



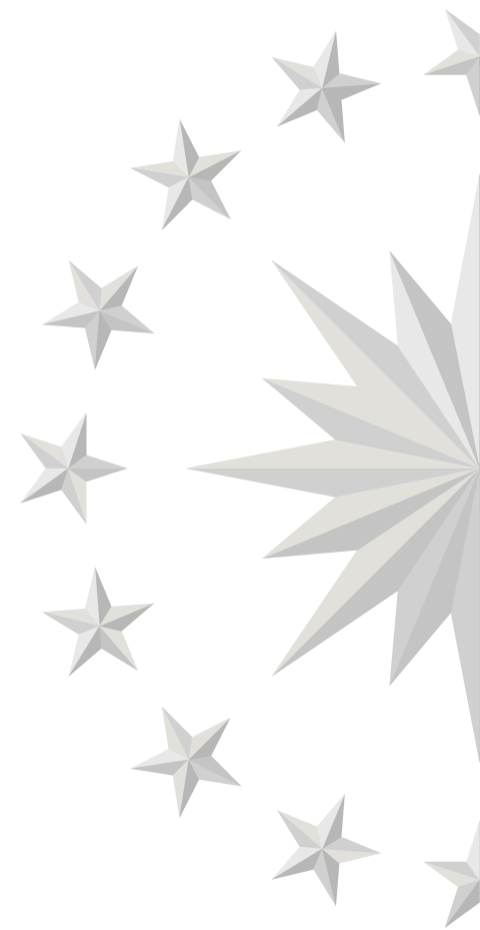
WHY INVEST IN TURKISH MACHINERY INDUSTRY?



PRESIDENCY OF THE REPUBLIC OF TURKEY
INVESTMENT OFFICE



MAKFED
Turkish Machinery Federation



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Success Stories

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Growth Drivers in
Turkey



TURKEY 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 have been present in Turkey with significant manufacturing activities, using Turkey 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 strong 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



- Turkish machinery industry has been robustly growing over the past decade with approx. 5% CAGR
- Customer industries, such as plastic & rubber, automotive, construction, textile and electrical machinery are robustly growing and therefore further supporting the growth of machinery sector
- Export opportunities due to Turkey's proximity to regional markets



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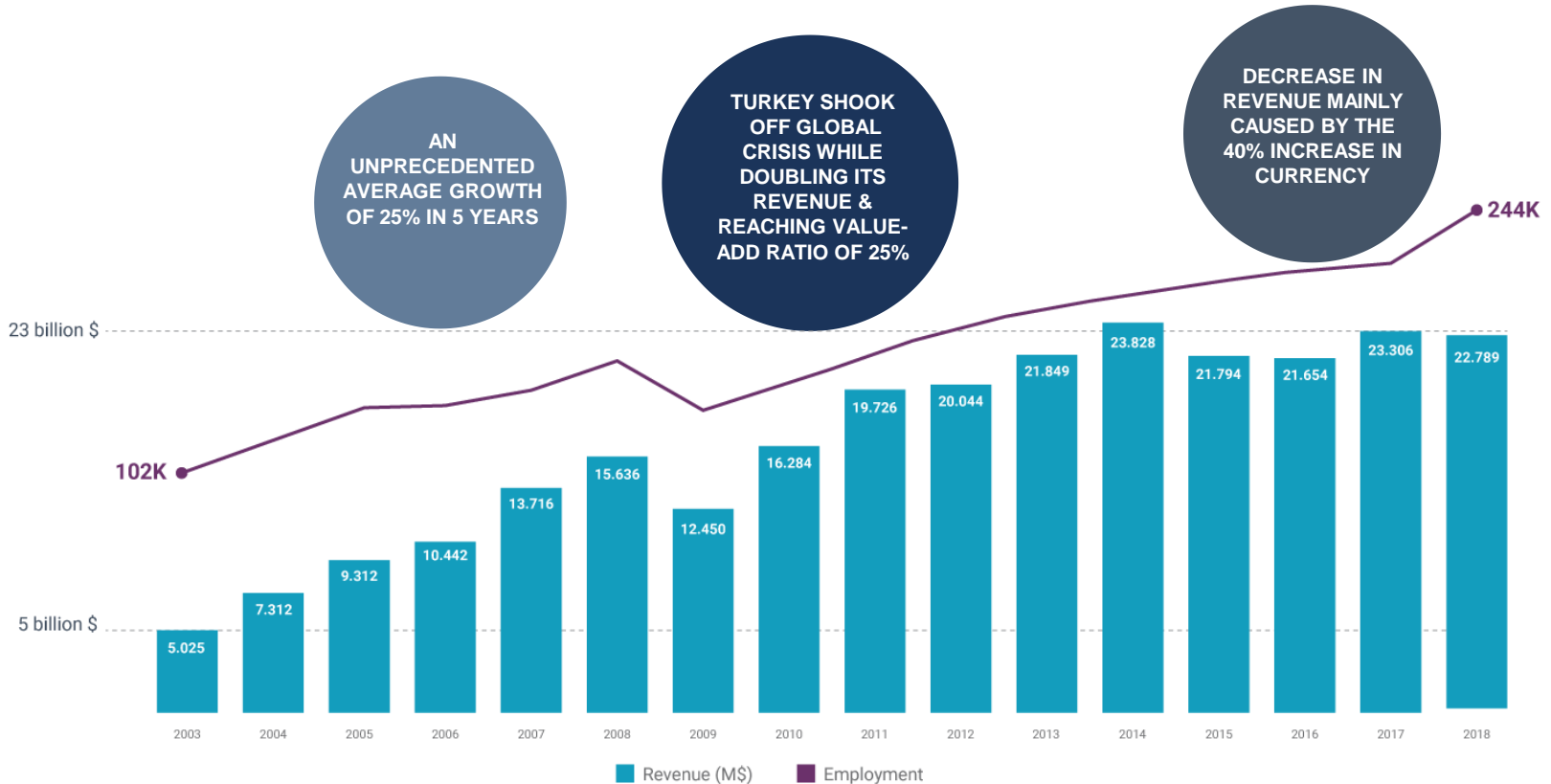
Success Stories

