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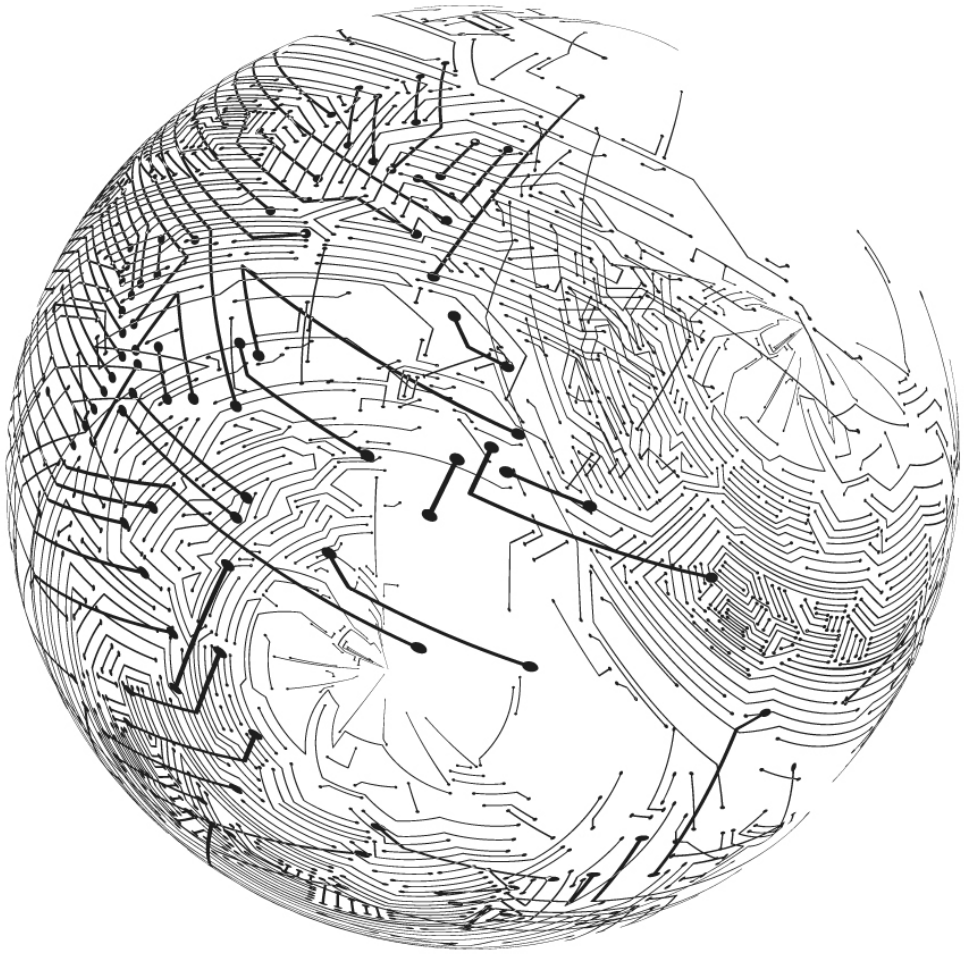

# Kazakhstan electronics industry

## Sector teaser

November 2020

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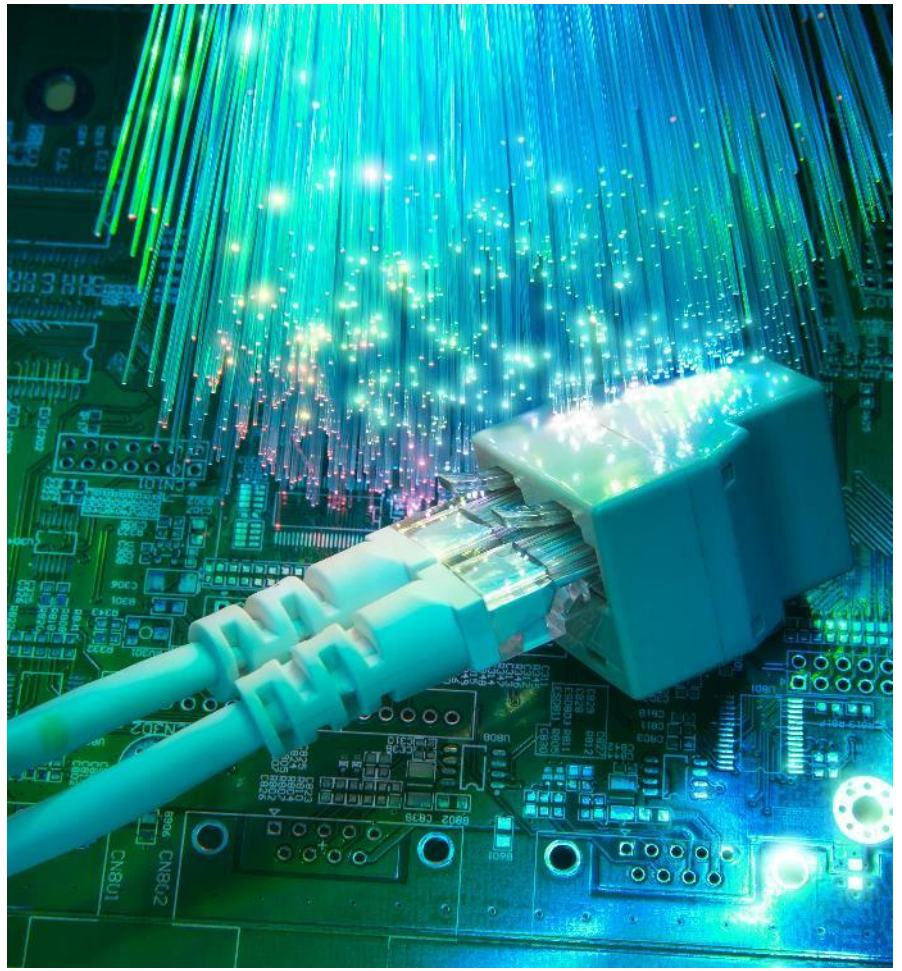

Kazakhstan electronics industry
Sector teaser

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Sector overview
Market assumptions
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Balance of production and consumption in Kazakhstan
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# Sector overview

- According to the Kazakhstan general classifier of economic activities ("GCEA 03-2019"), the electronics industry is classified as the "production of computers, electronic and optical equipment", and consists of 8 main equipment and technology segments.
- In 2019, the Kazakhstan electronics industry accounted for roughly 0.2% of total industry in the country, and 0.4% of the manufacturing industry, and roughly 3% of machine building.
- 49% of the entire electronics industry is located in Almaty Oblast, which is home to the greatest number of related businesses.
- 64 companies produce electronic technology and equipment in Kazakhstan, with approximately 20 of them (roughly 31%) producing communication equipment, and 9 - computer technology.
- The electronics industry has great potential for further development. State support and growing demand for electronic goods are the key prerequisites for Kazakhstan businesses to increase production capacity, which will help reduce import dependence, and increase exports. The latter is aided by Kazakhstan's proximity to Russian and Central Asian markets. Software is responsible for the greatest share of production costs in the electronics industry, and as such the country needs to develop a venture financing system for local start-up projects in the electronics industry.

## Electronics industry growth

- Between 2010 and 2019, the electronics industry almost tripled in size from KZT 16.5 billion in 2010 to KZT 44.5 billion in 2019 (average CAGR of 12%). According to the MDDIAI, it is expected that by 2023, local production will reach KZT 165 billion in value.
- Electronic industry development is closely linked to economic development, the greater economic development in the country, the greater sector development is. State information and communication technology programmes and state support measures have led to increases in demand for electronic goods.
- The Kazakhstan electronics industry should follow global best practices, such as attracting major transnational corporations with localised service centres, providing them with customer-focused partnership terms for transferring technology, to ensure development. Comprehensive staff development through training also gives a positive boost to the sector, along with systemic higher and secondary-specialised education, including grant and concessions systems for graduates with the required specialists, and hiring teaching staff.

## Import substitution/export potential

- Kazakhstan continues to be import dependent for practically all electronic goods, such as mobile telephones, computers and peripheral technology, televisions, communication equipment, fibre optic equipment, and measuring apparatus. In 2019, electronic industry imports amounted to KZT 1,020 billion, with local production accounting for only 4% of total electronic product use in the country. The main suppliers of electronic technology and equipment into the country are China and Russia.

## State support

- Computer, electronic and optical equipment production are recognised as priority sectors, which receive state support in the form of the "SIIDP 2020-2025", "Entrepreneurial Code", "Saving Simple Things" and "2025 Road Map" Programmes, and also within the framework of SEZ.
- In addition to the above programmes, the State has also launched the "Digital Kazakhstan" and "Window of Opportunity" programmes. It is also working on developing specialised staff through the Astana IT University; opening the Qwasar and Alem programming schools in Nur-Sultan; allocating KZT 18.9 thousand in grants to train IT experts for the 2019-2020 academic year.



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# Market assumptions

1

### Development of the electronics industry in Kazakhstan

The Kazakhstan Government's goal is to increase average annual electronics production to KZT 382.6 billion (almost 9-fold production growth) by 2024; increase exports to KZT 45 billion, and local content in state and quasi-state procurements to 30% and 20%, respectively. Over 60 thousand new jobs are expected to be created with average annual increases of 28 thousand people.

2

### State support for the sector

Within the framework of the goal to eliminate digital inequality in Kazakhstan and the "Digital Kazakhstan" Programme, the government plans to take additional measures to stimulate the sector by increasing off-take contracts with domestic manufacturers; introducing preferential lending to purchase locally assembled computers through trading networks; allocating research and development finances in the electronics industry and others.

3

### Global demand for electronics

According to Gartner analysis, global demand for electronics is expected to grow on average by 9% by 2024. In 2019, wireless network equipment production revenue amounted to US$ 5.8 billion. According to Gartner forecasts, this figure will continue to grow and will reach US$ 7.8 billion by 2024.



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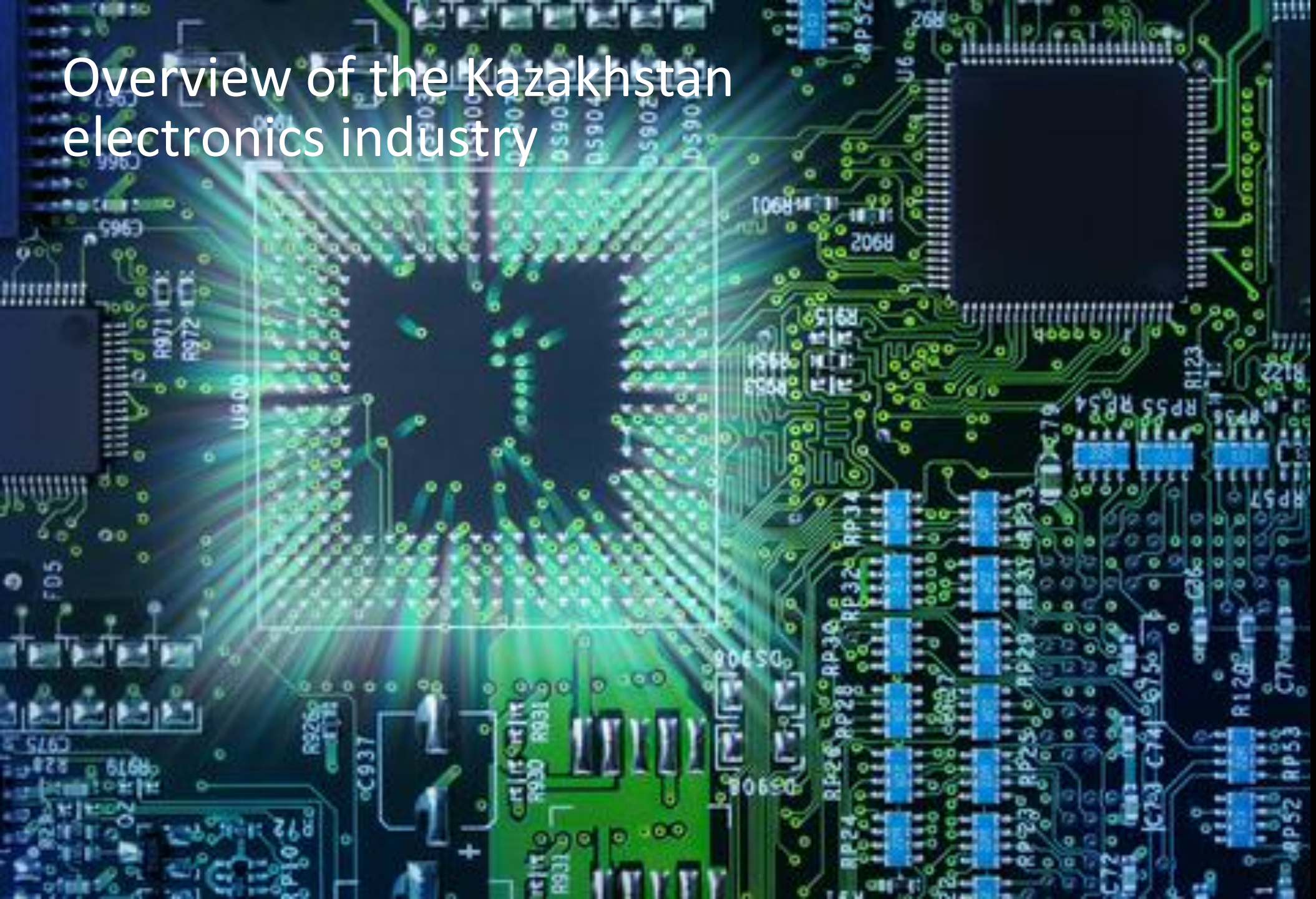
# Overview of the Kazakhstan electronics industry



