WHY INVEST IN TURKISH MACHINERY INDUSTRY?

April 2024
**EXECUTIVE SUMMARY**

TÜRKİYE HAS A GROWING MACHINERY INDUSTRY OFFERING OPPORTUNITIES IN MANY AREAS...

- **FAVORABLE INVESTMENT ENVIRONMENT**
  - Strong macroeconomic growth with increasing income per capita and a burgeoning middle class
  - Favorable demographics with a dynamic, young, and skilled labor force supporting the industry
  - Cost-competitive labor and energy prices
  - Strong government support through manufacturing and R&D incentives

- **STRONG INTERNATIONAL PRESENCE**
  - Global machinery companies are present in Türkiye with significant manufacturing activities, using Türkiye as a hub to access regional markets
  - Successful partnerships with local companies to grow in the region, capitalizing on locals' experience and networks

- **LUCRATIVE OPPORTUNITIES IN SUB-SECTORS**
  - World-scale domestic demand and robust industrial base offer ample opportunities in agricultural machinery, construction & mining machinery, energy equipment such as electric motors & turbines, food processing & packaging machinery, HVAC, lifting & handling equipment, metalworking & machine tooling, pumps & compressors, textile machinery

- **ROBUST GROWTH IN THE SECTOR**
  - The Turkish machinery industry has exhibited strong growth; approx. 8% CAGR over the last five years.
  - The Turkish machinery market is ranked 3rd largest sector in the Turkish manufacturing industry.
  - Customer industries, such as plastic & rubber, automotive, construction, textiles, and electrical machinery are robustly growing and therefore further supporting the growth of the machinery sector
  - Export opportunities due to Türkiye’s proximity to regional markets
TURKISH MACHINERY INDUSTRY

TURKISH MACHINERY SECTOR HAS MORE THAN QUADRUPLED ITS REVENUES TO USD 47 BILLION AND DOUBLED ITS WORKFORCE TO 300K OVER THE PAST DECADE

AN UNPRECEDENTED AVERAGE GROWTH OF 40% IN 5 YEARS

TÜRKİYE SHOOK OFF GLOBAL CRISIS WHILE DOUBLING ITS REVENUE & REACHING VALUE-ADD RATIO OF 25%

7.9% CAGR 2012-2022

Revenue (M$) Employment

Source: Turkish Statistical Institute Industry & Services Statistics NACE Rev2 Division 28, Central Bank of Republic of Türkiye
END-USE INDUSTRIES

SUSTAINABILITY OF GROWTH IN CUSTOMER INDUSTRIES DRIVING TÜRKİYE’S MACHINERY INDUSTRY...

**CHEMICALS**
- CAGR 2009-2022: 7.2%
- 2nd largest plastics producer after Germany in Europe

**TEXTILE**
- CAGR 2009-2022: 3.8%
- 6th largest clothing supplier in the world, 3rd largest clothing supplier to Europe

**ENERGY**
- CAGR 2009-2022: 5.5%
- 5th largest electricity market in Europe – with 88.5 GW of installed capacity

**FOOD & BEVERAGES**
- CAGR 2009-2022: 2.3%
- Largest sector in Türkiye with a USD 70 billion production

**AUTOMOTIVE**
- CAGR 2009-2022: 5.3%
- 15th largest automotive manufacturer globally, producing over 1 million vehicles

**ELECTRICAL EQUIPMENT**
- CAGR 2009-2022: 4.2%
- Largest TV and white goods manufacturer in Europe

**AGRICULTURE**
- CAGR 2009-2022: 10.4%
- 7th largest agricultural producer in the world

**CONSTRUCTION**
- CAGR 2009-2022: 1.4%
- 650K+ dwelling units built per year

Source: Ministry of Science, Industry and Technology, Investment Office Team Analysis
Türkiye’s exports have grown five times since 2003, making it one of the top performers in global machinery trade.

When world exports doubled, Türkiye’s exports increased five times... while diversifying its export markets:

- **48.2%** Europe
- **10%** Russia
- **6.1%** USA
- **20.6%** M. East & Africa
- **12.2%** Asia

*As of September 2023| Source: Comtrade HS code 84, 8202, 8207, 8208, 8501, 8502, 8503, 8505, 8514, 8515, 8701, 8709, 8716, 9017, 9024, 9508, 9603, Team Analysis*
TÜRKİYE HAS ALMOST TRIPLED ITS IMPORTS TO USD 28 BILLION AND NOW IS THE 24TH LARGEST IMPORTER IN THE WORLD

TÜRKİYE HAS INCREASED ITS EXPORT/IMPORT RATIO FROM 30% TO 69% SINCE 2003...