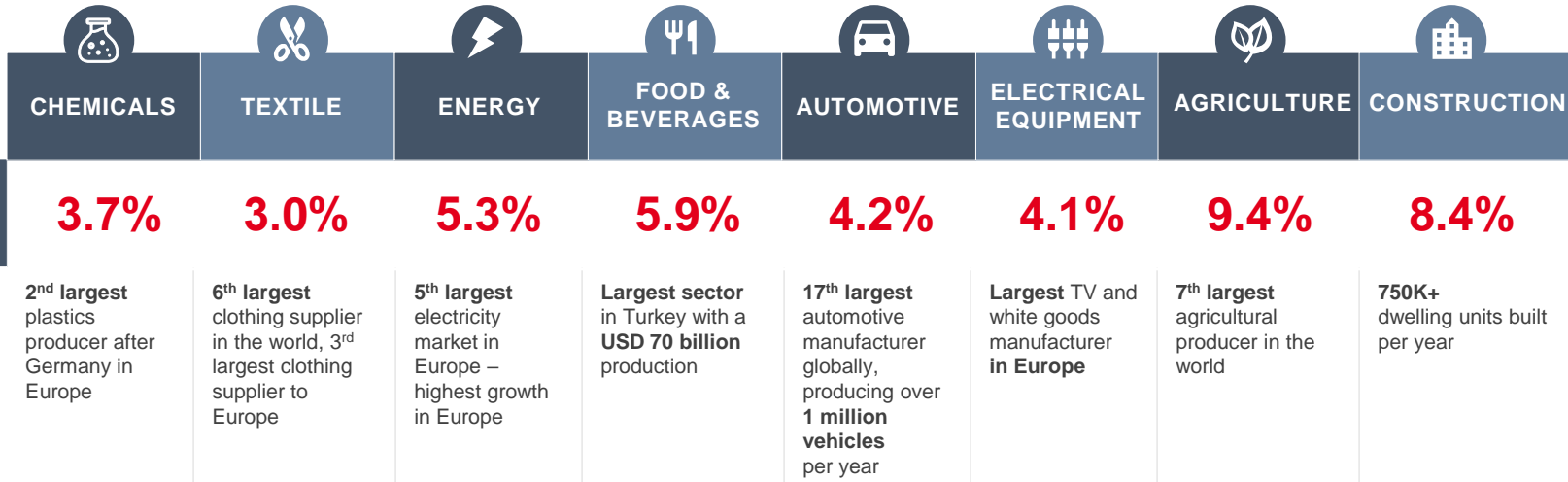
3

Growth Drivers in
Turkey



TURKISH MACHINERY SECTOR HAS MORE THAN QUADRUPLED ITS REVENUES TO USD 23 BILLION AND DOUBLED ITS WORKFORCE TO 244K OVER THE PAST DECADE





TURKEY'S EXPORTS HAVE GROWN FIVE TIMES SINCE 2003, MAKING IT ONE OF THE TOP PERFORMERS IN THE WORLD MACHINERY TRADE

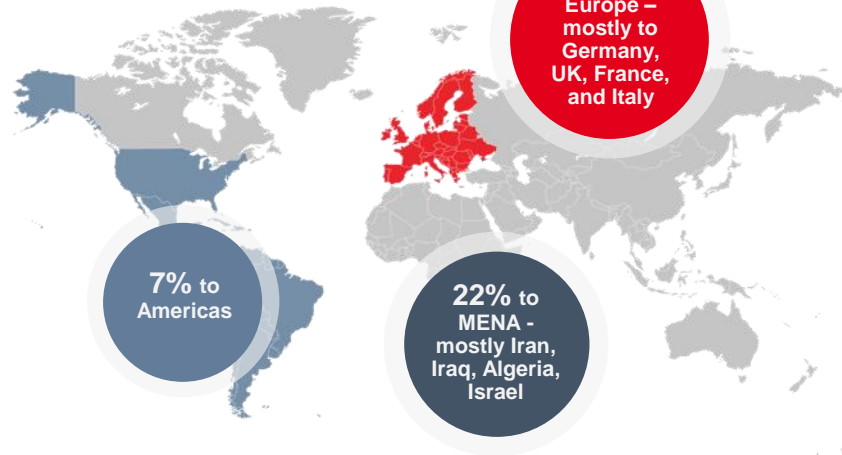
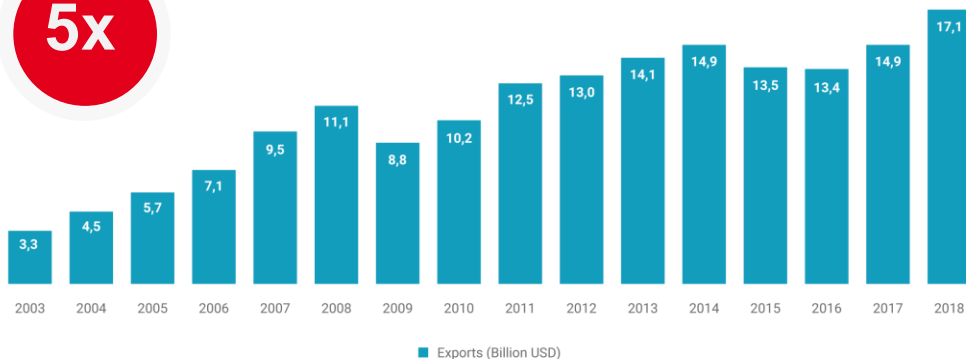


WHEN WORLD EXPORTS DOUBLED, TURKEY'S EXPORTS INCREASED FIVE TIMES...



...WHILE DIVERSIFYING ITS EXPORT MARKETS:

5x



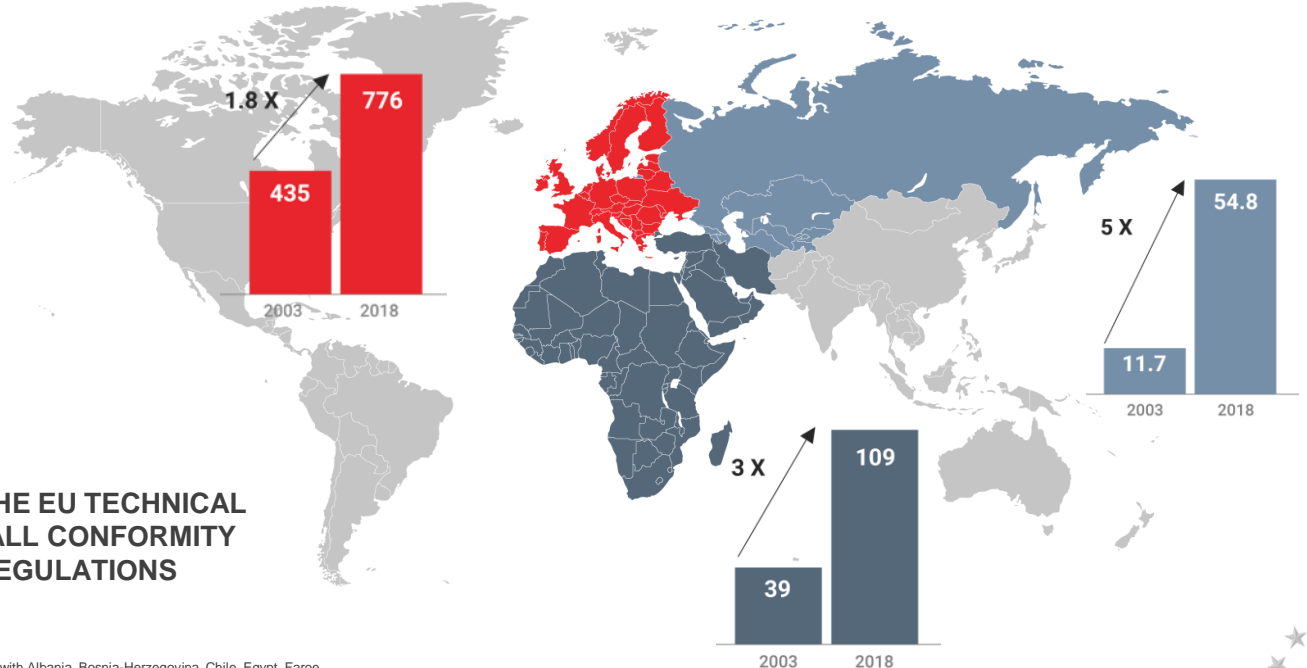
TURKEY IS WELL CONNECTED WITH THE REGION THROUGH **CUSTOMS UNION** WITH THE EU AND FREE TRADE AGREEMENTS WITH 28 COUNTRIES



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

TURKEY FULLY COMPLIES WITH THE EU TECHNICAL LEGISLATIONS SINCE 2002, WITH ALL CONFORMITY ASSESSMENTS IN LINE WITH EU REGULATIONS

IMPORT NUMBERS
(IN BILLION \$)



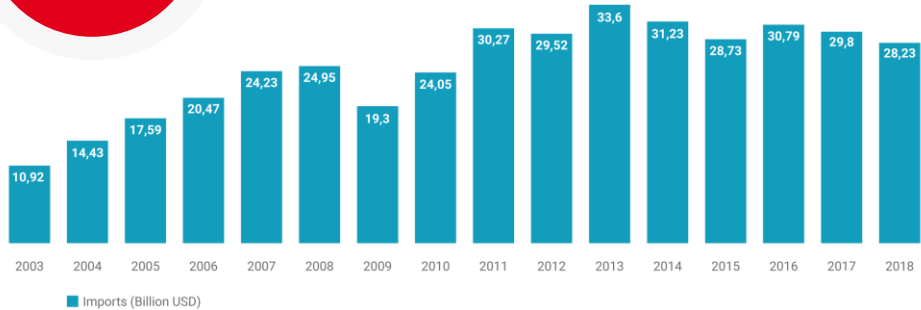
Source: UN Comtrade HS Code 84, Turkey has signed Free Trade Agreements (FTA) with Albania, Bosnia-Herzegovina, Chile, Egypt, Faroe Islands*, Georgia, Ghana*, Iceland, Israel, Jordan, Kosovo*, Lebanon*, Macedonia, Malaysia, Mauritius, Montenegro, Moldova*, Morocco, Norway, Palestine, Serbia, Singapore*, South Korea, Switzerland and Lichtenstein, Syria, Tunisia. (*to be ratified).



