

With over **13.000**

members, we represent the Turkish engineering industry.



The 5 most important export product groups to USA:

Turbines, Turbojets, Turbopropellers, Hydraulic Systems Tractors, Agricultural and Forestry Machinery Cooling Machinery and Air Conditioners Engines and Spare Parts Pumps and Compressors

CONTACT

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Development of solid industrial base

Due to massive investments, Turkey has a well-developed infrastructure, which will continue to expand. According to the Logistics Performance Index (LPI) of the World Bank 2018, Turkey positioned itself at rank 37 in the upper third among 167 analyzed countries.

Subsidies and commercial law

Turkey offers entrepreneurs comprehensive investment incentives. The aim is to minimize the current account deficit and strengthen less developed regions. The supporting system consists of various programs from which both domestic and foreign investors may benefit equally. Therefore, the focus is brought especially to the middle high-tech sector – where the mechanical engineering sector in particular is benefiting from this.

As far back as June 2003, a law was enacted for foreign direct investments, which puts foreign companies on level with Turkish ones. Companies formed with 100 percent foreign capital are treated in the same way as purely domestic investments. Therefore, several opportunities are available to foreigners:

- Establishment of a limited company or joint-stock company pursuant to Turkish commercial law
- Acquisition of shares in existing companies or buying of business establishments
- Foundation of a liaison office/

representation office

 The equity contribution may be realized as cash assets; material assets; (used) machinery and vehicles; investment goods; or as patent, trademark, license, or know-how rights respectively.

Investment zones

In Turkey, there are three types of investment zones: TDZ, OIZ, and FZ. Technology Development Zones (TDZ) are regions in which R&D as well as investments in the

Background Information

Turkish Business Properties

In the daily business routine, social interaction is conducted in a polite and respectful manner. Forthrightness and direct confrontation are unusual. For Turkish businesspeople, it is important that the business partner never loses face. Rejection and criticism often are described in a lengthy communication t.hat. sometimes stvle reauires interpretation. Personal contact is highly valued, so business meetings may take longer than is the case in the U.S., for example. When these rules are followed, a professional as well as relaxed and cordial working atmosphere can be expected.

high-technology area are promoted. Actually, there are 69 TDZs - 56 of which are already in operation and the remaining 13 were approved and are under construction.

Organized Industrial Zones (OIZ) offer entrepreneurs an investor-friendly environment with a finished infrastructure and social facilities. The existing infrastructure, which is made available in OIZs, comprises roads, water, gas and electricity supply, communication networks, waste disposal, and other services. Of the total 322 OIZs, 255 are already in operation and the remaining 67 OIZs are under construction nationwide.

Free Zones (FZ), despite being located within the political national borders, are outside the customs area of Turkey. The object of these zones is to increase export-oriented investments. Legal and administrative regulations regarding business, financial, and economical aspects that are applied in the Free Zones, which are effective in the customs territory of Turkey, are either restricted or eliminated altogether.

In Turkey, there are 19 FZs with access to the markets of the EU and the Near East. 18 of them are in operation and another one is currently being established. The FZs offer a strategically favorable location near the ports at the Mediterranean, the Aegean Sea, and the Black Sea, with direct access to international trade channels.







Turkey 2018: successful in mechanical engineering

Four Times Faster than the World Market

In 2018 the Turkish mechanical engineering sector had, with an export amount of 17.1 billion USD, a significant share in the overall export of 168.1 billion USD. Therefore, the branch's 15.5 percent share was four times more than the machinery export worldwide.

With about 243,000 employees in 17,000 Turkish mechanical engineering corporations in 2018, they achieved a turnover of 109.614 billion TRY and a surplus value of 24 billion TRY. The machinery exports increased in the past 17 years by 10 times, while the machinery exports worldwide just doubled.

Exports to Germany, for a long time the most important market for the Turkish mechanical engineering sector, increased in 2018 by 6.1 percent to more than 2.4 billion USD. The export to the U.S. increased by 22.7 percent to more than 1.2 billion USD. Meanwhile, Turkey ranks 6th among the greatest European machine manufacturers and exports to more than 200 countries. The branch has more than doubled its production volume in the past 10 years. 60 percent of the exports go to the EU and to the U.S. About one-tenth of the overall R&D expenses of the country are in mechanical engineering.