# Classification of electronics and optical equipment

## Varieties of electronics and optical equipment according to the GCEA RK 03-2019

- According to the GCEA RK 03-2019, electronics are divided into 8 main segments.
- Each segment represents a different type of technology.

| Group I | Group II | Group III | Group IV | Group V | Group VI | Group VII | Group VIII |
|---|---|---|---|---|---|---|---|
| Electronic components and boards | Computers and periphery equipment | Communication equipment | Household electronics | Measuring and testing instruments and apparatus | Electro-medical equipment | Optical equipment | Magnetic and optical data media |
| • Production of electronic elements<br>• Production of electronic boards | • Computer and periphery equipment production | • Communication equipment production<br>• Production of television and radio equipment<br>• Production of cable telephone and telegraph communication equipment | • Production of household electronic appliances | • Measuring, testing and navigation instrument and device production<br>• Production of equipment to measure mechanical amounts<br>• Electricity meter production<br>• Radio-measuring apparatus production<br>• Medical and surgical instrument production | • Production of radiation, electro-medical and electro-therapeutic equipment | • Optical equipment production<br>• Photo and cinematic equipment production | • Production of magnetic and optical data media |



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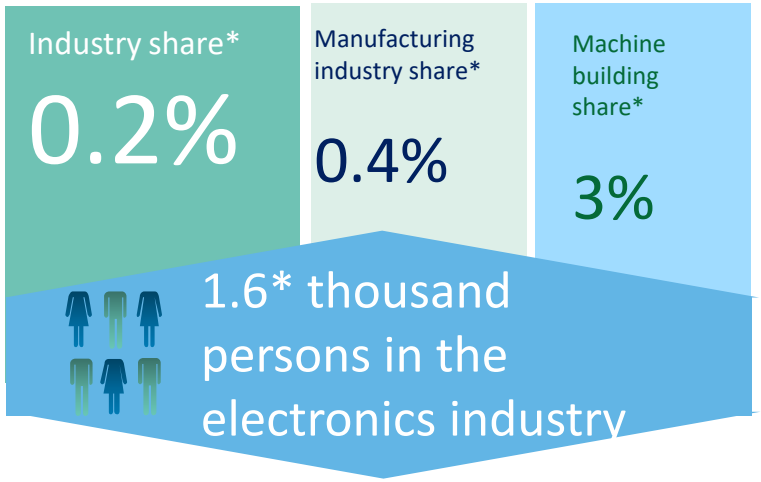
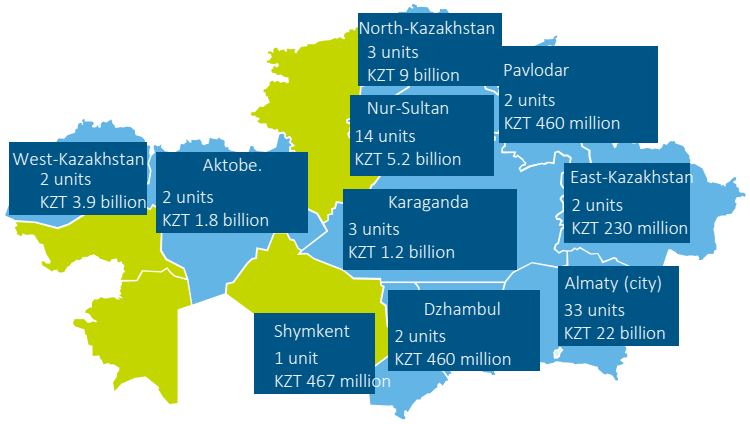
# Kazakhstan electronics industry market

- The Kazakhstan electronics industry accounted for only 0.2% of industrial production in the country, while the share of the manufacturing industry was 0.4%, and machine building - 3% in 2019.
- In the last 9 years, the electronics industry market almost tripled from KZT 16.5 billion in 2010 to KZT 44.5 in 2019 (average CAGR of 12%).
- However, despite sector growth, the country is experiencing severe shortages in the electronics industry. For example, in 2019, Kazakhstan imported products worth KZT 1 020 billion (both regulated and unregulated markets). Thus, local production accounts for only 4% of total consumption. According to the MDDIAI, local production will reach KZT 165 billion by 2023.
- The Kazakhstan Government's goal is to increase average annual electronics production to KZT 382.6 billion (almost 9-fold production growth) by 2024; increase exports to KZT 45 billion, and local content in state and quasi-state procurements to 30% and 20%, respectively.
- State support incorporates the "Digital Kazakhstan" Programme, and plans for additional measures to stimulate the sector by increasing off-take contracts with domestic manufacturers; introducing preferential lending to purchase locally assembled computers through trading networks; allocating research and development finances in the electronics industry and others.
- The electronics industry is currently represented by 64 domestic producers. Local production is divided into electronic components and boards; computers and periphery equipment, optical equipment, industrial electronics, communication equipment, household electronics and electro-medical equipment used in the learning process. In 2019, the sector employed 1 621 persons, with a labor force of 9,221 thousand people in the country.
- Over 50% of businesses are located in Almaty Oblast, with the region responsible for approximately 49% (KZT 22 billion) of total production.

** data for 2019*




Number of business producing electronic goods, by Kazakhstan region




Source: Kazakhstan Statistics Committee

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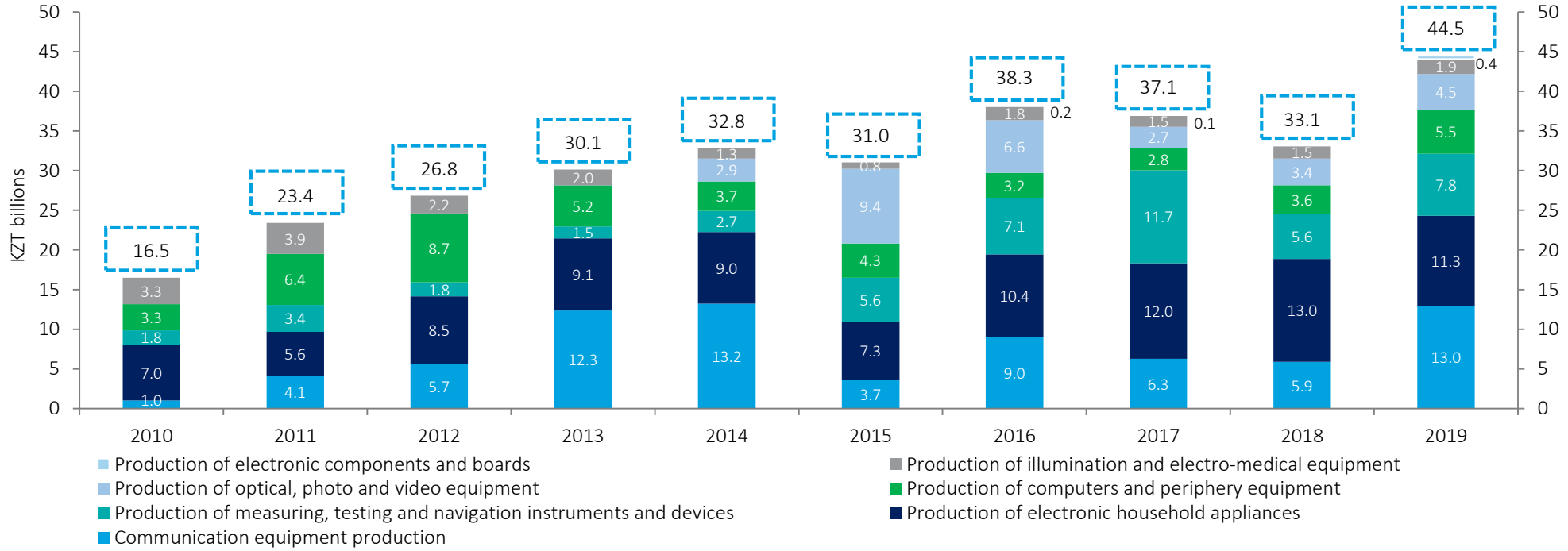
# Computer, electronics and optical equipment production

## Structure of computer, electronics and optical equipment production in Kazakhstan in 2010-2019




- In 2019, computer, electronics and optical equipment production in monetary terms reached KZT 44.5 billion. Communication equipment accounted for roughly 29% of production or KZT 13 billion, while household electronics accounted for approximately 25% or KZT 11 billion.
- Domestic television production covers about 10% of demand in Kazakhstan. The country is also extremely import dependent for all remaining electronics, importing 70-100% of all electronics on sale.
- Computer, electronics and optical equipment production in January-July 2020 amounted to KZT 10.9 billion. This figure is 24.3% lower than for the same period in the previous year.
- The share of computer, electronics and optical equipment production in machine building declined during the year from 3% to 1.2%.

Source: Kazakhstan Statistics Committee

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# Kazakhstan electronic equipment producers

## Major Kazakhstan companies predominantly producing electronic equipment according to overseas franchises

| Company | Product |
|---|---|
| **Aktobe Oblast** | |
| Svetokom LLP | Electronic components and boards |
| JSC Aktobrentgen Kazakhstan | X-ray equipment |
| **North-Kazakhstan Oblast** | |
| JSC S M Kirov Plant | Multilayer circuit boards |
| **Pavlodar Oblast** | |
| Pravikom LLP | Industrial electronics |
| **Karaganda** | |
| EKAS-SERVICE LLP | Industrial electronics |
| **East-Kazakhstan Oblast** | |
| TechnoAnalit LLP | Medical equipment |
| Ust-Kamenogorsk Condensate Plant LLP | Optical equipment |
| **Dzhambul Oblast** | |
| Novacom Technology LLP | Payment terminals, information kiosks, e-queues, SACM |
| Aslan-Energy LLP | Industrial electronics |
| **Nur-Sultan and oblast** | |
| Digital System Servis LLP | Electronic components and boards |
| NTS Design LLP | Communication equipment |
| BARK Technologies LLP | Medical equipment |
| Kazinfoservice LLP | Communication equipment |
| KAZAKHSTAN ASELSAN ENGINEERING LLP | Optical equipment |
| Kazakhstan Pilotfree System Centre LLP | Pilotless vehicles |
| Galam LLP | Electronic components and boards |
| SAPA Telemedical Centre | Medical equipment |
| KAZDREAM TECHNOLOGIES LLP | Communication equipment |
| JSC Kazimplex National Centre | Communication equipment |
| Samruk-Korgalzhym LLP | Computer equipment |

| Company | Product |
|---|---|
| **Almaty city and oblast** | |
| KB Promsvyaz LLP | Radio and television transmitter |
| Topol LLP | Communication equipment |
| KAZTECHINNOVATIONS LLP | Radio electronics |
| SOLO LLP | Radio electronics |
| Delta-IT LLP | Telecommunication facilities |
| EltexAlatau LLP | Electronic components and boards |
| Granit Technology LLP | Electronic components and boards |
| AspapGEO LLP | X-ray apparatus |
| Gamma Technology Scientific Research Laboratory LLP | Communication equipment |
| Saiman Corporation LLP | Electronic metering devices |
| Svyaz Corporation LLP | Radio and telecommunications equipment |
| JSC KazEng Electronics | Computer equipment |
| Orion System LLP | Radio modems and others |
| Logicom LLP | Computer equipment |
| DS MULTIMEDIA CA LLP | Electronic components and boards |
| ZDRAVSTANDARTPLUS LLP | Industrial electronics |
| BalKhan Company LLP | Industrial electronics |
| AQUAMETER DEVELOPMENT GROUP LLP | Water meters |
| JSC Asia-Electric | Industrial electronics |
| DOC Co. LTD | Computer equipment |
| OJSC LG Electronics Almaty Kazakhstan | Household electronics |
| DS MULTIMEDIA CA LLP | Electronic components and boards |
| Kazakhstan Scientific Research Centre Astana Engineering | Electronic components and boards |