...WITH THE FOLLOWING BREAKDOWN BY COUNTRIES

<table>
<thead>
<tr>
<th>Year</th>
<th>Import (Billion USD)</th>
<th>USA %</th>
<th>Europe %</th>
<th>China %</th>
<th>S. Korea %</th>
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</thead>
<tbody>
<tr>
<td>2003</td>
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<td>26.1%</td>
<td>7.1%</td>
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<td>2020</td>
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<td>2021</td>
<td>37</td>
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<td>2022</td>
<td>39</td>
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</table>

Source: Comtrade HS code 84, 8202, 8207, 8208, 8501, 8502, 8503, 8505, 8514, 8515, 8701, 8709, 8716, 9017, 9024, 9508, 9600, Team Analysis

Mostly from Germany, Italy and UK
**PROXIMITY TO KEY MARKETS**

**TÜRKİYE**

**HAS GEOGRAPHICAL PROXIMITY TO SOME OF THE HIGHEST-GROWTH MARKETS IN MACHINERY AND IS CONVENIENTLY POSITIONED AS A MANAGING AND MANUFACTURING HUB**

**TÜRKİYE IS WELL CONNECTED WITH THE REGION THROUGH CUSTOMS UNION WITH THE EU AND FREE TRADE AGREEMENTS WITH 23 COUNTRIES**

Source: UN Comtrade HS Code 84, Türkiye has signed Free Trade Agreements (FTA) with Albania, Bosnia-Herzegovina, Chile, Egypt, Faroe Islands*, Georgia, Ghana*, Iceland, Israel, Jordan, Kosovo*, Lebanon*, Macedonia, Malaysia, Mauritius, Montenegro, Moldova*, Monaco, Norway, Palestine, Serbia, Singapore*, South Korea, Switzerland and Liechtenstein, Syria, Tunisia, Sudan*, Qatar*, Japan**, Thailand**, Indonesia**. (*to be ratified).(**to be negotiate)
There are over 21k companies in the Turkish machinery sector where both local and international players are active.

61% of machinery revenue is made by small and medium enterprises.

10 of the largest 25 players are international & export rate is 40% on average.

40% export on average.

77% of the companies have <10 employees.

Growth requires access to:
• Market
• Technology
• International finance

117 companies

< 250 employees

> 250 employees

Source: Turkish Statistical Institute Industry & Services Statistics NACE Rev2 Division 28, ISO 500
ROBUST ECONOMY TRACK RECORD GROWTH AND BRIGHT FUTURE WITH PROVEN RESILIENCE

11th largest economy in the World

RANKING OF ECONOMIES BY GDP AT PPP

<table>
<thead>
<tr>
<th>2003</th>
<th>2019</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. USA</td>
<td>1. CHINA</td>
<td>1. CHINA</td>
</tr>
<tr>
<td>2. CHINA</td>
<td>2. USA</td>
<td>2. USA</td>
</tr>
<tr>
<td>3. JAPAN</td>
<td>3. INDIA</td>
<td>3. INDIA</td>
</tr>
<tr>
<td>4. GERMANY</td>
<td>4. JAPAN</td>
<td>4. JAPAN</td>
</tr>
<tr>
<td>5. INDIA</td>
<td>5. GERMANY</td>
<td>5. GERMANY</td>
</tr>
<tr>
<td>6. RUSSIA</td>
<td>6. RUSSIA</td>
<td>6. RUSSIA</td>
</tr>
<tr>
<td>7. FRANCE</td>
<td>7. INDONESIA</td>
<td>INDONESIA</td>
</tr>
<tr>
<td>8. UK</td>
<td>8. BRAZIL</td>
<td>8. BRAZIL</td>
</tr>
<tr>
<td>10. ITALY</td>
<td>10. FRANCE</td>
<td>10. FRANCE</td>
</tr>
<tr>
<td>11. MEXICO</td>
<td>11. MEXICO</td>
<td>11. TÜRKİYE</td>
</tr>
<tr>
<td>12. INDONESIA</td>
<td>ITALY</td>
<td>12. ITALY</td>
</tr>
<tr>
<td>13. SPAIN</td>
<td>13. TÜRKİYE</td>
<td>13. MEXICO</td>
</tr>
<tr>
<td>15. S.KOREA</td>
<td>SPAIN</td>
<td>15. SPAIN</td>
</tr>
<tr>
<td>16. S.Arabia</td>
<td>CANADA</td>
<td>16. SPAIN</td>
</tr>
<tr>
<td>17. IRAN</td>
<td>17. S.Arabia</td>
<td>17. S.Arabia</td>
</tr>
<tr>
<td>18. TÜRKİYE</td>
<td>18. IRAN</td>
<td>18. EGYPT</td>
</tr>
</tbody>
</table>

AVGARE ANNUAL GDP GROWTH (%) 2002-2022

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>POLAND</td>
<td>3.9</td>
<td></td>
</tr>
<tr>
<td>ROMANIA</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>BULGARIA</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>CZECHIA</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>TÜRKİYE</td>
<td>5.4</td>
<td></td>
</tr>
</tbody>
</table>

REAL GDP GROWTH (INDEX: 2002=100)

Source: TurkStat, IMF, PPP: Purchasing Power Parity,
The Turkish economy has **more than tripled over** the past 20 years and shows promises to maintain on the growing trend.