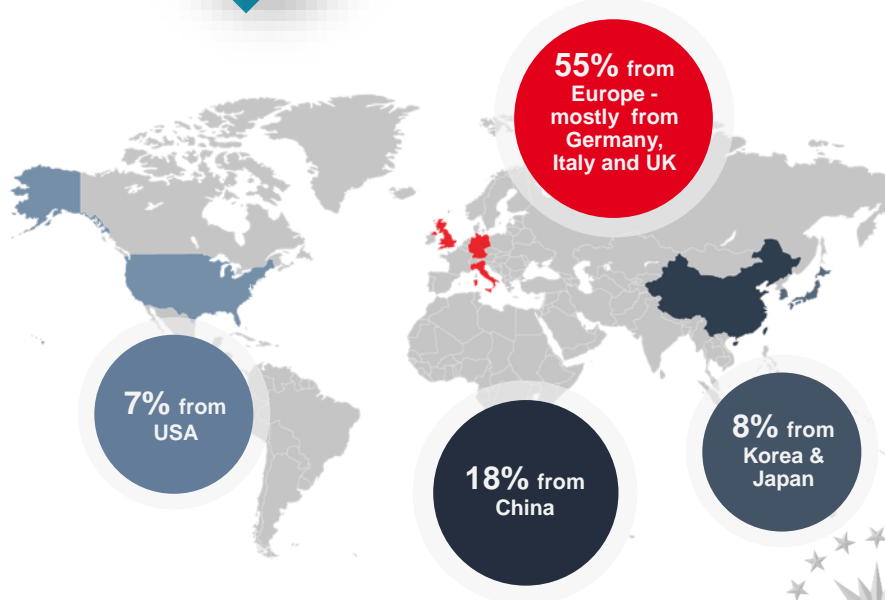
TURKEY HAS ALMOST TRIPLED ITS IMPORTS TO USD 28 BILLION AND NOW IS THE 24TH LARGEST IMPORTER IN THE WORLD

TURKEY HAS INCREASED ITS EXPORT/IMPORT RATIO FROM 30% TO 60% SINCE 2003...

30% to 60% since 2003



...WITH THE FOLLOWING BREAKDOWN BY COUNTRIES:



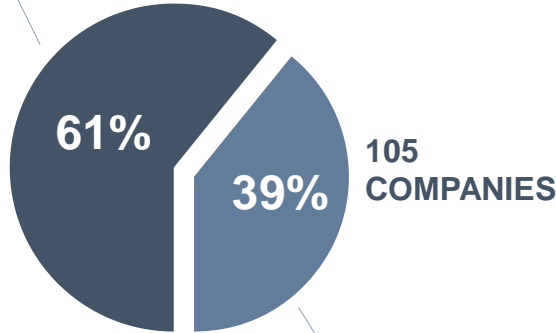
THERE ARE OVER 16K COMPANIES IN TURKISH MACHINERY SECTOR WHERE BOTH LOCAL AND INTERNATIONAL PLAYERS ARE ACTIVE

OVER 60% OF MACHINERY REVENUE IS MADE BY SMALL AND MEDIUM ENTERPRISES

10 OF THE LARGEST 25 PLAYERS ARE INTERNATIONAL & EXPORT RATE IS 40% ON AVERAGE

Total Revenue in Machinery Sector in 2017

< 250 employees



75% of the companies have <10 employees.

Growth requires access to:

- Market
- Technology
- International finance

40% export on average



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13TH LARGEST ECONOMY IN THE WORLD



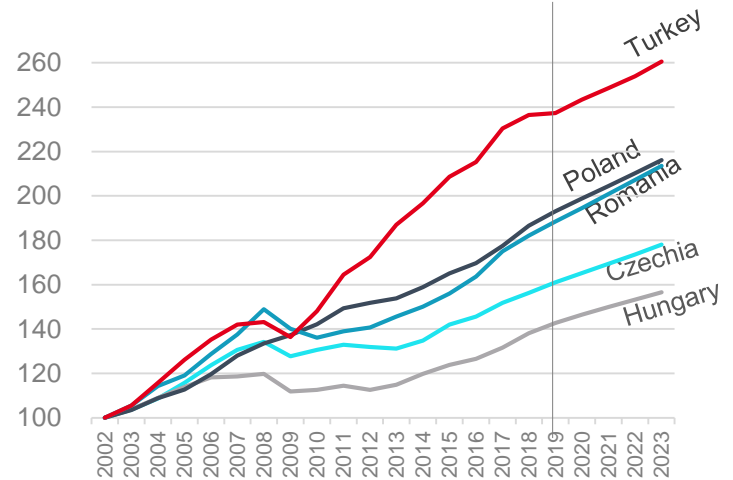
AVERAGE ANNUAL GDP GROWTH (%), 2003-2018



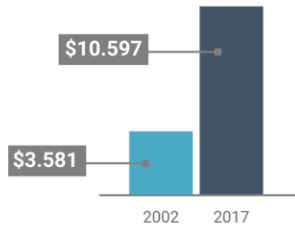
RANKING OF ECONOMIES BY GDP AT PPP

2003	2018
1. USA	1. CHINA
2. CHINA	2. USA
3. JAPAN	3. INDIA
4. GERMANY	4. JAPAN
5. INDIA	5. GERMANY
6. RUSSIA	6. RUSSIA
7. FRANCE	7. INDONESIA
8. UK	8. BRAZIL
9. BRAZIL	9. UK
10. ITALY	10. FRANCE
11. MEXICO	11. MEXICO
12. INDONESIA	12. ITALY
13. SPAIN	13. TURKEY
14. CANADA	14. S.KOREA
15. S.KOREA	15. SPAIN
16. S.ARABIA	16. S.ARABIA
17. IRAN	17. CANADA
18. TURKEY	18. IRAN

REAL GDP GROWTH (INDEX: 2002=100)

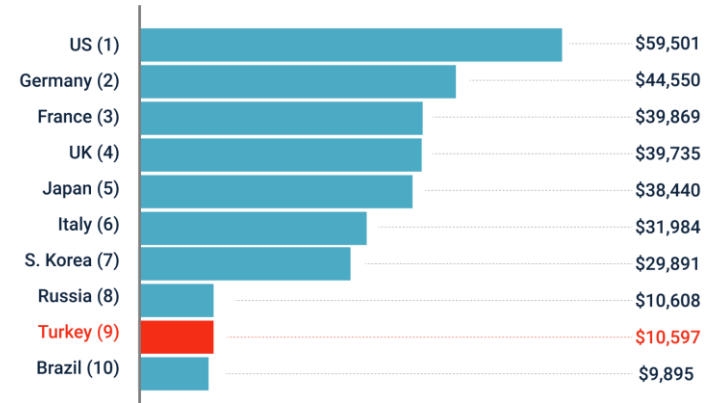


TRIPLING INCOME PER CAPITA (GDP PER CAPITA, CURRENT PRICES)