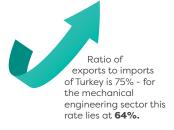
A further positive trend supports Turkish competitiveness: the mechanical engineering sector gradually gets stronger in the medium- as well as high-technology area. The price development verifies this positive trend as well: it increased by 24 percent in terms of volume, as well as by 10 percent in terms of value.

The mechanical engineering sector thus remains a significant mainstay of the Turkish economy. Even though the uptrend of the Turkish economy has to fight various challenges for a while, committed and dynamic corporations defy this trend and move on to the future.

Facts and Figures About the Turkish Mechanical Engineering Industry



Turkish corporations have exported machines amounting to **17,1 billion USD** in 2018.



During the period from 2010 - 2018 the mechanical engineering sector achieved

a growth of **70%.**



Exports have increased in 2018 by a value of **15.5%** and a quantity of **12.8%**. According to the annual comparison, Turkish machine builders have sold 300 tons more machines and have achieved a **2.6 billion higher turnover.**



The main target of the mechanical engineering industry is to increase the annual export volume to **34 billion USD** and the share of the mechanical engineering industry in the country's overall export to **14%** until 2023.



In 2018, machines amounting to **412 billion USD** have been exported to Russia. In comparison to the previous year, this is an increase of more than **38%** by quantity of the machines and of **39,2%** by value The most important export markets of the mechanical engineering industry are the EU and the U.S.A. **with** over 60%.





the average KG price in US exports amounts to 14.2 USD.

Before the foundation of the MAIB (Turkish Machinery Exporters' Association) the export volume of the mechanical engineering sector amounted to **1,7 billion USD** in 2000. In 2018, the export volume reached the **17 billion USD** mark. This represents an increase of more than **90%** since the foundation of MAIB.





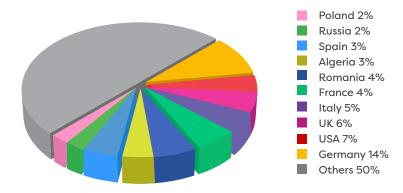


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Machinery Exports of Turkey



In 2018, Turkey exported goods and services in the mechanical engineering sector amounting to 2.4 billion USD to Germany and 1.3 billion USD to the U.S. Source: Turkish Machinery

The mechanical engineering sector primarily focuses on the following targets:

- Increase exports, diversify product groups, become the world market leader in selected product groups
- Increase added value in production and export
- Make higher investments in technologies and new partnerships
- Further develop the products and services in the upper technology segment

Retain highly qualified personnel

On these targets, the individual corporations work hand in hand with trade associations and organizations. Therefore, economic relations with the U.S. plays an important role. The U.S. mechanical engineering sector is considered to be a significant engine for technology innovation in Turkey. Therefore, it is of great importance for many Turkish corporations to closely cooperate with U.S. partners, thereby further developing their own strengths, such as flexibility and the willingness to innovate and perform.

Distribution of Branches

- Turkey's Economy in Figures:
- Turbines, Turbojets, Turbopropellers, Hydraulic Systems
- Tractors, Agricultural and Forestry Machinery
- Cooling Machinery and Air Conditioners
- Engines and Spare Parts
- Pumps and Compressors





SPECIAL PUBLICATION



The digital transformation in Turkey

lloT, Al, and 5G

Trade associations as well as the government have recognized the central significance of digital transformation for the Turkish industry and are continuing to expand the infrastructure in a targeted manner.

Under the coordination of the Turkish Ministry of Industry and Technology, a strategy was formulated for the digital transformation of the country, and this was published in a strategy paper at the beginning of 2018. It illuminates all aspects of the digital change, formulates targets, and serves as a digital roadmap.

Projecting the digital infrastructure

Inter alia, the establishment of 10 nationwide centers, is planned for the digital change of structure. More specifically, 7,000 companies from various industries will be advised on digitalization and automation and will then be accompanied during implementation. As a first step, seminars, workshops, and training programs provide a solid information basis, which will then be further developed with concrete advice on individual topics. For the implementation, many scientific institutions, universities, R&D institutes, as well as branch associations and unions are involved in the project. The task areas are worked up and coordinated by the ministry in cooperation with the NGOs in charge of the specific subject area or the relevant institutions, respectively.