### Turkish Economy
(GDP at current prices, $Billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP (Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>236</td>
</tr>
<tr>
<td>2022</td>
<td>906</td>
</tr>
</tbody>
</table>

**Robust domestic market** and entrepreneurial private sector spurred investments and exports.

### Contribution to GDP Growth 2002-2022 (%)

- Domestic Consumption: 86
- Investment Expenditures: 29
- Exports: 26
- Stocks: -20
- Imports: -21

*Source: TurkStat*
**DOMESTIC MARKET**

**Income per capita**
(GDP per capita, current prices at purchasing power parity)

- **2002**: $10,988
- **2022**: $39,301

**Passenger Car Stock**
(millions)

- **2002**: 4.6
- **2022**: 14.4

**Domestic Air Passenger Traffic**
(millions)

- **2002**: 33.8
- **2022**: 214
- **2023**: 338

Source: TurkStat, Ministry of Transport and Infrastructure and IMF
FAVORABLE DEMOGRAPHICS

HALF OF POPULATION UNDER AGE OF 33.5, CREATING DYNAMIC LABOR FORCE AND FOSTERING FISCAL DISCIPLINE

**TÜRKİYE**

**EUROPE**

**WORKING AGE POPULATION** (15-64+) (Index: 2014=100)

**TOTAL DEPENDENCY RATIO** (% Age 0-14 & 65+)/Age 15-64)

Source: Turkstat, Eurostat, UN, 2019
SKILLED & COST-COMPETITIVE LABOR FORCE

TÜRKİYE’S EDUCATION SYSTEM UPGRADED TO SUPPORT A SKILLED LABOR POOL

ANNUAL NUMBER OF UNIVERSITY GRADS IN MECHANICAL FIELDS (2022-2023)

- Electronics & Automation
- Mechanics & Metal Trades

TOTAL 39,158
13,043
22,406
3,709

NUMBER OF GRADS FROM VOCATIONAL & TECHNICAL HIGH SCHOOLS (in thousands)

<table>
<thead>
<tr>
<th>Field</th>
<th>2002</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronics &amp; Automation</td>
<td>177</td>
<td>430</td>
</tr>
<tr>
<td>Mechanics &amp; Metal Trades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>39,158</td>
</tr>
</tbody>
</table>

LABOR FORCE BY EDUCATION LEVEL

<table>
<thead>
<tr>
<th>Education Level</th>
<th>2002</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>10%</td>
<td>27.9%</td>
</tr>
<tr>
<td>High School and below</td>
<td>90%</td>
<td>72.1%</td>
</tr>
</tbody>
</table>

Source: Ministry of National Education, Council of Higher Education, Turkstat
SKILLED AND COMPETITIVE LABOR FORCE

UPGRADED EDUCATION SYSTEM TO ENABLE A SKILLED LABOR POOL AND ADDRESS BUSINESS REQUIREMENTS

AVAILABILITY OF QUALIFIED ENGINEERS
(10=Available; 0=Unavailable) 2023

AVAILABILITY OF COMPETENT SENIOR MANAGERS
(10=Available; 0=Unavailable)

COST OF LIVING INDEX 2023
(New York=100)

REMUNERATION OF MANAGEMENT/ENGINEER
Total base salary plus bonuses and long-term incentives
COMPETITIVE ENERGY PRICES

Electricity and natural gas prices in Türkiye have been cost-competitive in comparison with the EU.

Electricity Prices for Non-Household Consumers, S1 2023
(EUR per MWh)

Gas Prices for Non-Household Consumers, S1 2023
(EUR per kWh)

MACHINERY & EQUIPMENT MANUFACTURING INVESTMENTS ARE ABLE TO BENEFIT FROM “MEDIUM-HIGH TECH INCENTIVES”

### MAIN INCENTIVE ITEMS

- VAT Exemption for Machinery
- VAT Exemption for Construction
- Customs Duty Exemption
- Corporate Tax Reduction of 15-55% of investment expenditures depending on the investment location
- Social Security Premium Support (Employer’s Share) for 2-12 years depending on the investment location
- Land Allocation
- Interest Rate Support in the amount of TRY 1 to 1.8M depending on the investment location

### Eligibility Criteria

Minimum fixed investment amount between TRY 1,500,000 - TRY 4,000,000 depending on the investment location and industry

### Incentive Schemes

<table>
<thead>
<tr>
<th>Incentive Items</th>
<th>General Incentives</th>
<th>Regional Incentives</th>
<th>Medium-High Tech Incentives</th>
<th>Priority Incentives</th>
<th>Strategic Incentives</th>
<th>Project Based Incentives</th>
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</table>

* In regional incentive scheme, Income Tax Withholding Support and Social Security Premium Support (Employee’s Share) are only for Region 6. They are also included in Strategic and Project Based Incentives.

** Medium-High Tech Incentives are Region 4 incentives and Priority Incentives are Region 5 incentives. Rate of the support items is higher in better incentive schemes like Strategic and Project Based Incentives.