Source: company websites

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# Human capital

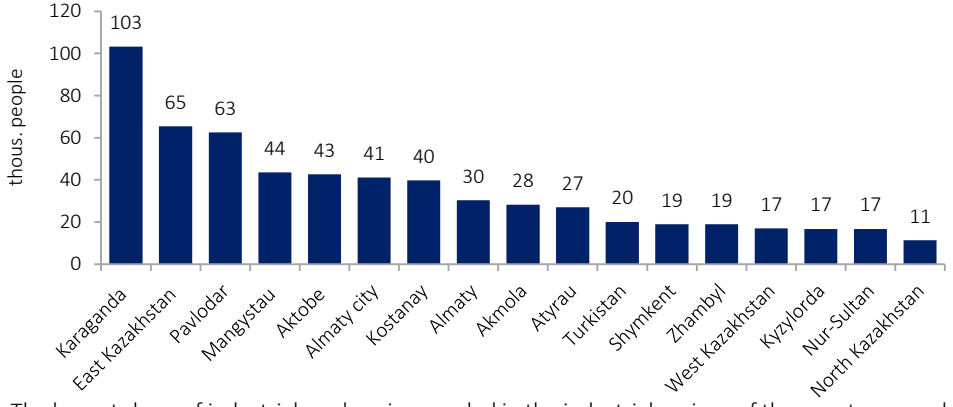
## Labor force in the Republic of Kazakhstan

**9.2** million people — In 2019

**9.7** million people — in 2024

The labor force of the Republic of Kazakhstan at the age of 15 + is 9.2 million people (47% of the total). According to EIU forecasts, this figure will reach 9.7 million people by 2024.

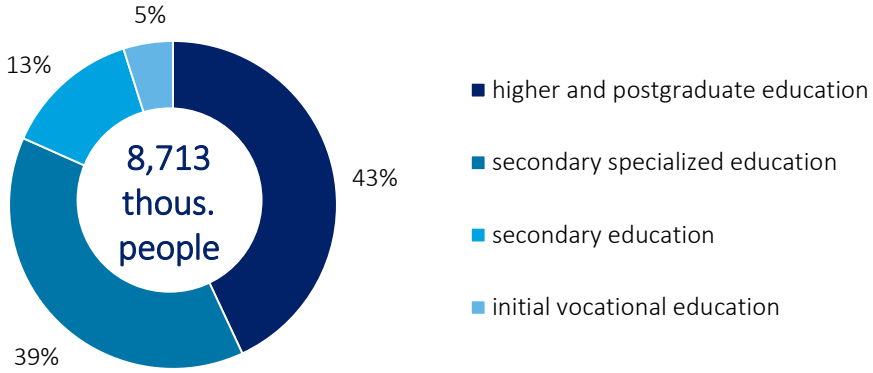
## The actual number of industrial workers in the context of the III quarter, 2020




The largest share of industrial workers is recorded in the industrial regions of the country, namely: Karaganda Oblast – 17%, East Kazakhstan Oblast – 11% and Pavlodar Oblast – 10% of the total number of industrial workers.

Source: Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan, EIU

## Distribution of the employed population by level of education as of the III quarter, 2020




## The employed population by professions as of the III quarter, 2020

| Name | Number, people | Share,% |
|---|---|---|
| Professionals | 2,015,122 | 23% |
| Unskilled workers | 1,518,492 | 17% |
| Service and sales workers | 1,168,139 | 13% |
| Production equipment operators, assemblers and drivers | 894,105 | 10% |
| Workers in industry, construction, transport and other related occupations | 793,253 | 9% |
| Technicians and other auxiliary professional personnel | 692,450 | 8% |
| Leaders and civil servants | 580,040 | 7% |
| Farmers and workers in agriculture, forestry, fish farming and fishing | 484,855 | 6% |
| Administration employees | 470,544 | 5% |
| Workers not included in other groups | 96,145 | 1% |
| **Total** | **8,713,145** | **100%** |



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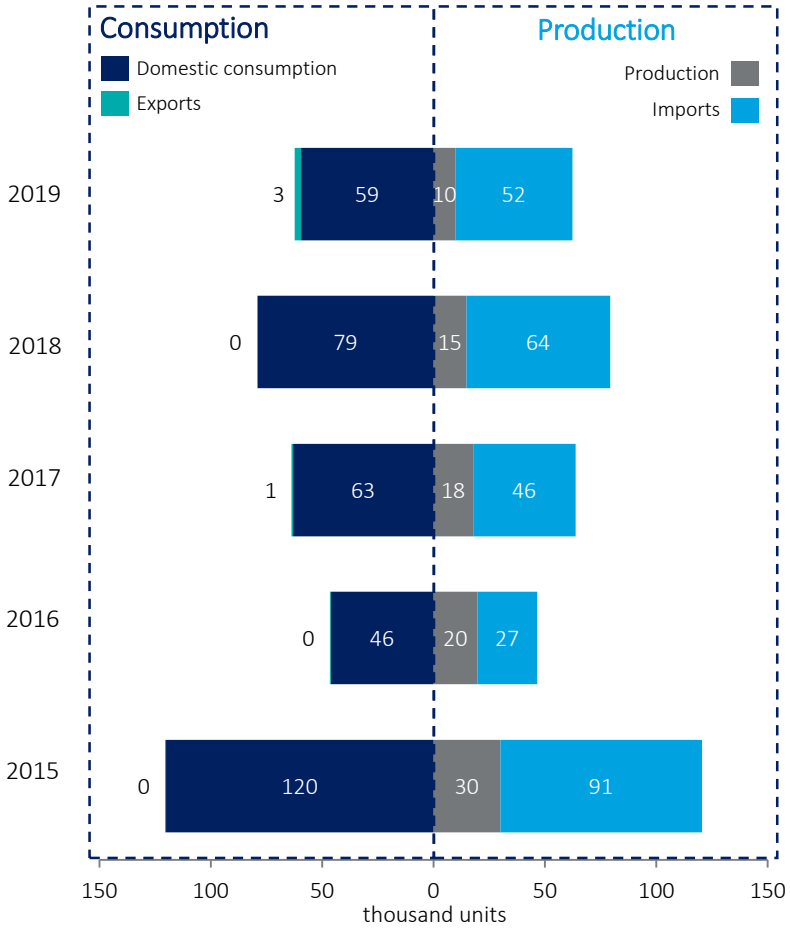
# Balance of production and consumption in Kazakhstan

# Computers

## Resources and use




Source: Kazakhstan Statistics Committee

## Key product data

| | | | |
|---|---|---|---|
| *Deficit Surplus* | Deficit | *Sufficiency* | Import dependent |
| *Deficit level* | 74% | *Import share* | 75% |

- In 2018, computer production in cost terms amounted to KZT 3.6 billion, which grew to KZT 5.5 billion in 2019. At the same time, in the last five years, imports accounted for practically 75% of total demand in Kazakhstan.
- At the same time, computer production fell significantly in the last five years (from 30 thousand units in 2015 to 9.8 thousand units by the end of 2019), with CAGR at -24%.
- China accounted for roughly 75% of imports in 2019, importing goods worth KZT 72.4 billion.
- Kazakhstan is import dependent, with imports accounting for over 75% of consumption in the last five years. In 2015-2019, product imports fell by 58% to 52 thousand units in 2019.

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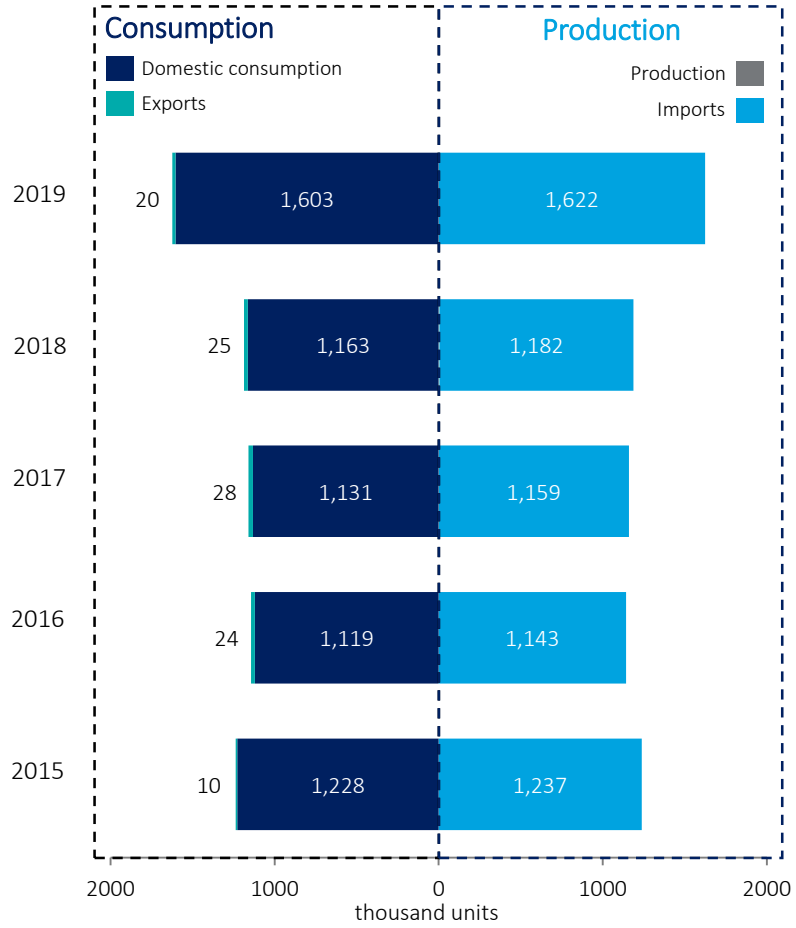
# Electromechanical household appliances

## Resources and use




Source: Kazakhstan Statistics Committee

## Key product data

| | | | |
|---|---|---|---|
| *Deficit Surplus* | Deficit | *Sufficiency* | Import dependent |
| *Deficit level* | 100% | *Import share* | 100% |

- Kazakhstan produces practically no electromechanical household appliances and for that reason is fully import dependent.
- Domestic demand for electromechanical household appliances is relatively stable at roughly 1,200 thousand units per year.
- In this respect, a small part of products are re-exported. In 2015-2019, average annual insulator exports in the last five years averaged 21 thousand units.
- Analysis discovered that Kazakhstan is import dependent in electromechanical household appliances and that current production covers 0.1% of domestic demand. The majority of products are imported from Russia, even though the majority of them are assembled in Africa.