- These tasks include:
- Digital infrastructure
- Digital innovation
- Big data cloud
- Standardization
- Law and patent
- Education

Telecommunication backs 5G

Turkey shall soon shift to 5G technology; due to delayed licensing, the current status is still 4.5G. The digital infrastructure shall be improved immediately, at least for the producing trade in the industrial zones. This applies especially to companies that are dependent on cloud solutions.

Artificial intelligence is developing

In the area of AI, Turkey is still in the starting phase. Although there aren't any concrete strategies yet, there are currently about 50 AI projects. Currently mature and applied technologies move within projects related to the themes of image processing, speech recognition, Chatbot applications, and such.







Development and Intensification of the American-Turkish Cooperation **Turkish Machinery**

Turkish Machinery supports cooperation and promotes the technology transfer as well as common research and development projects. Special attention is thereby paid to the areas of IIoT, digitalization, robotics, and automation. Turkish suppliers are especially competitive in the following technologies and material groups: castings, forgings,



In the operative conversion, Turkish Machinery supports interested companies in the following areas:

- Mediation of efficient cooperation
 partners
- Information about the Turkish
 mechanical engineering industry
- Settlement and/or market entry supportActive support in sourcing processes
- Supplemental search in Turkey
- Participation at international fairs and representing our member companies



Henry Ford had the best quote about how to start our cooperation with the United States. He said: "Coming together is the beginning. Keeping together is progress. Working together is success."

Sevda Kayhan Yilmaz Vice-President of Turkish Machinery



"The US market is huge and so are the USA based companies. To offer products and services according to special demands of this big market can be the key to closing big deals.

Turkish machinery manufacturers perfection, ability of building sophisticated machines at competitive prices and short delivery times make it interesting to work with them. It has already proven itself many times that the cooperation of the US industry with our highly qualified machine manufacturers will lead to numerous opportunities and profits for both sides."

Mehmet Agrikli Vice-President of Turkish Machinery



"In the future, we shall focus on achieving a stable increase of the exports in the medium and high technology sector. Turkey has an extensive industrial basis, consisting predominantly of small and medium-sized businesses. Here, many business firms have acknowledged their need for modernisation and are currently technically upgrading their facilities, especially in the export-oriented branches such as the automotive vehicle, food, textiles and metal industry. In order to remain competitive, Turkish business establishments increase their added value and improve themselves to become suppliers of high technology products."

Ahmet Yilmaz Turkish Machinery Germany



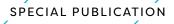


Turkey-U.S. Strategy: Target – doubling the trade volume – 2.5 billion USD machinery exports.

The aim of our activities is to make the relations with the U.S. machinery sector more efficient and fruitful in the medium and long terms. This will be realized by creating and developing technical and commercial cooperation. Therefore, we have prepared 5 target activities to intensify our activities at the beginning:







The most important branches and their representatives

The parent organization of the Turkish mechanical engineering sector

MAKFED functions as the parent organization for 20 mechanical engineering associations, which represent around 2,000 Turkish mechanical engineering companies. As an NGO and a nonprofit organization, MAKFED serves as spokesperson for the entire Turkish mechanical engineering industry.

MAKFED bundles the strengths of the diverse branch segments and represents the mechanical engineering sector domestically and abroad, in order to actively establish Turkey as a technological location and help shape economic policy decisions. Hereby, the main principle is to promote the cooperation between member associations. 13 member

associations of MAKFED represent Turkey in 21 European and international associations. In 2015, it became a member of Oraalim-Europe's Technology Industries, the European association for Mechanical business Engineering, Electrotechnics, and Electronics as well as Metal Processing, as the first nonstate organization of Turkey.



Federation: MAKFED

Turkish Machinery Federation (MAKFED) President: Adnan Dalaakıran General Secretary: Zühtü Bakir

MAKEED

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Pumps and Valves

The branch is characterized in Turkey by small and medium-sized companies. These are able to flexibly deliver worldwide in the medium to high quality and price segment. In 2018, pumps amounting to 543 million USD have been delivered abroad. Main export countries in the area of pumps are Germany, the U.S., Iraq, China, and the United Kingdom. The same year, the exports into these countries constituted an overall of 48 percent of the entire export. In the area of valves, the main export countries are Germany, Iraq, Egypt, the U.S., and France. In

2018, a total of 36 percent of the entire export volume of 586 million USD was delivered to these five countries. Since the 1990s, pump and valve manufacturers have joined forces in the industry association POMSAD (Association of Turkish Pump and Valve Manufacturers). The export strength of the sector is also reflected in the international commitment of the association: For many years, POMSAD has engaged in the European Union EUROPUMP and is frequently active in the board of directors.