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*VAT collected for the construction expenses made until December 31, 2024, will be exempted only for the manufacturing investments. **This support is not applicable to investments in Region 1 and 2.
EXCLUSIVE INCENTIVES INCLUDE SUPPORT FOR TECH ENTREPRENEURS TO CREATE INNOVATIVE HIGH VALUE-ADDED ACTIVITY, WHICH ARE KEY TO CATCHING UP WITH THE NEW INDUSTRIAL REVOLUTION

R&D INCENTIVES

INCENTIVES THROUGH INNOVATION LIFECYCLE

START

Technostartup Incentives:
Cash support up to 450K TRY

PRODUCT / PROJECT DEVELOPMENT

Tubitak programs:
Cash support up to 60-80% of the project budget

COMMERCIALIZATION

Technoparks and R&D Centers:
Income Tax Exemption
Tax cuts up to 20-30% of the personnel cost

MANUFACTURING

SME Technoinvestment Incentives:
Cash/credit support up to 5Million TRY for SMEs

GROWTH & COMPETITION

Patented sales:
Income Tax & VAT Exemption

Source: Ministry of Industry and Technology Report 2022
Tech-Driven Industry Initiative has been launched in 2019.

Support will be provided for the products throughout the entire process, from the concept phase to marketing.

The Ministry of Industry and Technology will establish schedules as part of investor calls for each sector.

Complete support for high-value-added, medium-high tech and high-tech products manufactured in certain sectors with local resources and capabilities. Machinery, Computer, Electronics, Chemicals etc.

The investments supported in the program shall receive strategic investment incentives.

Application Process in 3 Stage
Stage 1 PRE APPLICATION (1 MONTH)
Stage 2 DETAILED APPLICATION (3 MONTHS)
Stage 3 FINAL DECISION (1 MONTH)

R&D incentives, KOSGEB incentives and investment incentives will be given through a single platform / www.hamle.gov.tr

Investments exceeding TRY 50 million will qualify for project-based investment incentives.

The purchasing guarantee mechanism will also operate in projects where the state is the buyer.
TO FURTHER VALUE-ADDED MANUFACTURING, THE METAL INDUSTRY ESTABLISHED A STATE-OF-THE-ART DIGITAL & GREEN TRANSFORMATION AND CAPABILITY BUILDING CENTER.

A technology centre that brings the latest disruptive technologies of Industry 4.0;
- Create an ecosystem
- Set the aspiration for future industrial development of members in an innovative environment
- Execute digital and sustainability maturity assessments and roadmaps for the deployment of digital and green transformation
- Develop capabilities to accelerate transformation and reach full industrial potential

- Building Artificial Intelligence Laboratory
- As an official Turcorn 100 Program Partner support Turkish startups

DIGITAL FACTORY
An end-to-end integrated infrastructure and is supported entirely by 5G technology.

MATURITY ASSESSMENTS
Developed with a network of leading tech companies and recognized by WEF.

TRAINING AND DEVELOPMENT
Data science, applied training in the digital factory, digital transformation strategies, IoT for field team members, etc.

ECOSYSTEM AND ENTREPRENEURSHIP
Bringing together +50 global and regional best solution partners.

10,000 m² CENTER
2 production lines covering 160+ use cases on discrete manufacturing & continuous process +50 sustainability use cases

250+ companies in 12 different sectors (Automotive, White Goods, Textile, Cement, Chemistry, Food, Oil and Gas etc.).

CORE PARTNERS
- Mckinsey & Company
- Fraunhofer
- Microsoft

Source: Employers’ Association of Metal Industries https://www.mext.org.tr

269+MEMBERS
LOCAL & INTERNATIONAL PLAYERS

GROUPE RENAULT
B/S/H/
thyssenkrupp
Fiat
arcelik
HITACHI
SAMSUNG
Schneider Electric
BOSCH
SIEMENS

Represented Türkiye in the WEF (World Economic Forum) Fourth Industrial Revolution Centers Network.
METU DTX is to increase the competitiveness and EU value chain integration of Turkish manufacturing industry through solution focused R&D projects on smart products and digitalized processes. The main elements of digital transformation will be implemented at the METU DTX such as:

- Artificial intelligence
- Augmented/virtual reality
- Horizontal-vertical integration
- Collaborative robots
- Cybersecurity
- Additive manufacturing applications

The Center will provide services to companies through three laboratories:

- Artificial Intelligence, Big Data Analytics And Cloud Computing
- Smart and Flexible Manufacturing Systems
- Virtual and Augmented Reality

**ARTIFICIAL INTELLIGENCE, BIG DATA ANALYTICS AND CLOUD COMPUTING**

Artificial intelligence and machine learning algorithms necessary for smart devices and products will be developed.

**SMART AND FLEXIBLE MANUFACTURING SYSTEMS**

Modular flexible manufacturing cells will be created according to the needs of the industry.