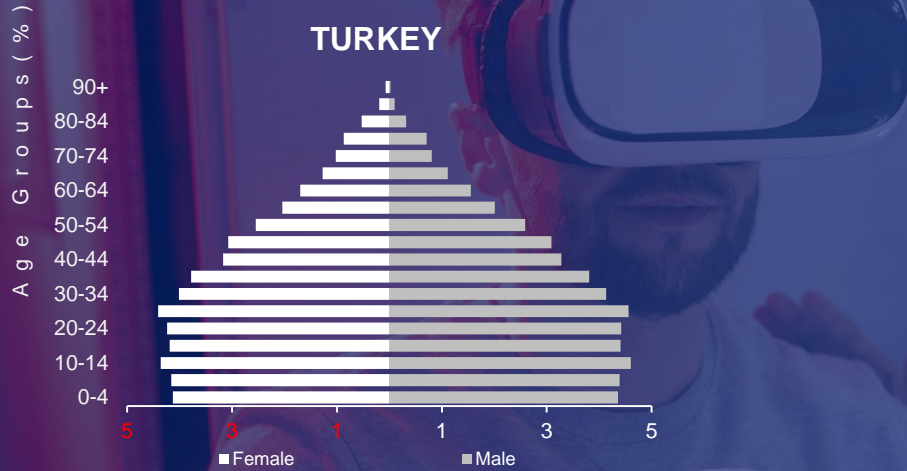
Among countries with population over 50 million, only 9 countries have GDP per capita over USD 10,000

GDP PER CAPITA IN COUNTRIES WITH POPULATION OVER 50 MILLION

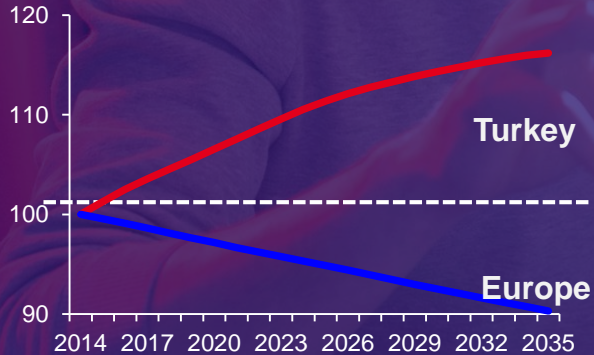


FAVORABLE DEMOGRAPHICS

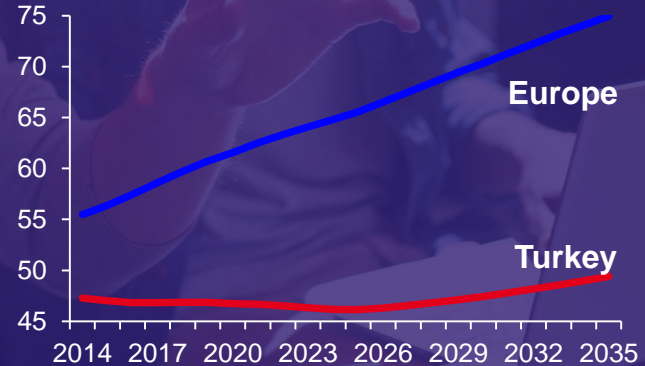
...HALF OF POPULATION UNDER AGE 30



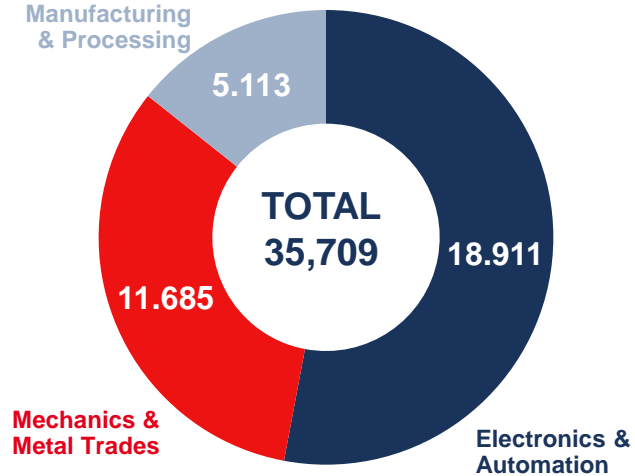
Working Age Population (15-64) (Index: 2014=100)



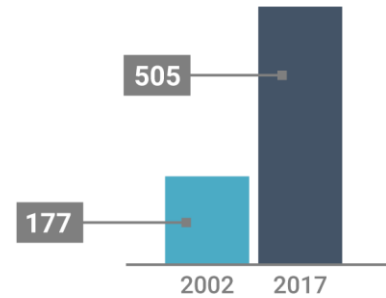
Total Dependency Ratio (% (Age 0-14 & 64)/Age 15-64)



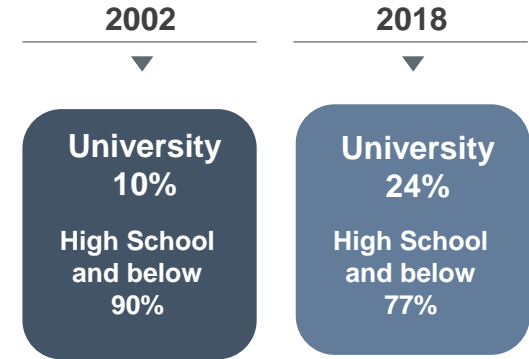
ANNUAL NUMBER OF UNIVERSITY GRADS IN MECHANICAL FIELDS
(2018)



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



LABOR FORCE BY EDUCATION LEVEL

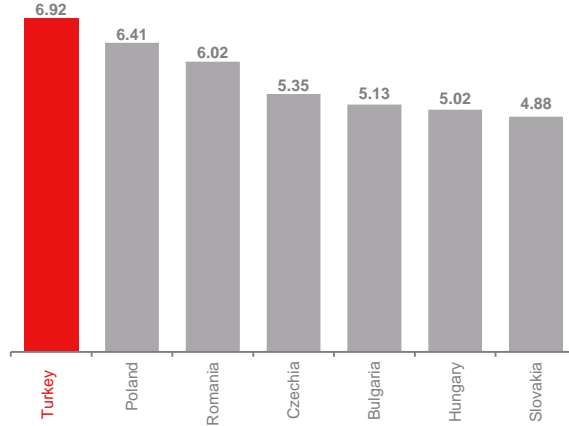


SKILLED & COST-COMPETITIVE LABOR FORCE



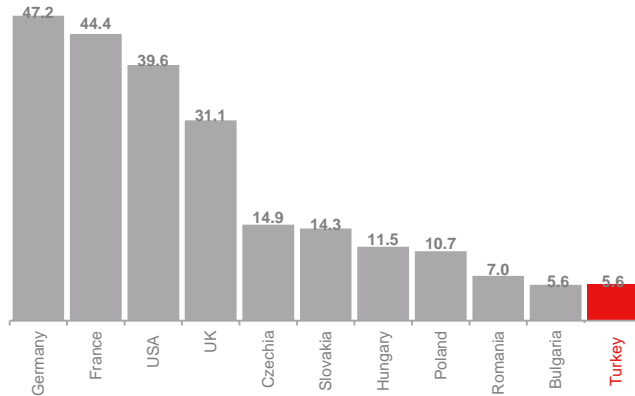
AVAILABILITY OF QUALIFIED ENGINEERS, 2018

(10=Available; 0=Unavailable)