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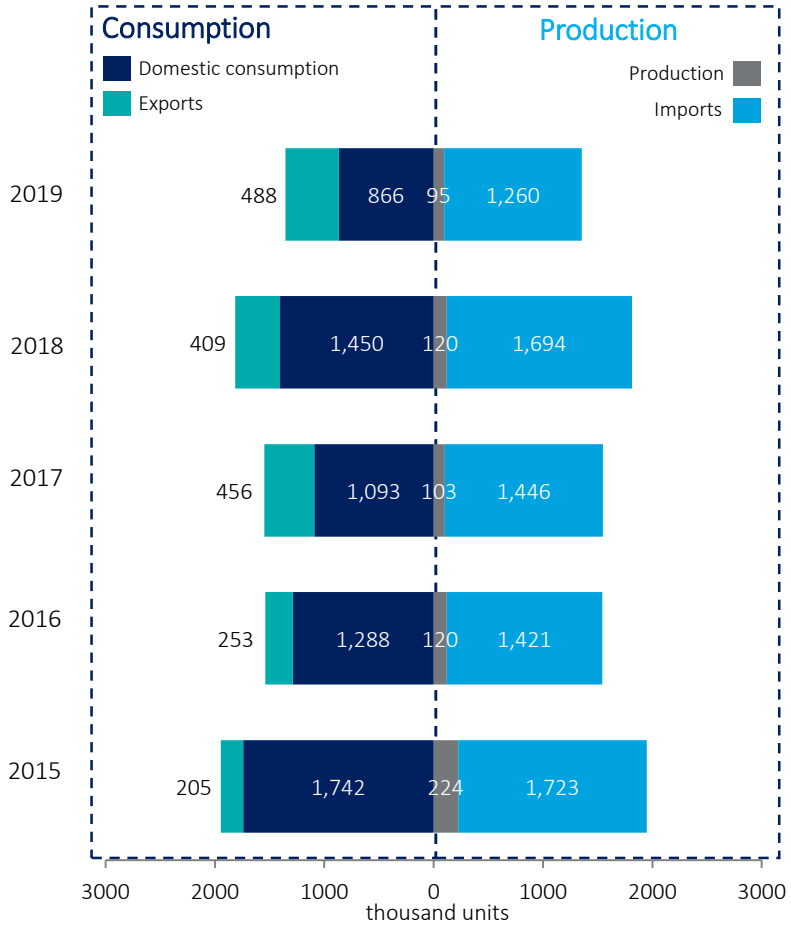
# Televisions

## Resources and use




Source: Kazakhstan Statistics Committee

## Key product data

| | | | |
|---|---|---|---|
| *Deficit Surplus* | Deficit | *Sufficiency* | Import dependent |
| *Deficit level* | 90% | *Import share* | 92% |

- In 2015-2019, television production in Kazakhstan declined, with CAGR at -19%. Demand for televisions in Kazakhstan has also halved. The reason for the decline in local production has been a decrease in Kazakhstan's assortment of the major manufacturer – LG Electronics Kazakhstan.
- Imports have behaved the same way as domestic consumption, covering, on average, 92% of domestic demand, according to an analysis of the last five years. Russia accounts for approximately 81% of all television imports.
- There has also been growth in television re-exports. By 2019, television re-exports had more than doubled to 488 thousand units against 205 thousand units in 2015. Roughly 95% of them in 2019 were supplied to CIS countries (43% to Uzbekistan and 42% to Kyrgyzstan).
- Analysis shows that Kazakhstan is import dependent for televisions, as over 92% of demand was covered by imports.



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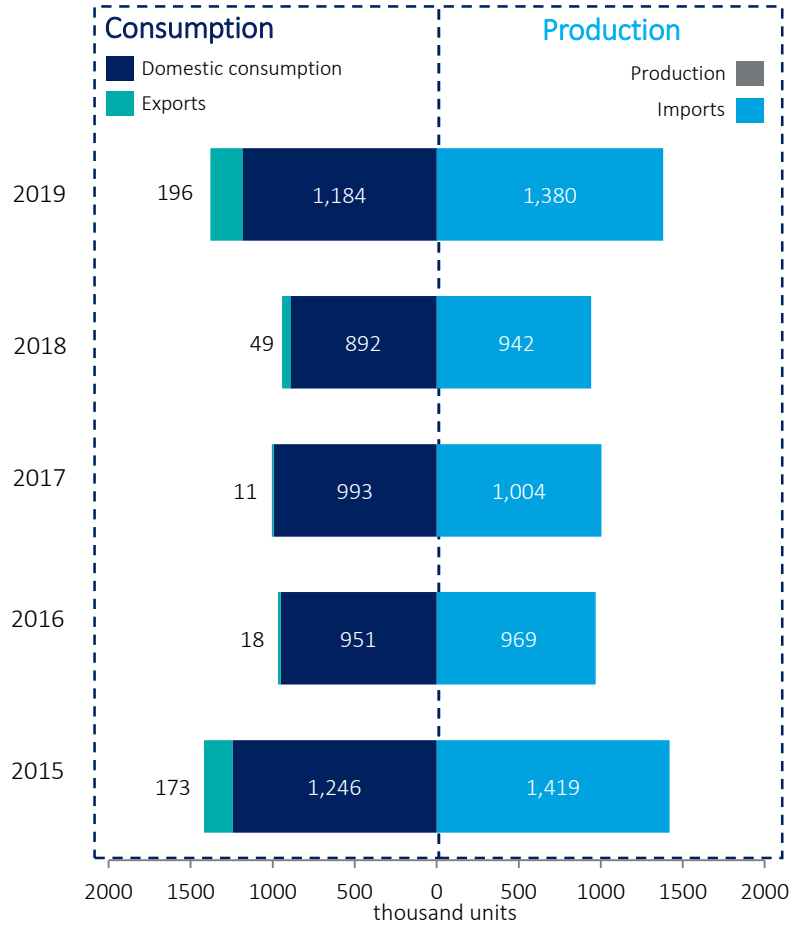
# Video recording equipment

## Resources and use




Source: Kazakhstan Statistics Committee

## Key product data

| | | | |
|---|---|---|---|
| *Deficit Surplus* | Deficit | *Sufficiency* | Import dependent |
| *Deficit level* | 100% | *Import share* | 100% |

- Video recording equipment is not produced in Kazakhstan.
- Demand for video recording equipment is fully met by imports. In 2015-2019, CAGR was at -1%.
- Video recording equipment use in Kazakhstan for the entire period has shown negative CAGR of 1%. In the last five months, domestic consumption has been unstable.
- Thus, Kazakhstan is import dependent with respect to video recording equipment as demand is met 100% by imports, predominantly from China (80%).



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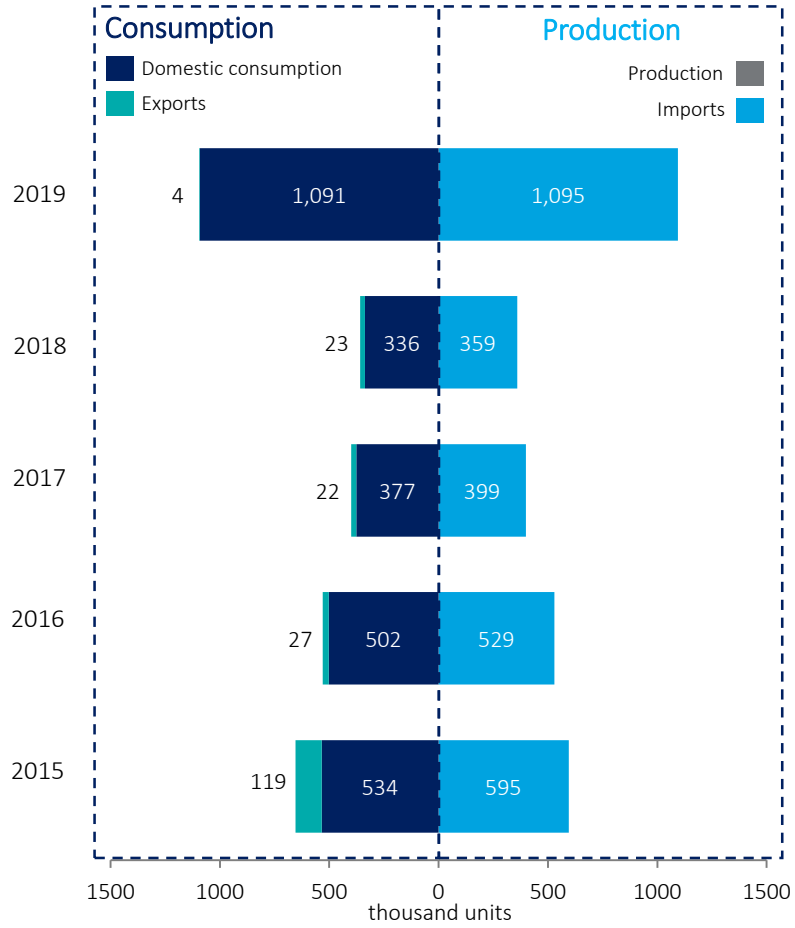
# Radios and portable radio receivers

## Resources and use




Source: Kazakhstan Statistics Committee

## Key product data

| | | | |
|---|---|---|---|
| *Deficit Surplus* | Deficit | *Sufficiency* | Import dependent |
| *Deficit level* | 100% | *Import share* | 100% |

- Kazakhstan has no local radio and portable radio receiver production and is totally reliant on imports. As such, in 2019, Kazakhstan imported 1,095 thousand units, while average annual growth in imports in the last five years was 16%.
- Consumption grows annually at 20%. In 2015-2019, domestic demand fluctuated between 336 thousand units and 1,091 thousand units.
- Re-exports were practically at zero at the end of 2019.
- Kazakhstan is import dependent in terms of radios and portable radio receivers.



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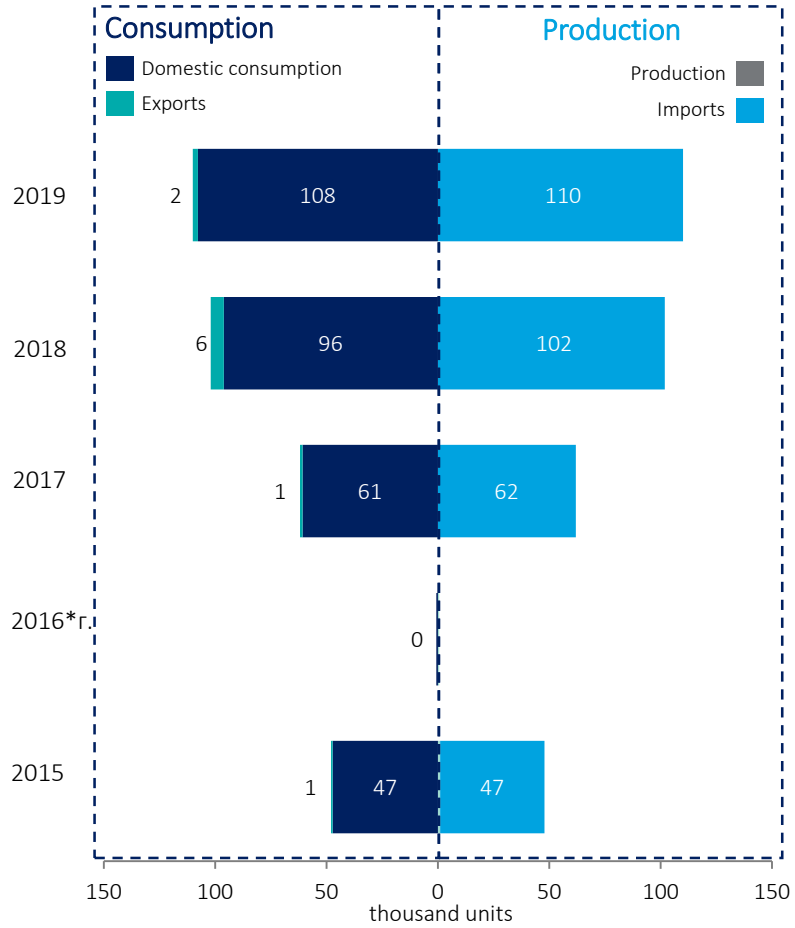
# Electronic devices to measure flow or liquid levels

## Resources and use




Source: Kazakhstan Statistics Committee

## Key product data

| | | | |
|---|---|---|---|
| *Deficit Surplus* | Deficit | *Sufficiency* | Import dependent |
| *Deficit level* | 100% | *Import share* | 100% |

- Kazakhstan does not produce electronic devices to measure flow or liquid levels
- Consumption continues to grow annually with CAGR at 23%. In 2015-2019, domestic demand varied between 47 thousand units and 108 thousand units.
- Demand is 100% met by imports, predominantly from Russia (39%) and China (27%).
- During the review period, re-exports were unstable, averaging 2 thousand units per year.
- Kazakhstan is import dependent in terms of electronic devices to measure flow or liquid levels.