**VIRTUAL AND AUGMENTED REALITY**

Research will be conducted in virtual and augmented reality environments in the fields of design, manufacturing, assembly, maintenance, repair, and training.
AGENDA

1. Executive Summary
2. Turkish Machinery Industry Outlook
3. Growth Drivers in Türkiye
4. Opportunities in Turkish Machinery Industry
5. Success Stories

OPPORTUNITIES IN TURKISH MACHINERY INDUSTRY
OPPORTUNITIES IN SUB-SECTORS

TÜRKİYE OFFERS SOLID FUNDAMENTALS TO MAKE PROFITABLE INVESTMENTS IN THE MACHINERY SUB-SECTORS

PRODUCTION VALUE IN ALMOST ALL SUBSECTORS INCREASED SUBSTANTIALLY IN COMPARISON WITH 2022

<table>
<thead>
<tr>
<th>Sub-Sector</th>
<th>Production Value (2022)</th>
<th>Local Market Size (2022)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Machinery</td>
<td>6%</td>
<td>16%</td>
</tr>
<tr>
<td>Construction &amp; Mining Machinery</td>
<td>3%</td>
<td>13%</td>
</tr>
<tr>
<td>Food Processing &amp; Packaging Machinery</td>
<td>4%</td>
<td>-4%</td>
</tr>
<tr>
<td>HVAC Machinery</td>
<td>7%</td>
<td>13%</td>
</tr>
<tr>
<td>Lifting &amp; Handling Equipment</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Metalworking &amp; Machine Tooling</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>Motors &amp; Turbines</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Pumps &amp; Compressors</td>
<td>31%</td>
<td>15%</td>
</tr>
<tr>
<td>Textile Machinery</td>
<td>15%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: MAKFED analysis 2022 values
TÜRKİYE’S AGRICULTURAL MACHINERY MARKET HAS REACHED USD 3.6 BILLION IN 2022 - 4TH IN THE WORLD

KEY FACTS

At the beginning of 2000, exports stood at 70 million dollars, increasing to 1.5 billion dollars in 2022.

Robust industrial base - over 10% share in Europe’s production with over 83K units in 2022.

Strong local market with 67K units in 2022 - largest tractor sales in Europe, 4th in the world, 75% of the local market supplied by local players.

Agricultural machinery manufacturing ecosystem with local and international players with a total of 21K employees.

Agricultural Machinery in Türkiye stands out as one of the prominent industries among the 22 national machinery sub-segments, primarily due to its substantial production value.

Some of the major investment areas needed by the sector are:
- Self-propelled harvesters (Combine, cotton harvester, beet harvester, etc.)
- Self-propelled sprayers
- Self-propelled loaders
- Machinery, hardware (equipment) and software for smart agriculture
- High-capacity harvesters
- Milking facilities, milking robots, related software
- Circular and linear motion irrigation systems

DEMAND DRIVEN BY TÜRKİYE’S AGRICULTURAL ECONOMY AND FRAGMENTED STRUCTURE:

Source: MAKFED analysis 2022 values, TĀRMAKBİR, press excerpts, Comtrade HS 8432, 8433, 8436, 8478, 842481, 870110, 870190, 871620

LARGEST COUNTRY IN EUROPE IN TERMS OF AGRICULTURAL ECONOMY (2022)

LARGEST COUNTRY IN THE WORLD IN TERMS OF AGRICULTURAL ECONOMY (2022)
Türkçe'nin Aşırı Grup Kapasiteleri

Türkiye'nin AGRİCULTURAL MACHINERY ihracatı 10 yıl içinde dört katına çıkmıştır.

Kaynak: MAKFED analizi 2022 değerleri, TARMAKBİR, basın izlerleri, Comtrade HS 8432, 8433, 8436, 8478, 842481, 870110, 870190, 871620

**TOP 5 İHRACAT ÜLKeleri**

- **Amerika Birleşik Devletleri**: 19%
- **İtalya**: 10%
- **İrak**: 4%
- **Azerbaycan**: 4%
- **Rusya**: 6%

**AGRİCULTURAL MACHINERY İHRACATI (B$)**

- 2007: 0,3
- 2008: 0,4
- 2009: 0,3
- 2010: 0,3
- 2011: 0,4
- 2012: 0,5
- 2013: 0,6
- 2014: 0,6
- 2015: 0,7
- 2016: 0,7
- 2017: 0,8
- 2018: 0,9
- 2019: 1
- 2020: 1,3
- 2021: 1,4
- 2022: 2

Source: MAKFED analizi 2022 değerleri, TARMAKBİR, basın izlerleri, Comtrade HS 8432, 8433, 8436, 8478, 842481, 870110, 870190, 871620
**KEY FACTS**

- **Strong local market** - 3rd largest growth in the world after China and India for the last eight years

- A robust and international supplier base: The construction machinery industry in Türkiye can leverage the well-established supplier network of the automotive manufacturing industry. Türkiye, serving as a European manufacturing hub, has achieved a production volume of 1.3 million units.