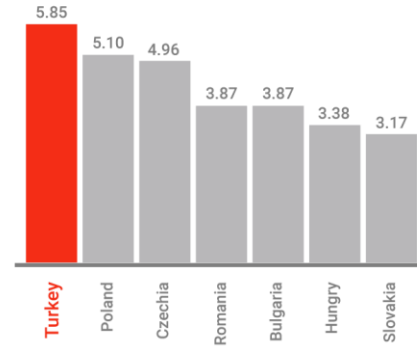
LABOR COST PER HOUR IN MANUFACTURING

(\$), 2018



AVAILABILITY OF COMPETENT SENIOR MANAGERS, 2017

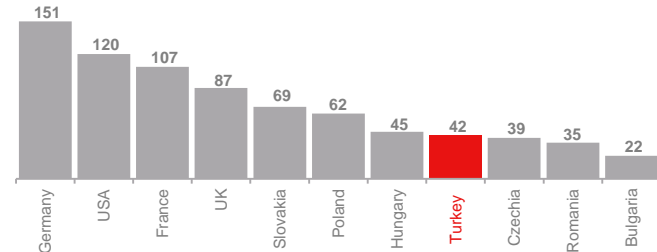
(10=Available; 0=Unavailable)



REMUNERATION OF MANAGEMENT/ENGINEER

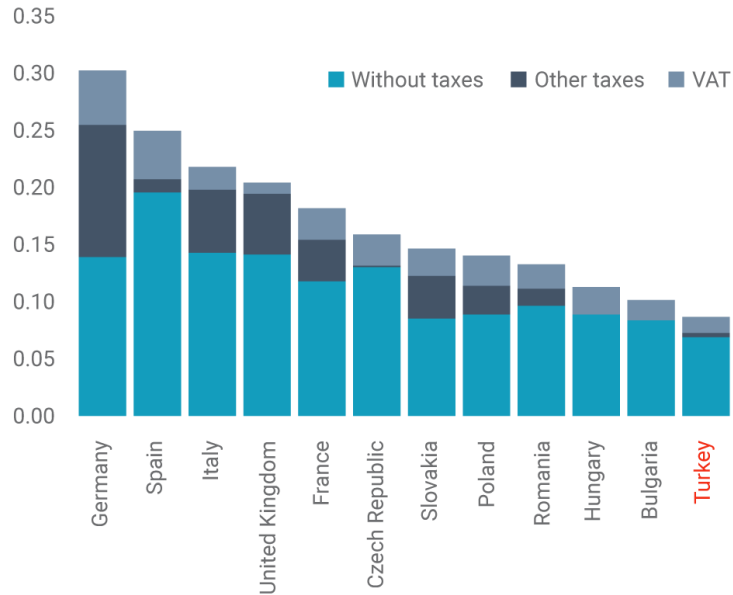
Total base salary plus bonuses and long-term incentives

(\$K, 2017)



ELECTRICITY AND NATURAL GAS PRICES IN TURKEY HAVE BEEN COST COMPETITIVE IN COMPARISON WITH THE EU...

Electricity Prices for Household Consumers, H2 2018
(EUR per kWh)



Natural Gas Prices for Non-Household Consumers, H2 2018
(EUR per kWh)





MAIN INCENTIVE TOOLS

Tax Deduction: Reduced tax rates for investor's income (50-90 %) until the total deduction reaches a certain percentage of capex. (15-65 % of capex, in the case of project based incentives up to 200% of capex). For R&D investments, all R&D expenditures are deducted from tax base.

VAT Exemption: Investment machinery and equipment imported and/or locally provided within the scope of the incentive certificate will be VAT exempt.

Customs Duty Exemption: Investment machinery and equipment imported within the scope of the incentive certificate will be customs duty exempt.

Interest Rate Support: For investment loans, a certain portion of the interest share will be covered by government. (3-7 % points for TRY-denominated, 1-2% points for forex-denominated loans) (500K-900K TRY).

Land Allocation: Government land will be allocated for the investments, if no land is available in OIZs.

Income Tax Withholding Exemption will provide exemption from income tax withholding (only for Region 6).

MACHINERY SECTOR INVESTMENTS AND R&D ARE CONSIDERED AS PRIORITY INVESTMENTS AND CAN BENEFIT FROM VARIOUS LUCRATIVE INCENTIVES..

Main Incentive Tools	Incentive Schemes					
	General Incentives	Regional Incentives	Incentives for Large Scale Investments	Incentives for Strategic Investments	Project-Based Incentives	R&D Incentives
Corporate Tax Reduction		●	●	●	●	●
VAT/Custom Duty Exemption	●	●	●	●	●	●
Social Security Premium Support		●	●	●	●	●
Income Tax Withholding Support*	●	●	●	●	●	●
Interest Support**		●				
Land Allocation		●	●	●	●	
Partnership (Equity Investment by Gov.)					●	
Guarantee of Purchase by Gov.					●	
Energy Cost Support					●	

*Provided that investments, except R&D, are made in Region 6, ♦**Provided that investment, except R&D, are made in Regions 3, 4, 5 or 6 within the frame of the Regional Incentive Scheme
Source: Ministry of Economy, MSTI



START

Technostartup Incentives:
Cash support
up to 500K 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 25-40% of the
personnel cost



MANUFACTURING

**Technoinvestment
Incentives:**
Cash support up to 10M TRY
for SMEs, 2M TRY for
large companies



GROWTH & COMPETITION

Patented sales:
Income Tax & VAT Exemption



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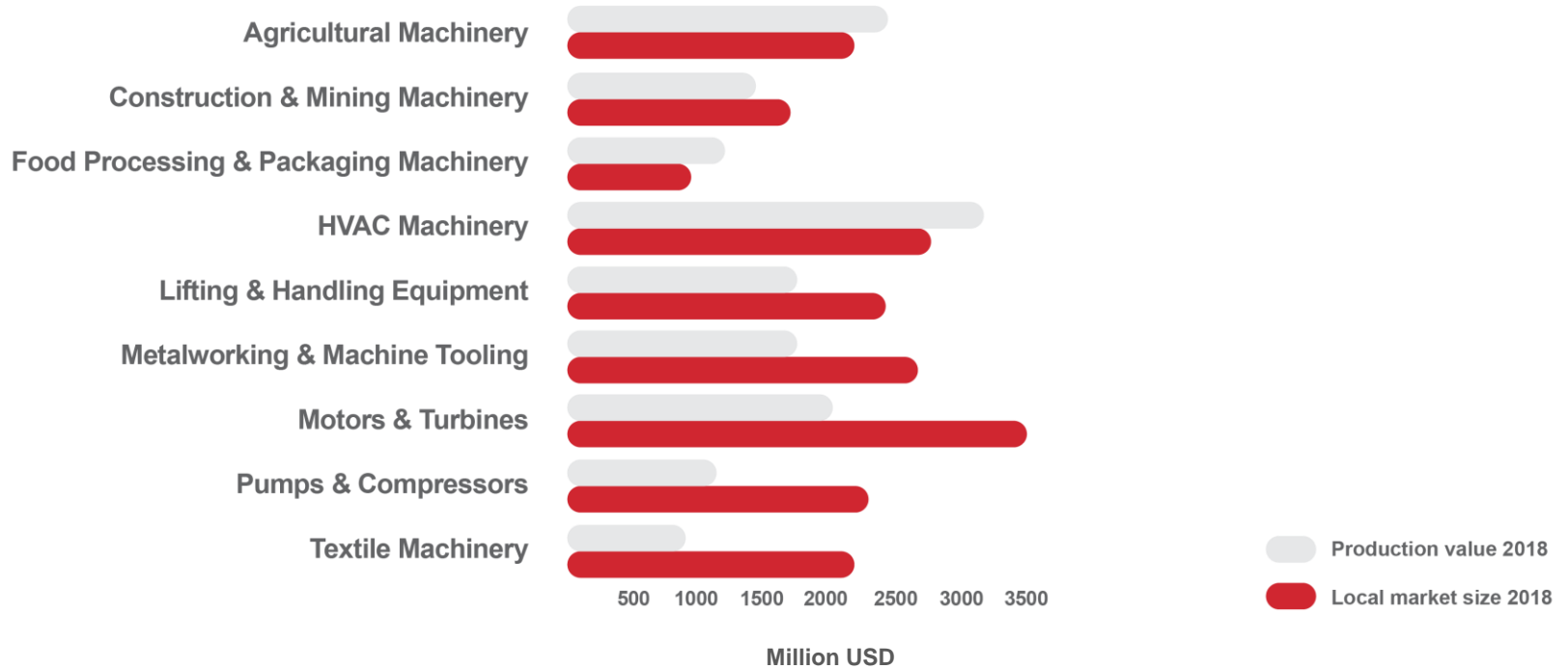
3 Growth Drivers in Turkey