** - data for the period is not provided in official statistics.*



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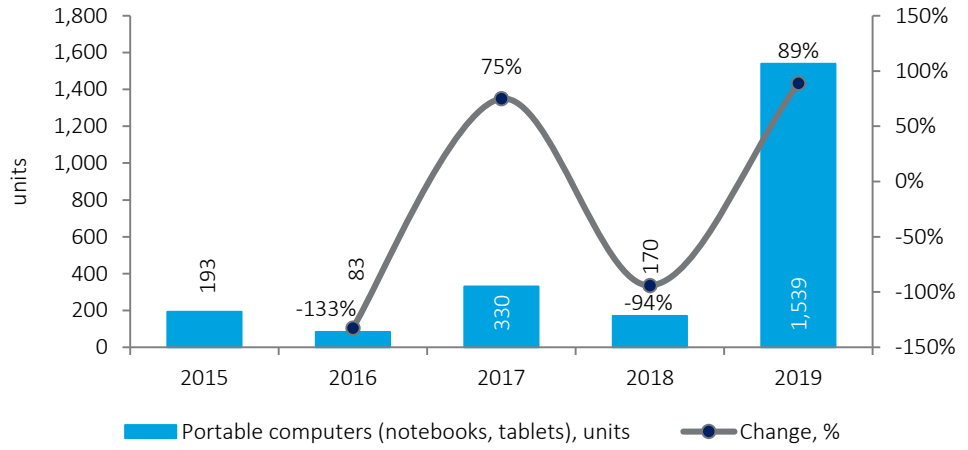
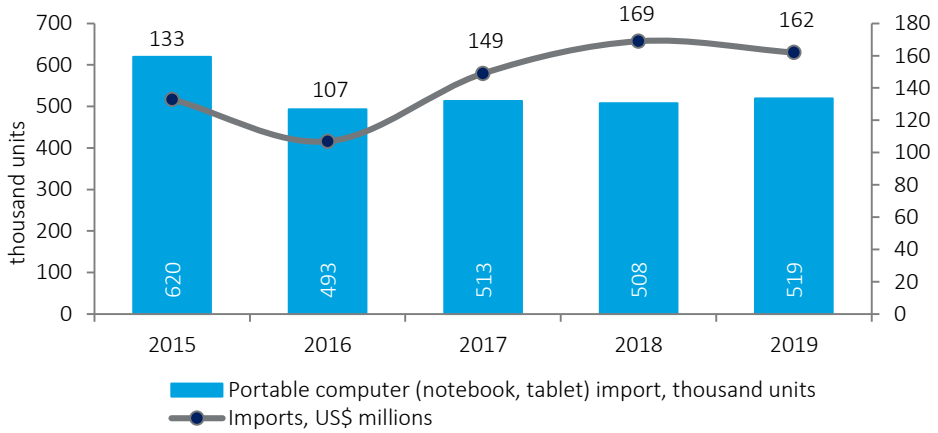
# Portable computers (notebooks and tablets) in Kazakhstan

## Portable computer production (notebooks and tablets) in Kazakhstan in 2015-2019

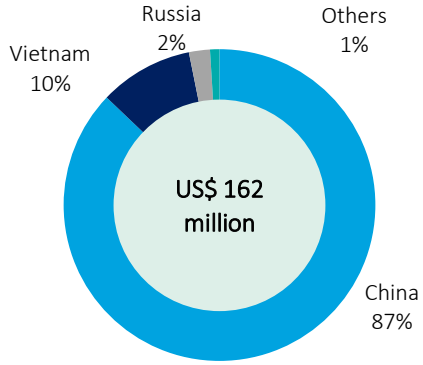



## Portable computer (notebook and tablet) imports into Kazakhstan in 2015-2019




- Portable computer (notebooks and tablets) production and assembly began in Kazakhstan in 2015. Despite the relatively recent start, by 2019 the local production reached 1,539 units. However, local production is limited to product assembly, and foreign components are used as RAM boards, hard drives, motherboards, video cards, enclosures, etc. The competitive advantage of Kazakhstani products is the relative affordability of prices in the low price segment while maintaining quality standards, as well as the availability of post-warranty service. The government is actively supporting the industry, which allows manufacturers to stay within the acceptable price range.
- In 2019, Kazakhstan imported 519 thousand units worth US$ 162 million. Average annual growth in imports in physical terms was 3%, and 5% in value terms.
- In 2019, Kazakhstan imported the majority of product from China (87%), Vietnam (10%) and Russia (2%).

## Structure of portable computer (notebook and tablet) imports, by country, in 2019




Source: Kazakhstan Statistics Committee

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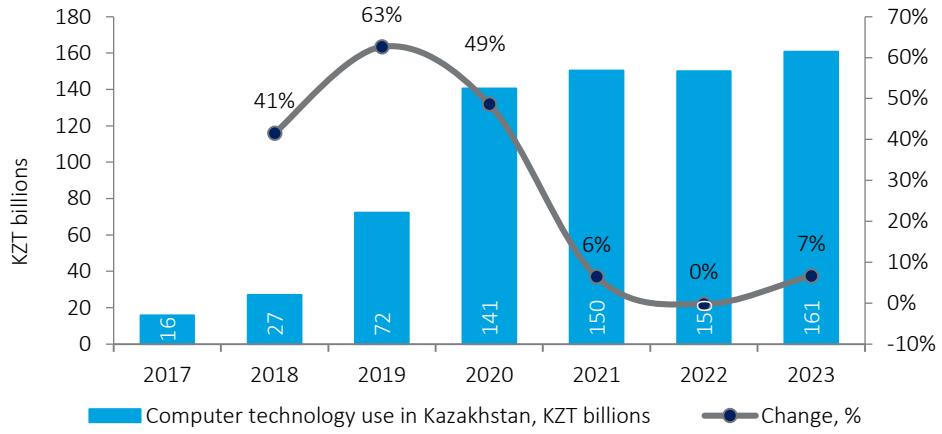
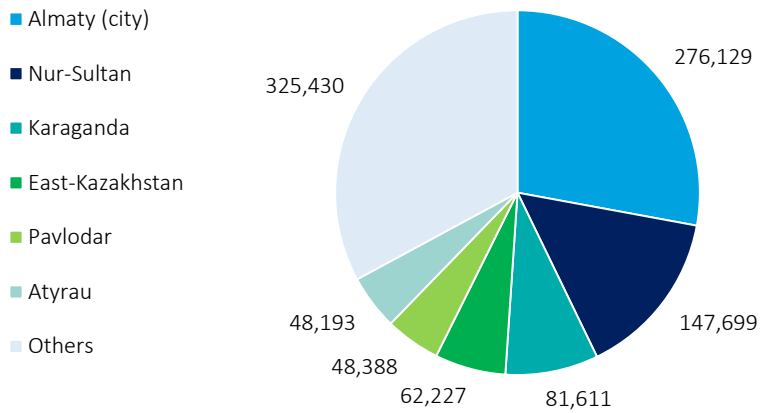
# Computer and notebook use in Kazakhstan

## Changes in computer use in 2017-2023

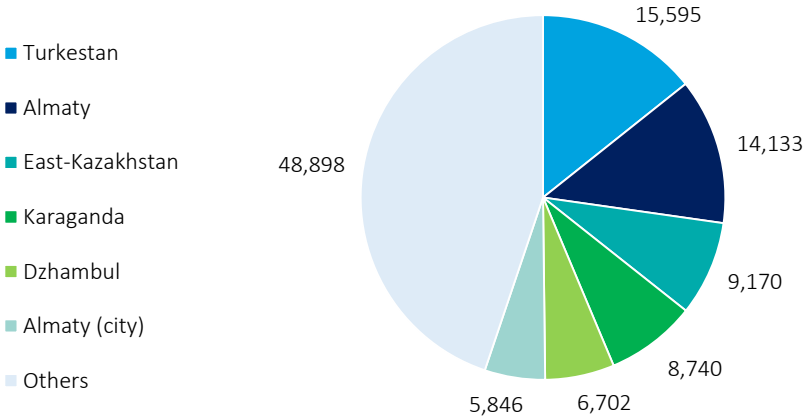



- According to the MDDIAI, in 2019, the total value of agreements concluded with local computer manufacturers was KZT 11.8 billion.
- In 2019, computer use in Kazakhstan in monetary terms amounted to KZT 72 billion and is forecast in 2023 to hit KZT 161 billion, with CAGR at 5% in 2020-2023.
- The number of employees using computers with Internet access has been growing annually, from 610 thousand in 2015 to 1,034 thousand in 2019.
- The leaders in the number of computers used in the teaching process in 2019 were Turkestan, Almaty and East-Kazakhstan Oblasts.

## Number of Kazakhstan employees using computers with Internet access




## Number of computers used in the teaching process in Kazakhstan




Source: Kazakhstan Statistics Committee

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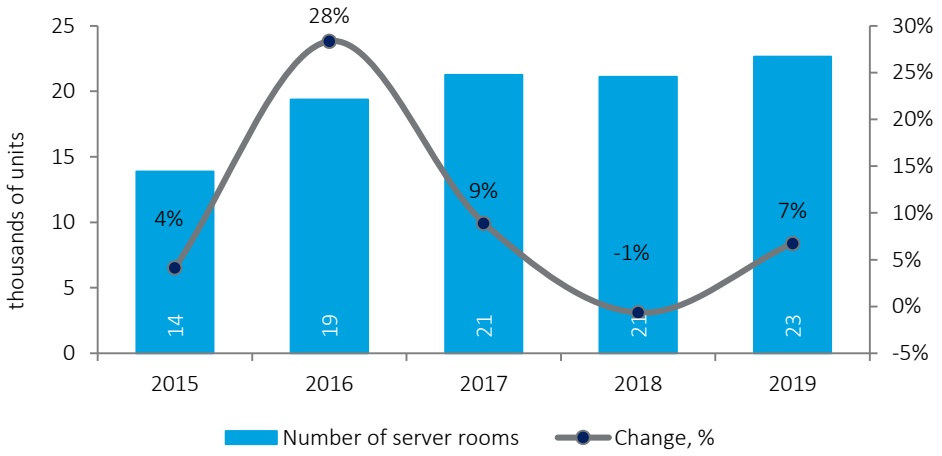
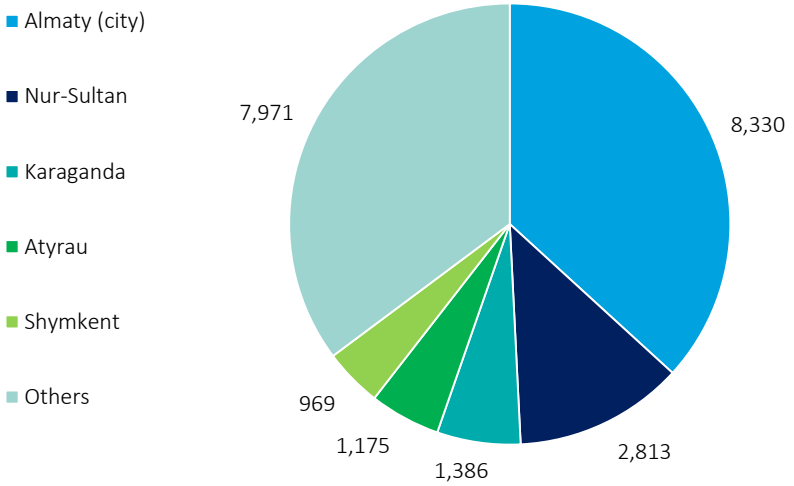
# Server equipment use in Kazakhstan

## Number of server rooms in Kazakhstan in 2015-2019




- In 2015-2019, Kazakhstan saw an increase in the number of server rooms, with CAGR at 13%. Kazakhstan has no real server equipment production, with all product available exported predominantly from China and Russia.
- By region, the greatest quantity of server equipment was focused in Almaty – 8,330 units (37%), Nur-Sultan – 2,813 units (12%) and Karaganda Oblast – 1,386 units (6%).

## Structure of the use of server rooms by Kazakhstan region in 2019




- Server equipment is primarily used to store corporate documentation. If large companies can afford to purchase server equipment and expensive licenses, then businesses with a niche market cannot. Thus, the development of this area is of great significance for domestic producers.
- Currently, approximately 70% of businesses across the world are transitioning to cloud data storage. Microsoft offers One Drive storage space from 1 terabyte for each employee, enabling them to use notebooks with the minimum of technical requirements, while the entire system will be integrated into a computer.