- Local and international companies are present - local market supplied by 35% local production and 65% import

- Local demand driven by public infrastructure and urbanization projects - opportunity for smaller sized construction machinery

- Europe’s 7th largest manufacturing base with key actors, USD 1.92 million local market and USD 2 billion of exports in 2022

- Access to international markets facilitated by Turkish construction companies: With 40 contractors listed in the ENR250

Source: MAKFED analysis 2022 values, IMDER, ISDER, press excerpts, Contrade HS 8429, 8430, 8431, 8474
TURKIYE INVESTED USD 100 BILLION TO INFRASTRUCTURE PROJECTS IN THE LAST 5 YEARS

3rd ISTANBUL AIRPORT

3rd ISTANBUL BRIDGE

URBAN TRANSFORMATION PROJECTS

PUBLIC HOSPITAL PROJECT

ANOTHER USD 100 BILLION € IS EXPECTED IN NEXT 5 YEARS*

*Source: Ministry of Transport and Infrastructure
Türkiye’s Energy Equipment (Electric Motors & Turbines) Market Has Reached USD 6.2 Billion in 2022

Key Facts

- 6th largest electricity market in Europe with more than 100 GW
- 7th in the Europe in wind energy capacity
- Opportunities in production of wind/hydro/steam turbines and generators

Wind
- Total Installed Capacity: 11 GW as of July 2022
- National Energy Plan: 5.1 GW in geothermal and biomass power plants by 2035
- 8.6 GW as of July 2022
- 20 operational wind energy plants
- Over 100 wind equipment manufacturers
- Türkiye has many operational facilities, making it the fifth-largest wind turbine component producer in Europe.

Geothermal & Biomass
- National Energy Plan: 5.2 GW projected solar energy capacity by 2035.

Solar
- Total Installed Capacity: 8.6 GW as of July 2022
- Wind and solar power will remain the drivers of renewables growth in Türkiye.

Electric Motor
- USD 1.8 billion of electric motor & generator imports in 2022—mostly from China, Germany, Italy, and Mexico.

Hydro
- Total Installed Capacity: 32 GW as of July 2022
- 8th in the world global capacity

Nuclear
- Akkuyu NPP Project is the first nuclear investment.
- Once completed, the plant will fulfill about 10% of domestic electricity needs.
- Akkuyu and 2nd nuclear project will lead to USD 16 billion of products & service sales.
- Nuclear supply chain in Türkiye to develop through international partnerships

Coal
- 10 GW lignite, 8.8 GW imported coal
- 18.5 GW new capacity for lignite to be developed via PPAs
- Lignite power projects are supported via capacity payments, PPAs and tax cuts.

Source: MAKFED analysis 2022 values, TEIAŞ Report, Ministry of Energy, Investment Office analysis, press excerpts, Comtrade HS 8501, 8502, 8503, 8410, 8406, 840690, 840290, 854140,
TÜRKİYE’S FOOD PROCESSING & PACKAGING MACHINERY MARKET HAS REACHED USD 3.2 BILLION IN 2022

**KEY FACTS**

- **Strong industrial base** with a production value of USD 2.3 billion clustered in Istanbul, Konya, Ankara, Gaziantep and Izmir.

- Demand driven by the strong packaged food and beverages market in Türkiye - USD 23 billion export in 2022.

- In 2022, imports to Türkiye amounted to USD 1.1 billion, with a focus on machinery for the industrial preparation of food or drink, and equipment for material treatment through heat exchange and machinery for water filtering or purification.

- **TÜRKİYE’S FOOD PROCESSING & PACKAGING MACHINERY EXPORTS ALMOST QUADRUPLED IN 10 YEARS**

- **WHERE 80% OF EXPORTS ARE MACHINERY FOR**
  - Processing & milling of grains and cereals
  - Industrial preparation of food or drink
  - Filtering or purifying water machinery

- Türkiye is a manufacturing base for international food giants like Unilever, Kraft, Nestle, Danone, Ferrero with over 15K employees.

- **AND TOP5 EXPORT MARKETS ARE**
  - Uzbekistan
  - Iraq
  - Russia
  - Algeria
  - Morocco

Source: MAKFED analysis 2022 values, Anadolu Agency, press excerpts, Comtrade HS 8434, 8435, 8437, 841720, 841931, 841989, 842111, 842121, 842122, 847920, 842230, 842240
TÜRKİYE’S HVAC EXPORT MARKET HAS REACHED USD 6.6 BILLION IN 2022

KEY FACTS

**Strong industrial base - USD 3.2 billion in value - Europe’s manufacturing base**
- for panel radiator, boiler and AHU's

**Strong local market - Europe’s largest split AC market**
- with 1.5M units and VRF market with 250K units

**Strong local market - Europe’s 4th largest**
- with 1.3M boiler units

**Demand driven by construction in residential market; efficiency regulations and development in technology in non-residential market**

**VRF market has grown 6 times with imports - opportunity for high-tech production**

**Access to international markets through Turkish construction companies**
- 44 contractors in ENR250 list

Source: MAKFED analysis 2022 values, ISBIB, Comtrade HS 8415, 841810, 841850, 841861, 841869, 841891, 841899
**TURKİYE’S HVAC EXPORTS MORE THAN QUADRUPLED IN 5 YEARS**

...WHERE EUROPE HAS OVER 47% SHARE

<table>
<thead>
<tr>
<th>Year</th>
<th>Exports (M$)</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>0.9</td>
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<tr>
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</tr>
<tr>
<td>2021</td>
<td>6.6</td>
</tr>
<tr>
<td>2022</td>
<td></td>
</tr>
</tbody>
</table>

Source: ISIB, MAKFED analysis 2022 values, press excerpts, Comtrade HS 8415, 841810, 841850, 841861, 841869, 841891, 841899