4 Opportunities in Turkish Machinery Industry

5 Success Stories



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



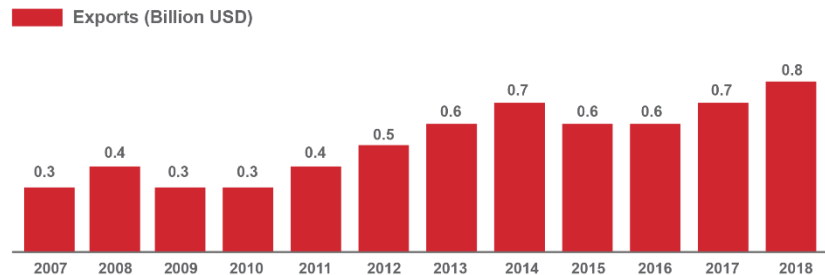
TURKEY'S AGRICULTURAL MACHINERY MARKET HAS REACHED TO USD 2.1 BILLION IN 2018 - 4TH IN EUROPE

KEY FACTS

- **Strong industrial base** – over 10% share in Europe's production with **over 48K** units in 2018
- **Strong local market** – **largest** tractor sales in Europe, 5th in the world, **75%** of the local market supplied by local players
- **Over 70%** of the imports are higher-value tractors and harvesting machinery – investment opportunity for production
- Tractor manufacturing ecosystem with local and international players with a total of **5K employees**



TURKEY'S AGRICULTURAL MACHINERY EXPORTS ALMOST TRIPLED IN 10 YEARS..



..AND 2 OUT OF 3 TRACTORS GOES TO USA & ITALY

DEMAND DRIVEN BY TURKEY'S AGRICULTURAL ECONOMY AND FRAGMENTED STRUCTURE:

Agricultural GDP
USD 42.5 Billion



Agricultural land
25 Million ha



Arable land
5.1 Million ha



Average enterprise size
6 ha



TURKEY'S CONSTRUCTION MACHINERY MARKET HAS REACHED USD 1.7 BILLION IN 2018 – 7TH IN EUROPE, 11TH IN THE WORLD

KEY FACTS

- **Strong local market** - 3rd largest growth in the world after China and India for the last eight years
- Local and international companies exist - local market supplied by **35% local production** and **65% import**
- Europe's **10th largest manufacturing base** with strong players, **USD 1.4 billion production** and **USD 1.2 billion** of exports in 2018
- Strong & international supplier base - Construction machinery industry can benefit from the supplier base of automotive manufacturing industry in Turkey, which is a European manufacturing hub and has reached **1.7 million** units
- Local demand driven by public infrastructure and urbanization projects - opportunity for smaller sized construction machinery
- Access to international markets enabled through Turkish construction companies – **46 contractors in ENR250 list**



TURKEY INVESTED **USD 100 BILLION**
TO INFRASTRUCTURE PROJECTS
IN THE LAST 5 YEARS..

..ANOTHER **USD 325 BILLION**
IS EXPECTED BY 2023



3rd Istanbul Airport



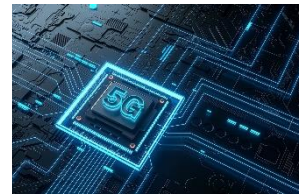
3rd Istanbul Bridge



Urban Transformation Projects



Public Hospital Project



TURKEY'S ENERGY EQUIPMENT (ELECTRIC MOTORS & TURBINES) MARKET HAS REACHED USD 3.6 BILLION IN 2018

KEY FACTS

- **5th largest** electricity market in Europe; highest growth in Europe with 5.3%
- **Over USD 75 billion** of energy investments made in the last 10 years
- Electricity demand and supply to grow by **50%** by **2030** – renewable and local energy resources are priorities
- **Opportunities** in production of **wind/hydro/steam turbines** and **generators**

WIND

10GW by 2020; 7.3GW total in 2018

USD 250 million of wind turbine imports in 2018 – 70% decrease since 2016

YEKA tender for 1GW made in 2017; winning consortium is **Siemens-Turkerler-Kalyon** at 3.48c/kWh with local production required

GEOTHERMAL & BIOMASS

1.3GW geothermal & 500MW biomass in 2018; 600MW geothermal in the pipeline

USD 55 million of steam turbine imports in 2018 – 80% decrease since 2016

SOLAR

10GW by 2030; 5GW total in 2018

75% of solar panel imports are from Asia

YEKA tender for 1GW was made in 2017; winning consortium is **Hanwha QCells-Kalyon** at 6.99c/kWh with local production required

ELECTRIC MOTOR

USD 787 million of electric motor & generator imports in 2018 - 60% from China, Germany, Italy and Slovakia

HYDRO

34GW by 2023; 29GW total in 2018

USD 9 million of hydro turbine imports in 2018 - 80% decrease since 2016

NUCLEAR

3 nuclear power projects by 2023

Akkuyu and 2nd nuclear project will lead to USD 16 billion of products & service sales

Nuclear supply chain in Turkey to develop through international partnerships

COAL

10GW lignite, 8.8GW imported coal

18.5GW new capacity for lignite to be developed via PPAs

Lignite power projects are supported via capacity payments, PPAs and tax cuts

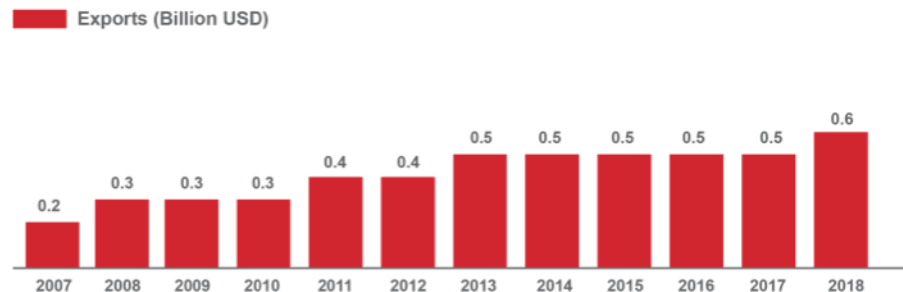
TURKEY'S FOOD PROCESSING & PACKAGING MACHINERY MARKET HAS REACHED USD 800 MILLION IN 2018

KEY FACTS

- **Strong industrial base** with a production value of **USD 1 billion** clustered in Istanbul, Konya, Ankara, Gaziantep and Izmir
- Demand driven by the strong packaged food and beverages market in Turkey – **USD 11 billion export in 2018**
- **USD 400 million** of import in 2018 – major imports are machinery for industrial preparation of food or drink, for treating material by heat change and machinery for filtering or purifying water
- **Turkey is a manufacturing base** for international food giants like **Unilever, Kraft, Nestle, Danone, Ferrero** with **over 15K employees**