Source: Kazakhstan Statistics Committee

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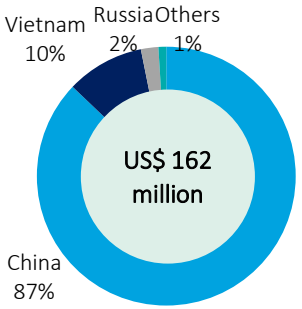
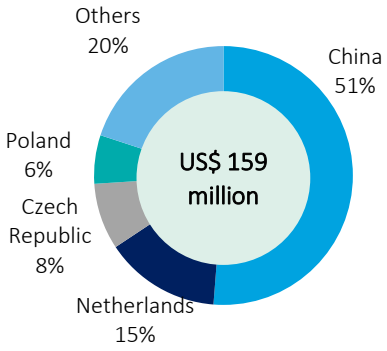
# Electronic industry equipment imports into Kazakhstan

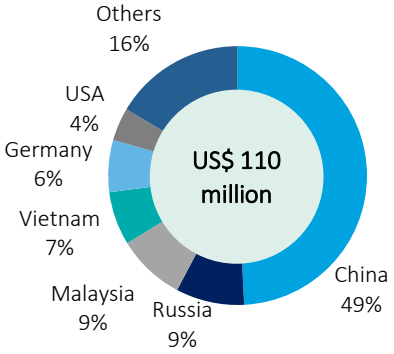
Structure of notebook imports into Kazakhstan in 2019, %



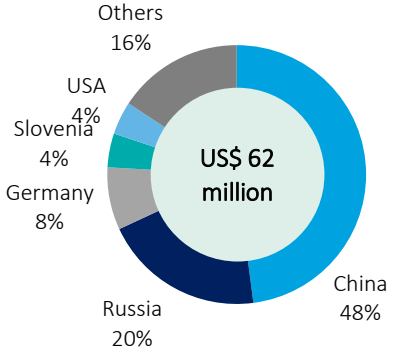

Structure of computer and server imports into Kazakhstan in 2019, %



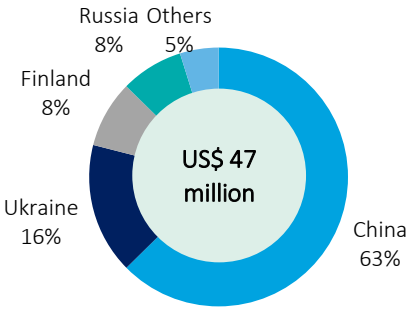

Structure of switch and router imports into Kazakhstan in 2019, %




Structure of fibre optic equipment imports into Kazakhstan in 2019, %




Structure of voice, image or other data recorders into Kazakhstan in 2019, %




- In 2019, notebook imports into Kazakhstan in monetary terms amounted to US$ 162 million. China accounts for the largest share among exporting countries (87%). CAGR for 2015-2019 was 5%. In physical terms, imports amounted to 519 thousand units.
- The structure for computer and server imports into Kazakhstan in 2019 was: China (51%), the Netherlands (15%) and the Czech Republic (8%). Total imports into Kazakhstan amounted to US$ 159 million or 252 thousand units in physical terms.
- The advantages of machinery produced in China are its price variety and availability, as well as a wide range of products. China has the largest number of enterprises engaged in the production of components and equipment assembly.
- In 2019, switches and routers worth US$ 110 million were imported into Kazakhstan. In physical terms, this figure is 964 thousand units.
- In monetary terms, fibre optic equipment imports were worth US$ 62 million in 2019, and in physical terms - 274 thousand units. CAGR in 2015-2019 was at 20%.
- Voice, image or other data recorder imports amounted to US$ 47 million in monetary terms in 2019. In physical terms, that figure is 35 thousand units.

Source: trademap.org

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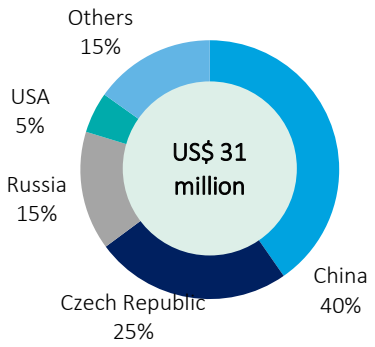
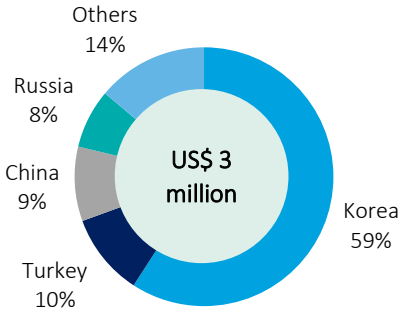
# Electronic industry equipment imports into Kazakhstan

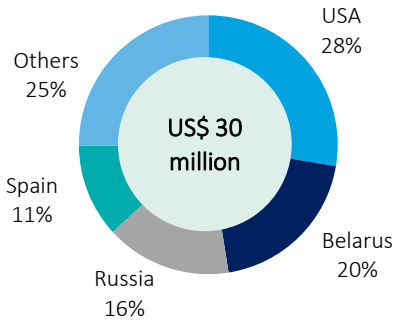
Structure of computer (desktop) imports into Kazakhstan in 2019, %



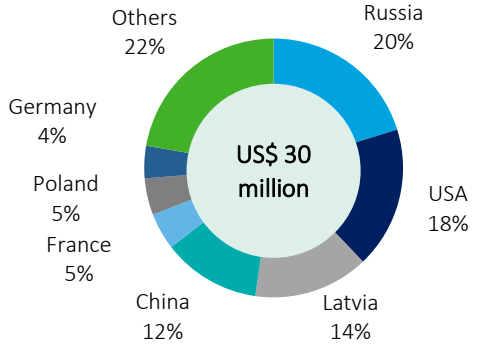

Structure of accelerator imports into Kazakhstan in 2019, %




Structure of measuring equipment imports into Kazakhstan in 2019, %




Structure of automatic regulation equipment into Kazakhstan in 2019, %




- In 2019, Kazakhstan imported computers (desktops) worth US$ 31 million. That figure in physical terms was 17 thousand units. The import structure for desktop computers is as follows: China (40%), the Czech Republic (25%) and Russia (15%).
- In 2019, Kazakhstan imported accelerators worth US$ 3 million, which in physical terms is 2,806 thousand units. CAGR in 2015-2019 was at 43%.

- In 2019, measuring equipment imports into Kazakhstan in monetary terms amounted to US$ 30 million. China was the largest exporter, accounting for 28%. CAGR for 2015-2019 was at 15%. In physical terms, that figure was 206 thousand units.
- The structure of computer and server imports into Kazakhstan in 2019 is as follows: Russia (20%), the USA (18%) and China (12%). Total product imports into Kazakhstan amounted to US$ 30 million or 272 thousand units in physical terms.

Source: trademap.org

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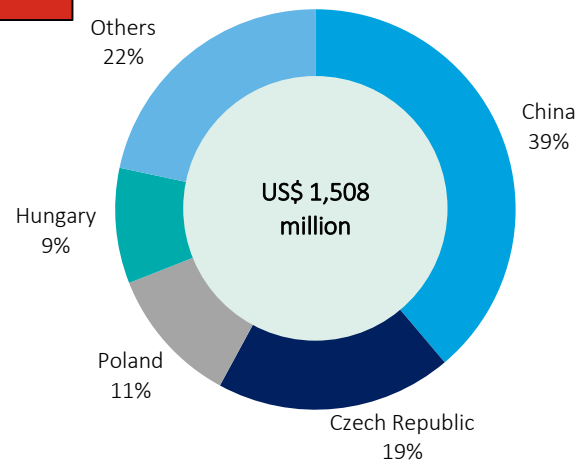
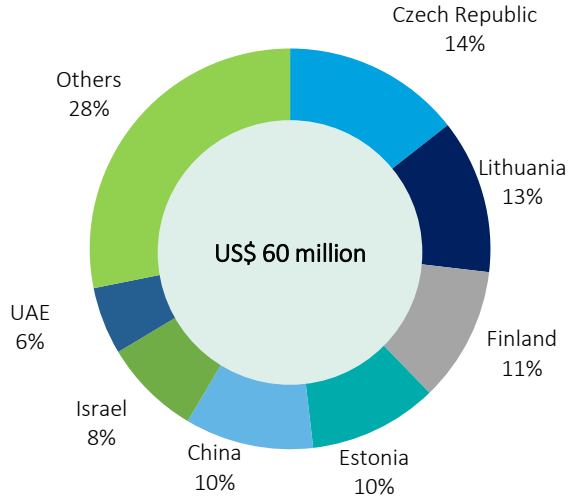
# Export potential: computers and servers

## Total computer and periphery device imports in Russia in 2019




## Total computer and periphery device imports in Uzbekistan in 2019




- Computer and server imports into Russia amounted to US$ 1,508 million in 2019. China is the largest exporting country (39%). Importers also include the Czech Republic (19%) and Poland (11%). China is one of the leading global producers of computer technology.
- Russia's geographical proximity and the advantages of EAEU membership mean Kazakhstan has every opportunity to occupy a share of computer imports into Russia.

- In 2019, computer and server imports into Uzbekistan amounted to US$ 60 million. The main supplier to Uzbekistan is the Czech Republic (14%), followed by Lithuania (13%), Finland (11%) and Estonia (10%).
- Analysis of Uzbekistan's foreign trade balance in 2019 showed that the country's three main foreign trading partners were China, Russia and Kazakhstan. Thus, the close economic and territorial ties between the countries help create a positive relationship.

Source: trademap.org

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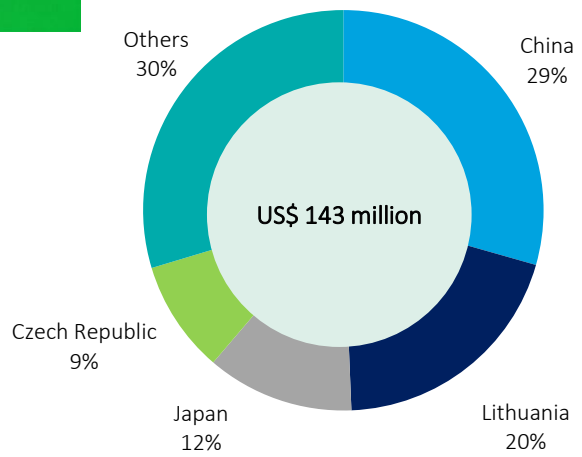
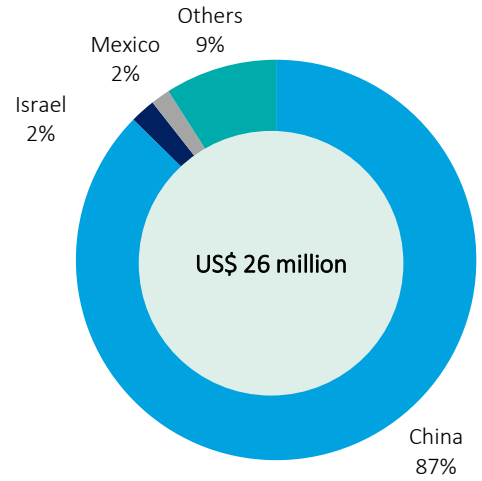
# Export potential: switches and routers

## Switch and router imports into Uzbekistan in 2019




- In 2019, Uzbekistan imported switches and routers worth US$ 143 million. China is the largest exporting country (29%) and this is because of its active policy of stimulating capital and technology inflow.
- Other countries exporting to Uzbekistan include Lithuania (20%) and Japan (12%).

## Switch and router imports into Kyrgyzstan in 2019




- In 2019, switch and router imports into Kyrgyzstan amounted to US$ 26 million. China is the largest supplier, accounting for 87% of all imports, followed by Israel (2%) and Mexico (2%).
- Over the last five years, Kazakhstan has traditionally been Kyrgyzstan's third largest trading partner. Given their economic relations and access to EAEU privileges, Kazakhstan has every opportunity to find a niche in the structure of switch and router imports into Kyrgyzstan.