**Exports to Selected Countries**

- **Germany** 657M USD
- **Poland** 190M USD
- **UK** 354M USD
- **Spain** 195M USD
- **France** 225M USD
- **Egypt** 198M USD
- **Iraq** 116M USD
- **Italy** 326M USD
- **Romania** 205M USD
- **Russia** 232M USD

*Figures in USD*
LIFTING & HANDLING EQUIPMENT

TÜRKİYE’S MARKET FOR LIFTING & HANDLING EQUIPMENT HAS REACHED USD 2.9 BILLION IN 2022

KEY FACTS

- **Strong industrial base** - USD 2.2 billion of production in 2022
- **3rd largest** elevator market in the world with 40K new units – TK Elevator, Otis, Kone, Schindler, Hyundai present with some level of assembly operations
- **Local and international players** mostly based in Istanbul, Kocaeli, Bursa, Ankara, Konya, Kayseri and Izmir
- **Strong supplier base** - expertise in automotive, machinery and electronics & control systems
- **Strong local market** - demand driven by the growth in the industry and infrastructure & construction projects
- **2nd largest** escalator and moving walk market in the world with 2K new units per year
- **Opportunity for assembly and manufacturing** of parts

Source: MAKFED analysis 2022 values, IMDER, ISDER, press excerpts, Comtrade HS Source: Comtrade HS 8425, 8426, 8427, 8428
Türkiye’s production of lifting & handling equipment has almost tripled since 2010.

...and exports have reached USD 627 million in 2022.

USD 1.2 billion import in 2022 - almost 70% from China, Germany & Italy.

### Production (M$)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tackles &amp; Hoists</th>
<th>Forklifts</th>
<th>Cranes</th>
<th>Lifts, escalators, conveyors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1.0</td>
<td></td>
<td></td>
<td>45%</td>
</tr>
<tr>
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<tr>
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<td>1.3</td>
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<tr>
<td>2021</td>
<td>2.7</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2022</td>
<td>2.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: MAKFED analysis 2022 values, press excerpts, Comtrade HS 8425, 8426, 8427, 8428.
LIFTING & HANDLING EQUIPMENT

Source: MAKFED analysis 2022 values, press excerpts, Comtrade HS 8425, 8426, 8427, 8428
TÜRKİYE’S METALWORKING & MACHINE TOOLING MARKET HAS REACHED TO USD 3.4 BILLION IN 2022 - 11TH LARGEST IN THE WORLD

KEY FACTS

- **Strong industrial base** - largest in Central and Eastern Europe with USD 2.1 billion of production in 2022
- **Strong in laser machine tools, forging & punching machine tools (including presses)** - 80% of the exports
- **Exports have reached USD 1.23 billion in 2022 - 20% growth in the last three years** - industry diversifying its export markets to Russia, Germany, USA, Poland, Italy, Iraq.
- **Almost 30% of the USD 2.6 billion import in 2022 is for machining centers, transfer machines and lathes.**
- **Investment opportunity for CNC tools** - supplier base for CNC tools exist

DEMAND IS DRIVEN BY INDUSTRIES WHERE TÜRKİYE HAS A STRONG PRESENCE

- **AUTOMOTIVE**
- **WHITE GOODS**
- **AVIATION**
- **HEALTH CARE**

TÜRKİYE’S METALWORKING & MACHINETOOLING MANUFACTURING DOUBLED SINCE 2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (M$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0.7</td>
</tr>
<tr>
<td>2010</td>
<td>0.9</td>
</tr>
<tr>
<td>2011</td>
<td>1.2</td>
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<tr>
<td>2012</td>
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<td>2013</td>
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<td>2017</td>
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<td>2018</td>
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<tr>
<td>2021</td>
<td>2.1</td>
</tr>
<tr>
<td>2022</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Source: TIAD, MAKFED analysis 2022 values, press excerpts, Comtrade HS 8456, 8457, 8458, 8459, 8460, 8461, 8462, 8463, 8464, 8465, 8466, 8467, 8468, 8515
TÜRKİYE’S MARKET FOR PUMPS & COMPRESSORS HAS EXCEEDED USD 3 BILLION IN 2022

KEY FACTS

Industrial base - USD 1.9 billion of production in 2022; mostly based in Istanbul, Konya and Izmir

Majority of the companies are small-sized - over 9K employees in 500 companies

Strong local market - demand driven by the growth in the industries, municipal infrastructure investments, construction and agriculture

PUMPS & COMPRESSORS

COMPRESSORS

INDUSTRIAL

AIR COMPRESSORS

Mostly driven by special projects - low demand in Türkiye

GAS COMPRESSORS

Refrigerators, Residential A/C, Vehicle A/C

REFRIGERATION

Source: MAKFED analysis 2020 values, press excerpts, Comtrade HS 8413, 8414
Türkiye’s total imports stand at USD 2.6 billion, with Europe contributing approximately 38% to this import figure.

Türkije’s production of pumps & compressors has tripled since 2010.

...and exports have reached $1.6 billion where Europe & USA have a 50% share.