TURKEY'S FOOD PROCESSING & PACKAGING MACHINERY EXPORTS TRIPLED IN 10 YEARS



...WHERE 80% OF EXPORTS ARE MACHINERY FOR

- Processing & milling of grains and cereals
- Industrial preparation of food or drink
- Milking machines and dairy machinery

...AND TOP5 EXPORT MARKETS ARE

- Algeria
- Iraq
- Uzbekistan
- Sudan
- Kazakhstan

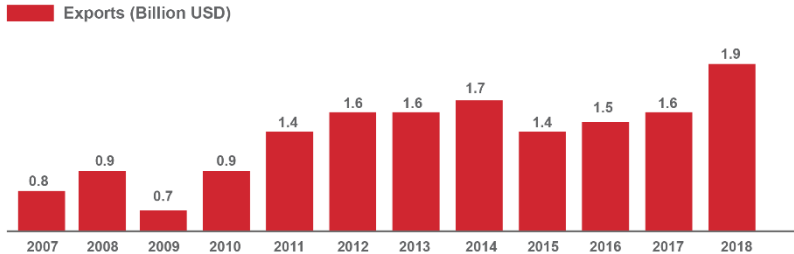
KEY FACTS

- **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 3rd largest** split AC market with **1M** 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 – **46 contractors in ENR250 list**

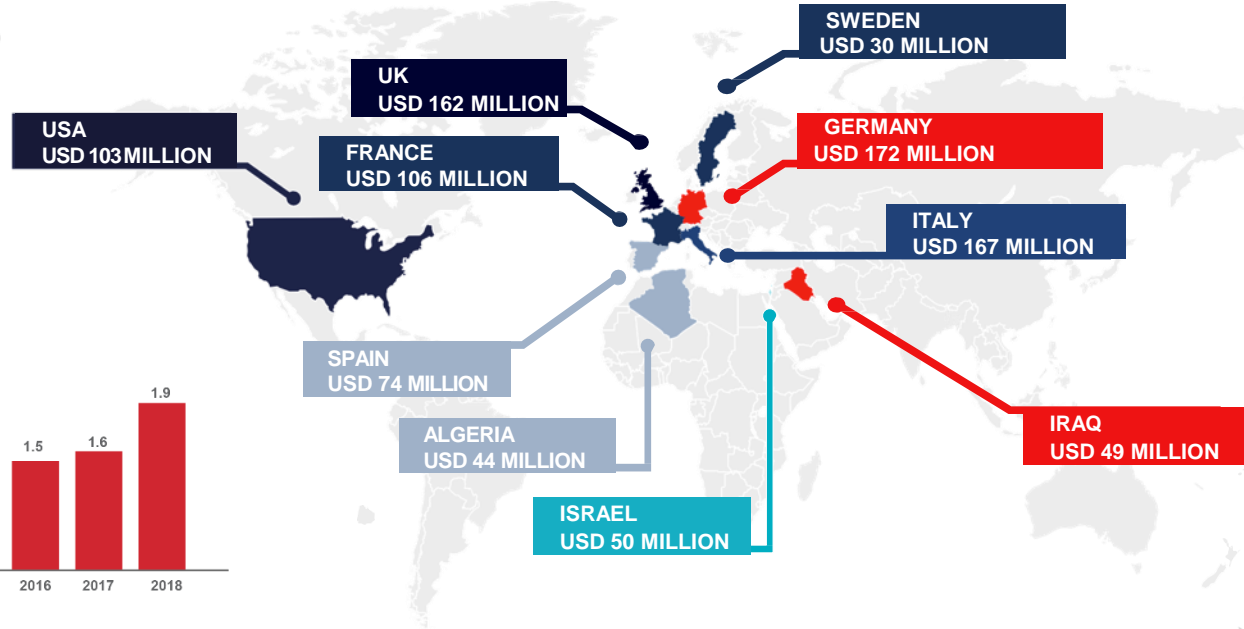




TURKEY'S HVAC EXPORTS MORE THAN DOUBLED IN 10 YEARS



...WHERE EUROPE HAS OVER 40% SHARE



KEY FACTS

- **Strong industrial base** – USD 1.7 billion of production in 2018
- **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
- **3rd largest** elevator market in the world with 30K new units - ThyssenKrupp, Otis, Kone, Schindler, Hyundai present with some level of assembly operations
- **2nd largest** escalator and moving walk market in the world with 2K new units per year
- **Opportunity for assembly and manufacturing** of parts
- **Strong local market** – demand driven by the growth in the industry and infrastructure & construction projects

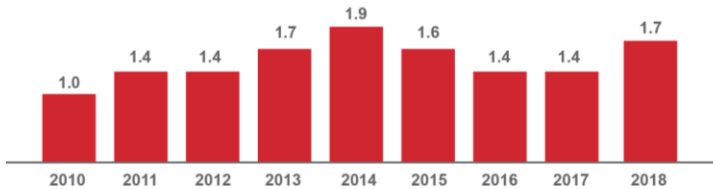




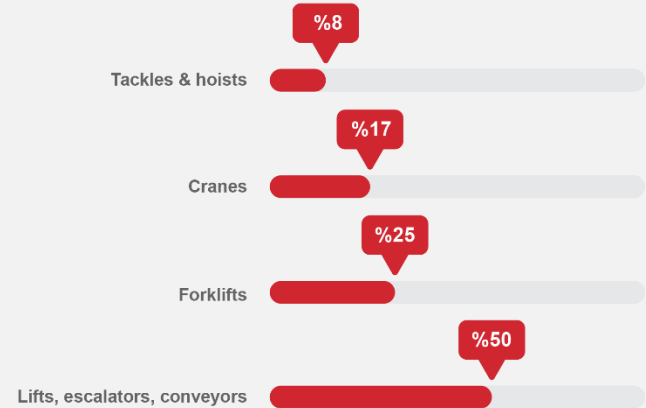
TURKEY'S PRODUCTION OF LIFTING & HANDLING EQUIPMENT HAS INCREASED BY 40% SINCE 2010..

...AND EXPORTS HAVE REACHED USD 370 MILLION IN 2018 - AN IMPRESSIVE 60% GROWTH IN TWO YEARS

Production (Billion USD)



USD 1.1 BILLION IMPORT IN 2018 - ALMOST 70% FROM CHINA, GERMANY & ITALY

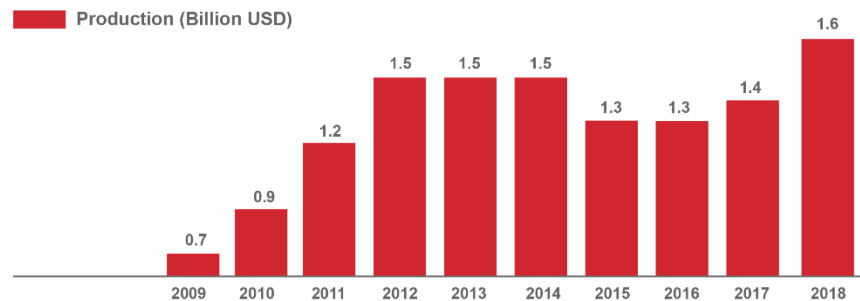


TURKEY'S METALWORKING & MACHINE TOOLING MARKET HAS REACHED TO USD 2.6 BILLION – 11TH LARGEST IN THE WORLD

KEY FACTS

- **Strong industrial base** – largest in Central and Eastern Europe with **USD 1.6 billion** of production in 2018
- Strong in laser machine tools, forging & punching machine tools (including presses) – **80% of the exports**
- Exports have reached USD 855 million in 2018 – 30% growth in the last two years – industry diversifying its export markets to USA, Canada, Mexico, Brazil and India
- Over 40% of the USD 1.8 billion import in 2018 is for machining centers, transfer machines and lathes - mostly from Germany & Italy
- **Investment opportunity for CNC tools** - supplier base for CNC tools exist