Source: trademap.org

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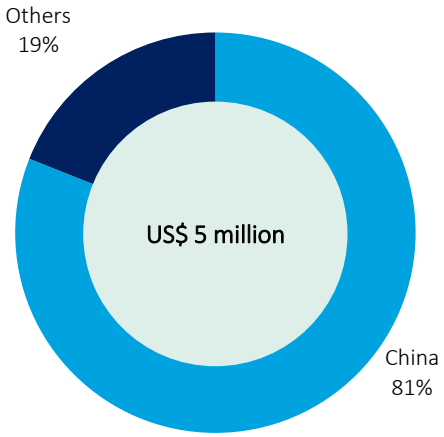
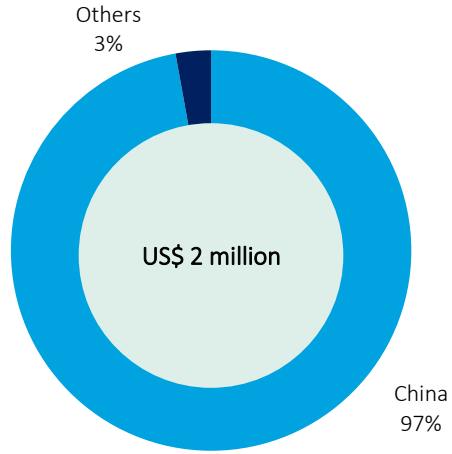
# Export potential: Voice, image or other data recorders

## Voice, image or other date recorder imports into Tajikistan in 2019




- Voice, image or other date recorder imports into Tajikistan amounted to US$ 5 million in 2019, of which 89% came from China.
- Cheap labour and a well-developed level of production make China the largest producer of electronics in the world.

## Voice, image or other date recorder imports into Kyrgyzstan in 2019




- In 2019, Kyrgyzstan imported voice, image or other data recorders worth US$ 2 million, of which 97% came from China.
- The close economic and territorial ties between the countries help create a positive relationship.

Source: trademap.org

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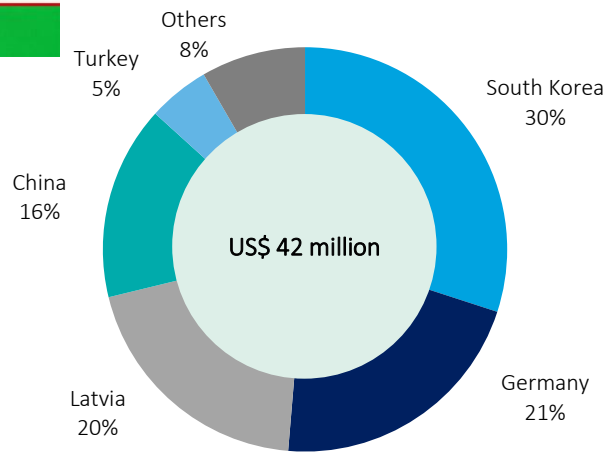
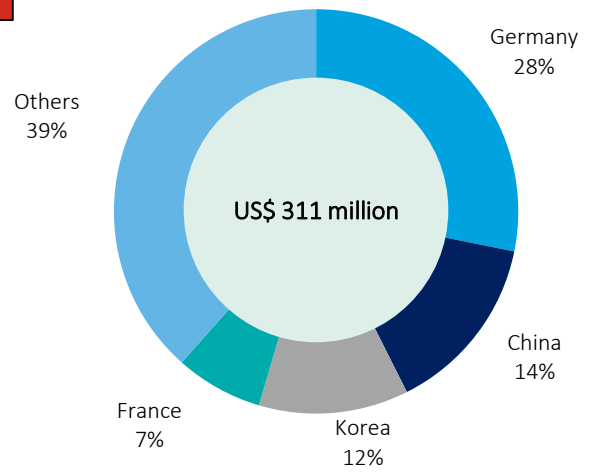
# Export potential: Electronic automatic regulation equipment

## Electronic automatic regulation equipment imports into Uzbekistan in 2019




- Uzbekistan imported electronic automatic regulation equipment (smart meters) worth US$ 42 million in 2019. South Korea is the largest exporter, responsible for 30% of Uzbekistan imports, and is one of the global leaders in smart meters thanks to its research in the area.
- Other importers into Uzbekistan were Germany (21%), Latvia (20%) and China (16%).

## Electronic automatic regulation equipment imports into Russia in 2019




- Electronic automatic regulation equipment imports into Russia amounted to US$ 311 million in 2019, of which Germany was responsible for 28%, followed by China (14%) and Korea (12%).
- Russia's geographical proximity and the advantages of EAEU membership mean Kazakhstan has every opportunity to occupy a share of smart meter imports into Russia.

Source: trademap.org

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# Competitive analysis

## Global electronics and networking equipment manufacturers

| Name | Products | Location | Additional Information |
|---|---|---|---|
| **USA** | | | |
| Dell Technologies Inc. | Desktops, laptops, tablets, servers, storage devices, networking equipment, monitors, printers, camcorders, etc. | Texas, USA | dell.com |
| Hewlett Packard Enterprise | Computers, servers, networking equipment, printers, scanners, etc. | California, USA | hpe.com |
| Cisco Systems, Inc. | Network equipment (routers and switches) | California, USA | cisco.com |
| **China** | | | |
| Lenovo Group Limited | Personal desktops, cell phones, netbooks, servers, monitors, video projectors, video cards, keyboards, mice and kits, memory modules, optical drives, power supplies, etc. | Hong Kong, China | lenovo.com |
| Acer Inc. | Desktops, laptops, RAM, etc. | Taiwan | acer.com |
| Asustek Computer Inc. | Personal computers, laptops, nettops, Internet tablets, motherboards, graphics cards, sound cards, optical drives, coolers, etc. | Taiwan | asus.com |
| H3C Technologies Co., Ltd. | Network equipment (routers and switches) | China | h3c.com |
| D-Link Corporation | Networking and telecommunications equipment. | Taiwan | dlink.com |
| Realtek Semiconductor Corp. | Semiconductors and related devices | Taiwan | realtek.com |
| Huawei Technologies Co. Ltd. | Networking and telecommunications equipment, as well as mobile devices and more. | China | huawei.com |
| **Russia** | | | |
| Nix LLC | Mini PC NIX, gaming mini PC NIX, gaming PC NIX, fanless mini PC NIX | Moscow, Russia | nix.ru |
| MCST JSC | Universal microprocessors, microcontrollers, control computing complexes, optimization and binary compilers and operating systems. | Moscow, Russia | mcst.ru |
| CJSC ETegro Technologies | Servers, cluster systems, managed switches, storage systems, rack solutions for data centers. | Moscow, Russia | etegro.com |
| DEPO Computers LLC | Storage systems, servers, workstations, graphics and video controllers, personal computers, terminals, server cabinets and other infrastructure elements. | Moscow, Russia | depo.ru |

*Source: Company websites*

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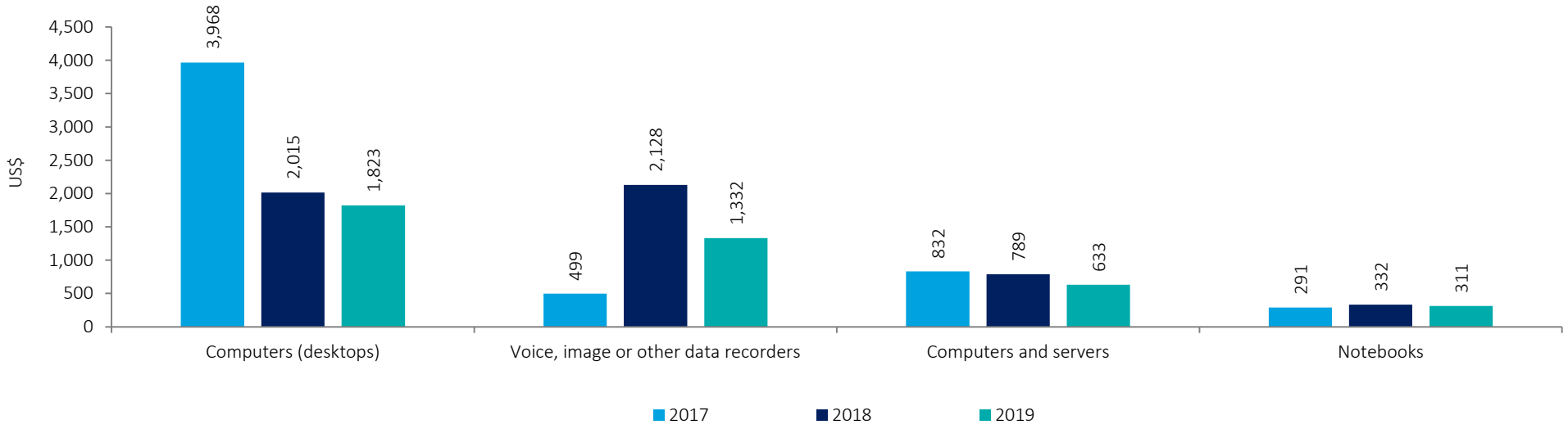
# Pricing

# Average import prices for electronic goods in Kazakhstan

## Changes in average import prices for electronic goods in Kazakhstan in 2017-2019, US$




- There are no tools to regulate prices of electronic goods in the market, due to limited local production (4%) and a significant import volume of products (96%).
- The average import price for computers (desktops) in Kazakhstan in 2017-2019 averaged US$ 2,602, while CAGR was at -32%.
- The average import price for voice, image or other data recorders in Kazakhstan was US$ 1,332 in 2019, while CAGR for 2017-2019 was 63%.
- In 2019, the average import price for computers and servers was US$ 633, while CAGR was at -13%.
- In the last three years, the average import price for notebooks was US$ 312. In 2019, the average price was US$ 311, while CAGR was at 3%.

*Source: trademap.org, open sources, Deloitte analysis*

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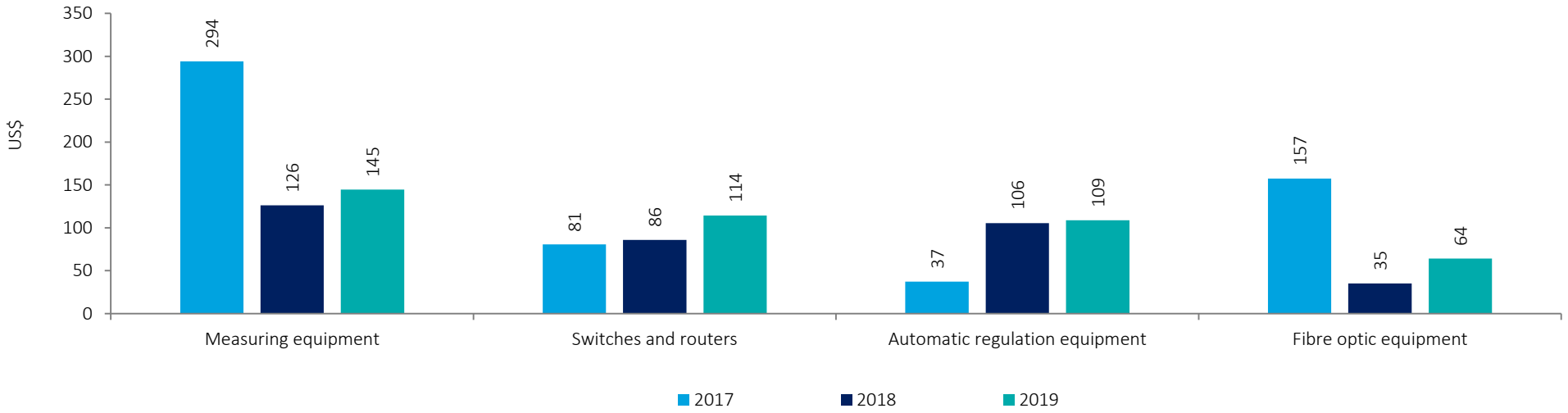
# Average import prices for electronic goods in Kazakhstan

## Changes in import prices for electronic goods in Kazakhstan in 2017-2019, US$




- In 2019, in Kazakhstan the average import price for measuring equipment was US$ 145, while CAGR was at -30%.
- In the last three years, the average import price for switches and routers was US$ 94. In 2019, the cost per unit was US$ 114 and CAGR - 19%.
- The average import price for automatic regulation equipment in Kazakhstan in 2017-2019 was US$ 84, while CAGR was at 71%.
- The average import price for fibre optic equipment in Kazakhstan was US$ 64 in 2019, while CAGR for 2017-2019 was at -36%.