Source: MAKFED analysis 2022 values, press excerpts, Comtrade HS 8413, 8414
In 2022, Türkiye’s textile machinery market has achieved a value of USD 2.8 billion.

**KEY FACTS**

**Strong industrial base** especially in knitting and dyeing & finishing machines.

Demand in Türkiye’s textile machinery market is fueled by the thriving textile industry. Türkiye, ranking as the 8th largest textile exporter, achieved a remarkable **USD 31 billion** in exports in 2022. Europe holds approximately 20% of this market share, while China accounts for around 30%.

In response to escalating cost pressures from Asian countries, Türkiye’s textile industry is compelled to specialize, enhance added value, and modernize its machinery park, valued at **USD 25 billion**. Specialized segments such as technical textiles exemplify this strategic approach.

**EXPORTS (M$)**

Source: International Textile Manufacturers Federation, TEMSAD 2023 Report, KFED Analysis 2022, press excerpts, Comtrade HS 8444, 8445, 8446, 8447, 8448, 8449, 8451, 8452
Türkije’s textile machinery exports tripled in 10 years still low compared to $2.4 billion of imports

Türkije’s competitiveness in textile machinery categories

Spinning
70% of Türckije’s imports are from China, Germany & India.

Weaving
81% of Türckije’s imports are from Belgium & Italy. Türckije is the 3rd importer country in the world.

Dyeing & finishing
Türkije is the 5th importer of dyeing and finishing machines in the world.

Technical Textile
919 million USD export in 2022. The top three export countries are Uzbekistan, Bangladesh and Pakistan, respectively.

Knitting
Türkije is the 2nd importer of knitting machines in the world with its 385 million USD import.

Sewing
Turkish market dominated by China & Japan.

SUCCESS STORIES

MACHINERY GIANTS HAVE BEEN INVESTING IN TÜRKEİ FOR DECADES

B/S/H/

- The company’s brand portfolio includes 12 well-known appliance brands like Bosch, Siemens, Gaggenau, Profilo and Neff as well as the ecosystem brand Home Connect and service brands like Kitchen Stories.
- 39 production sites in Europe, the USA, Latin America and Asia as well as BSH employed about 63,000 people worldwide.
- BSH achieved record sales of €15.9 billion in 2022.
- At 5.3 percent of total turnover, R&D spending in 2022 remained high – with a focus on digital technologies.
- BSH Türkiye produced 5.68 million products from Çerkezköy Factories in 2023. 56% of the production is exported.
- BSH Türkiye is the first company that exports by rail to China from Türkiye.

IHI

- IHI Corporation - Japanese corporation that produces ships, aircraft engines, turbochargers, industrial machines, power station boilers and suspension bridges
- Had a revenue of USD 10.2 billion in 2022 with 28.5K employees
- Completed projects in Türkiye include Golden Horn Bridge, Fatih Sultan Mehmet Bridge, Osman Gazi Bridge and several reinforcement projects
- Formed a JV with Dalgakıran Makine with an investment of USD 14.4 million to produce turbo compressors in Türkiye in 2018 (60 employees)
- Uses Türkiye as a base for exports to Europe, the Middle East, and other growing markets.

MITSUBISHI ELECTRIC

- Japanese multinational electronics and electrical equipment manufacturing company with a total revenue of USD 37.5 billion in 2022
- Operational in Türkiye since 2012 especially in air conditioning, elevators and escalators, factory automation systems, visual information systems and transportation systems as well as electrification
- In 2018, opened its first air-conditioner manufacturing plant for Europe in Türkiye with an investment of USD 80 million
SUCCESS STORIES

MACHINERY GIANTS HAVE BEEN INVESTING IN TÜRKİYE FOR DECADES

SANY

- Established in Germany in 1958, its products include plants and equipment for concrete production, truck mixers, plastering machines, concrete injectors and concrete pumps
- Acquired by Chinese competitor Sany Heavy Industries for USD 402 million in 2012
- Manufacturing concrete pumps and mechanical and hydraulic distributors at its Çerkezköy plant since 2008

Putzmeister

Haier

- Founded as Qingdao Refrigerator Co. in 1984, Haier developed its product range to include washing appliances, built-in and small domestic appliances. It achieved a revenue of 36 Billion USD in 2022.
- Manufacturing in Türkiye since 2007 at its Eskişehir plant
- Invested EUR 200 Million in the last 5 years for the launch of 3 new plants in Türkiye, anticipated to create employment opportunities for approximately 4000 individuals.
- Türkiye serves as the primary production and export hub for Haier in Europe. Türkiye's plants play a pivotal role in manufacturing ovens, hobs, built-in appliances, dishwashers, and dryers for Haier. Remarkably, Haier Türkiye exports more than 90% of its production.

Haier

CANDY

Türk Traktör

- Turk Tractor was established in 1954. In 2008, the company merged with Italian company CNH Industrial.
- 2 production facilities in Ankara and Sakarya with 50,000-unit capacity.
- 2 R&D centres located in İstanbul and Ankara.
- As of 2022, Turk Tractor has reached 21 million TL sales revenue doubled in two years.
- Over 16,000 unit export and 35,000 unit local sales in 2023.