Association: POMSAD

President: Nurdan Yücel General Secretary: Gökhan Sezer Türktan

POMSAD

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Agricultural Technology

Due to its favorable geographical location as well as the predominant climate conditions, Turkey features very good agricultural requirements. In accordance with the diverse regional, climatic, and ecological conditions, Turkey has a differentiated orientation of agricultural production. Turkish machinery manufacturers have had a high export share for years due to a very good price-performance relationship in the agricultural sector. In 2018, they exported agricultural machines amounting to 830 million USD to 150 countries,

not including a considerable number of farm tractor components. The main export countries are the U.S., Italy, Azerbaijan, Iraq, and Uzbekistan. The structure of the sector varies from small and medium-sized companies to multinational corporations.

TARMAKBIR represents its members in national and international organizations as well as vis-avis government departments. It informs about relevant technical and scientific innovations and statutory rules and scientific inquiries.



Association: TARMAKBIR

President: Şenol Önal General Secretary: Selami Ileri

TARMAKBIR

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Mechanical engineering, equipment, accessories

Founded in 1990, MIB is also a branch association of the manufacturers of machinery, equipment, and accessories, and today represents more than 200 member corporations. These produce high-quality products in the fields of food, packing, air conditioning systems, machine tools, woodworking and plastic processing, working and construction machines, etc. Main export markets are the European Union, the U.S., Russia, as well as the countries of the Near East. The tasks of the association also include engagement in international industry associations. MIB has been a member of the CECIMO (European Association of Machine Tool Industry and associated Production Technologies) since 1999.



Association: MIB

President: S. Emre Gencer General Secretary:M. Nail Turker

MIB

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Association: TEMSAD President: Adil Nalbant General Secretary: Hayri Etci

TEMSAD

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Association: AKDER

President: M. Semih Kumbasar General Secretary: Abdullah Parlar

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Association: IMDER

President: Merih Özgen General Secretary: Oğuz Yusuf Yiğit

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Textile Machines

The textile and garments branch is, along with the automotive industry, Turkey's most important industrial branch, considering employment, turnover, and added value. The branch established itself worldwide among the leading manufacturers of textiles and ready-made clothing and exported textile machines amounting to 750 million USD in 2018.

In the past five years, an annual export

England, Germany, Uzbekistan, Italy, France, Bangladesh, and India. 80 percent of the export consists of dyeing machines. Since its foundation in 1998, the association of Turkish textile machines represents 193 members, aimed at further developing the competitiveness of the Turkish textile industry domestically and abroad.

growth of an average of more than 25 percent

was reached. Target markets are particularly

Fluid Technology

While the fluid branch in Turkey concentrated on the production of spare parts until the 1960s, the development of hydraulic and pneumatic elements was given prominence in the '70s. Today, worldwide operating Turkish companies of this branch offer complex product solutions and services to major projects. Main export products are gear and piston pumps, hydraulic and pneumatic cylinders, hoses, hydraulic and pneumatic valves, sealing devices, and connecting parts. AKDER, the Turkish Fluid Power Manufacturers' Association, has represented its members since 1994. Primary tasks are the domestic and abroad representation, education and training, development of technical standards, inquiry of data, as well as the establishment and development of cooperations.



In the construction machinery sector, Turkey is the fourth-largest supplier in Europe, the 11th- largest supplier worldwide, and exports machinery to 133 countries. The most important product groups are backhoe loaders, excavators, graders, bulldozers, rolling mills, loaders, concrete machines and devices, asphalt, road, tunnel, and mining machines, tower cranes, crushers, as well as screening machines. About 45 percent of the overall production of Turkish construction machines are exported, whereby the most important markets are Europe, the Near East, Russia, Central Asia, and North Africa. The association IMDER has represented its members since 2002 on a national and international basis. It informs public institutions and associations about the structures of the branch and stands for their issues with public decision-makers, as well as in nonstate initiatives. It also safeguards the Turkish interests in associations such as the CECE (Committee for European Construction Equipment).