TURKEY'S METALWORKING & MACHINETOOLING MANUFACTURING DOUBLED SINCE 2009



DEMAND IS
DRIVEN BY
INDUSTRIES
WHERE TURKEY
HAS A STRONG
PRESENCE



AUTOMOTIVE



WHITE GOODS



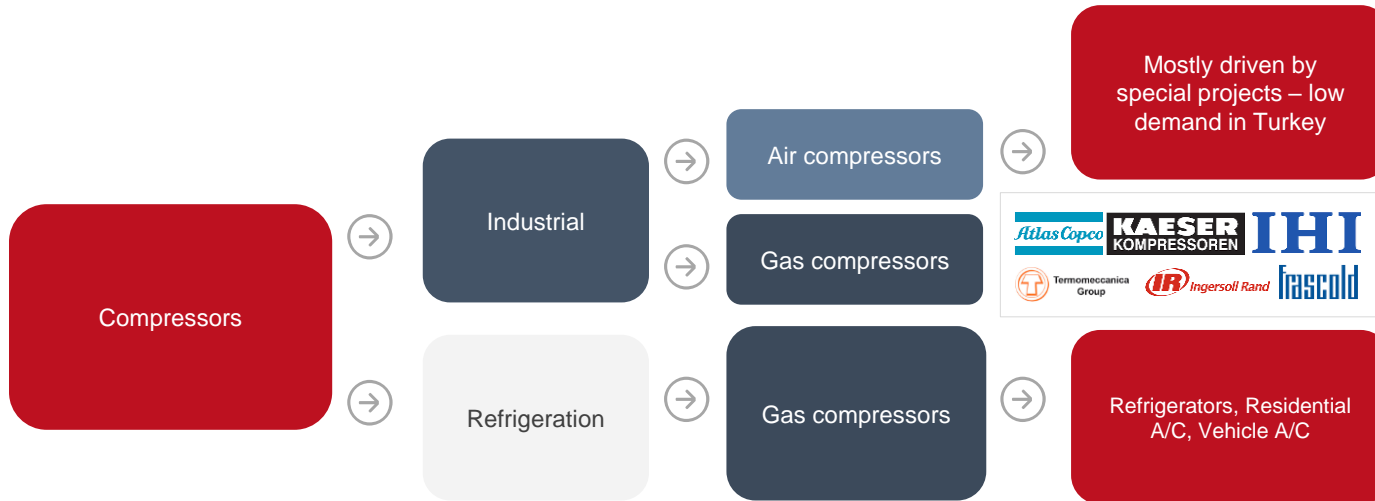
AVIATION



HEALTH CARE

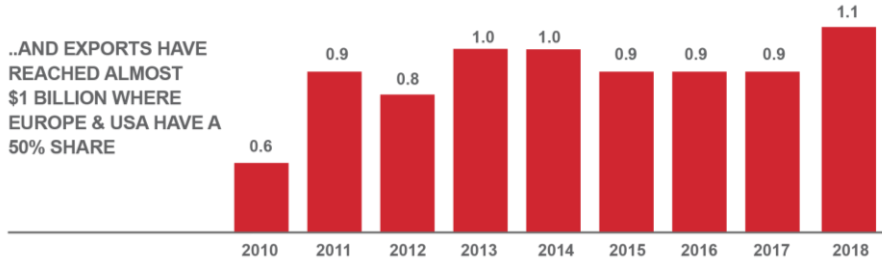
KEY FACTS

- Industrial base - **USD 1.1 billion** of production in 2018; 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



TURKEY'S PRODUCTION OF PUMPS & COMPRESSORS HAS INCREASED BY 50% SINCE 2010

Production (Billion USD)



..AND EXPORTS HAVE REACHED ALMOST \$1 BILLION WHERE EUROPE & USA HAVE A 50% SHARE

TURKEY HAS USD 2 BILLION OF IMPORTS WHERE EUROPE HAS AROUND 60% SHARE:



KEY FACTS

- **Strong industrial base** especially in knitting and dyeing & finishing machines
- Demand driven by textile industry – Turkey is the **7th largest** textile exporter with USD 10.5 billion in 2018
- Due to high cost pressure from Asian countries, Turkey's textile industry needs to specialize and increase its added-value while upgrading or renewing its **USD 25 billion** machinery park - technical textile is an example

TURKEY'S TEXTILE MACHINERY MARKET HAS REACHED USD 2.2 BILLION IN 2018

TURKEY'S TEXTILE MACHINERY EXPORTS TRIPLED IN 10 YEARS – STILL LOW COMPARED TO \$1.9 BILLION OF IMPORTS



TURKEY'S COMPETITIVENESS IN TEXTILE MACHINERY CATEGORIES



SPINNING

70% of **Turkey's** imports are from **Switzerland, Germany & Italy**

WEAVING

80% of **Turkey's** imports are from **Belgium & Italy**

KNITTING

DYEING & FINISHING

SEWING

Turkish market dominated by **China & Vietnam**

TECHNICAL TEXTILE

Developing in **Turkey** for non-woven applications:
Carpets
Automotive
Apron dresses etc.

3% OF WORLD EXPORTS



AGENDA

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Growth Drivers in
Turkey





- Mahindra Farm Equipment (M&M) - part of the USD 19 billion Mahindra Group based in India
- Had a revenue of USD 14 billion in 2017
- Manufacturing tractor cabins & industrial components, foundry, engines and transmission
- Operational with 865 employees in three facilities at Hisarlar, 355 employees in two facilities of Erkunt, and owns an R&D center
- Uses Turkey as a regional hub for Turkey, the Middle East, CIS and Europe
- Acquired 75% of Hisarlar Makina at USD 19 million in 2017

Putzmeister

- Established in Germany in 1958, its products include plant 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 Cerkezkoj plant since 2008

IHI

- IHI Corporation - Japanese corporation that produces ships, aircraft engines, turbochargers, industrial machines, power station boilers and suspension bridges
- Had a revenue of USD 14 billion in 2017 with 30K employees
- Completed projects in Turkey include Golden Horn Bridge, Fatih Sultan Mehmet Bridge, Osman Gazi Bridge and several reinforcement projects
- Formed a JV with Dalgakiran Makine with an investment of USD 14.4 million to produce turbo compressors in Turkey in 2018 (60 employees)
- Uses Turkey as a base for exports to Europe, the Middle East, and other growing markets



- Established in Italy, its products include washing appliances, built-in and small domestic appliances. Had a revenue of 1.1 Billion in 2017
- Manufacturing in Turkey since 2007 at its Eskisehir plant
- Invested EUR 15 Million for the launch of a new plant in Turkey with an employment of 300 people
- Uses Turkey plant as a base for oven and stove manufacturing, built-in appliances and dryers and exports over 90% of its production



- Japanese multinational electronics and electrical equipment manufacturing company with a total revenue of USD 39 billion in 2017
- Operational in Turkey 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 of Europe in Turkey with an investment of USD 80 million



- Established in the USA in 1899, its products include pistons, rings&liners, valve seats&guides, engine bearings and sealing
- Had a revenue of USD 7.3 billion in 2014
- Operational in Turkey since 1998, currently has two facilities with a total employment of 1600 people
- Has invested a total of EUR 400 million in Turkey by 2017
- 80% of the piston production is exported to Europe and USA as original equipment

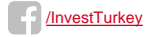
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PRESIDENCY OF THE REPUBLIC OF TURKEY
INVESTMENT OFFICE



MAKFED
Turkish Machinery Federation