*Source: trademap.org, open sources, Deloitte analysis*

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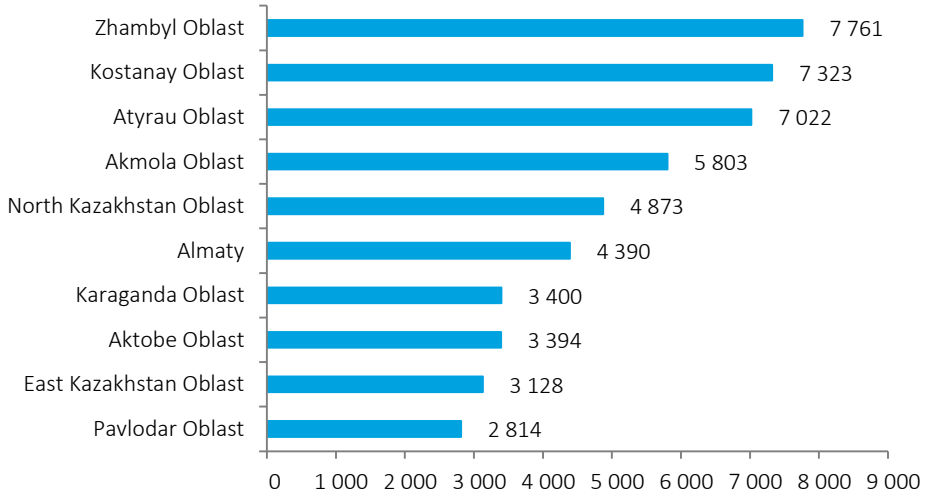
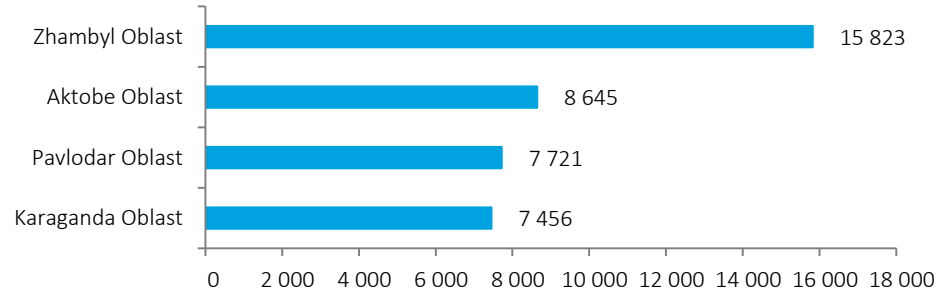
# State regulation of tariffs

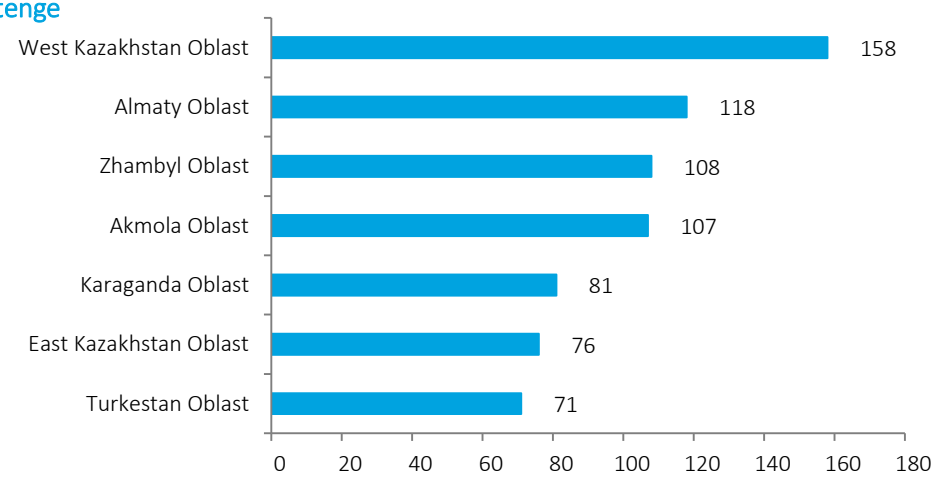
## Price per Gcal of heat energy in the regions of Kazakhstan in November 2020, tenge




## Price per thousand kWh of electricity in the regions of Kazakhstan in November 2020, tenge




## Price per cubic meter of cold water in the regions of Kazakhstan in November 2020, tenge




- In Kazakhstan, there is a state policy of tariff setting in the spheres of natural monopolies, and the state regulation of prices and control over the observance of pricing procedures and obligations of the subjects of the socially significant market are implemented. Utilities belong to the sphere of tariff regulation.
- As of November 2020, the price for heat energy in Kazakhstan averaged 4,991 tenge per Gcal.
- In November 2020, the price for electricity in the country averaged 9,911 tenge per thousand kWh, and the price for cold water averaged 103 tenge per cubic meter.

*Source : Kazakhstan Statistics Committee*

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# Overview of the global electronics market

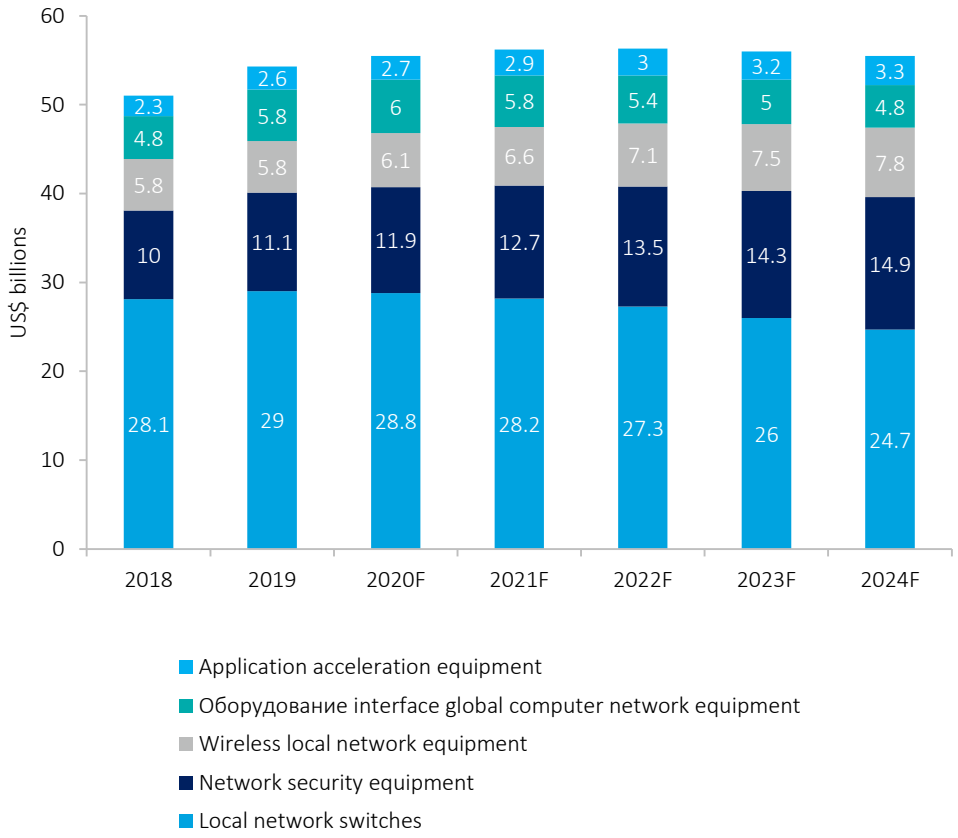
# Global profit from network equipment production

- The surge in Enternet production in 2019 was due to local network switch grouping where software subscriptions played a key role. As a result of the transition, global revenue from switch production amounted to US$ 29 billion.
- As part of a network security programme, in 2019 revenue from internetwork screen (firewalls) grew by 3% thanks to expanded functional production capabilities such as channels for collecting operational data on threats and improvements to traffic tracing functions.
- In 2019, profit from wireless local network production amounted to US% 5.8 billion. Gartner forecasts that this figure will continue to rise and reach US$ 7.8 billion by 2024.

## Main sector development trends

- The growth of network equipment market will continue due to high-speed communication platforms, especially 100 Gbit Ethernet switch.
- The global lockdown has hardly affected the supply chain for telecommunications infrastructure, as the main players, such as Ericsson, Nokia, Cisco, Huawei and ZTE, have access to technical components and parts.

## Company profit in the network equipment segment, US$ billions




Source: Gartner

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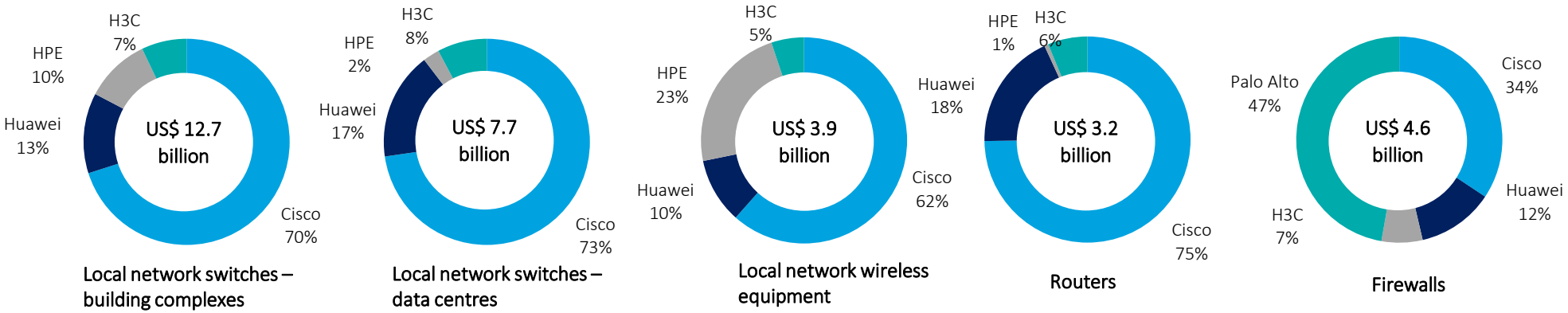
# Global revenue from network equipment production

## Details of revenue from global network equipment production in 2019




- According to Gartner, in 2019, Cisco's share of network equipment production was 39.6% compared to 41.2% in 2018. Despite the decline, Cisco profit increased thanks to the growth in switch production for building complexes.
- Huawei profit grew by 0.1% in 2019 to 8.4% of the total network equipment market. Switch production for data processing centres is responsible for the greatest profit, followed by network security and software-define global networks.
- Hewlett Packard Enterprise remains the third largest producer, despite a drop in revenue from 5.5% in 2018 to 4.6% in 2019.

## 5 leading global network equipment producers in 2019, US$ millions

| Company | Year founded | Revenue | Company value (EV) | Country |
|---|---|---|---|---|
| Huawei Technologies Co. Ltd. | 1987 | 122,972 | n/a | China |
| Cisco Systems | 1984 | 49,301 | 181,078 | USA |
| Hewlett Packard Enterprise | 2015 | 29,135 | 31,542 | USA |
| Palo Alto Networks Inc. | 2005 | 3,408 | 24,023 | USA |
| H3C Technologies Co., Ltd. | 2003 | 2,330 | n/a | China |

Source: Gartner

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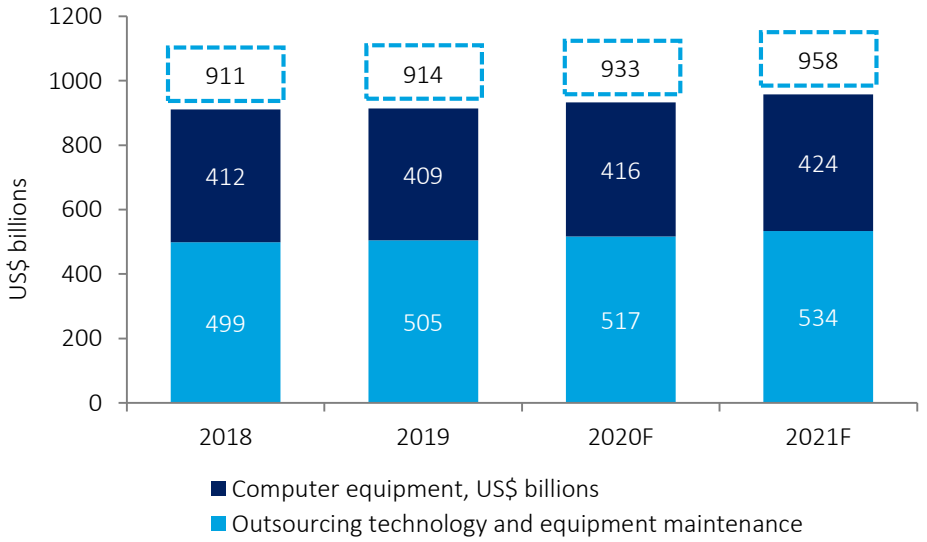
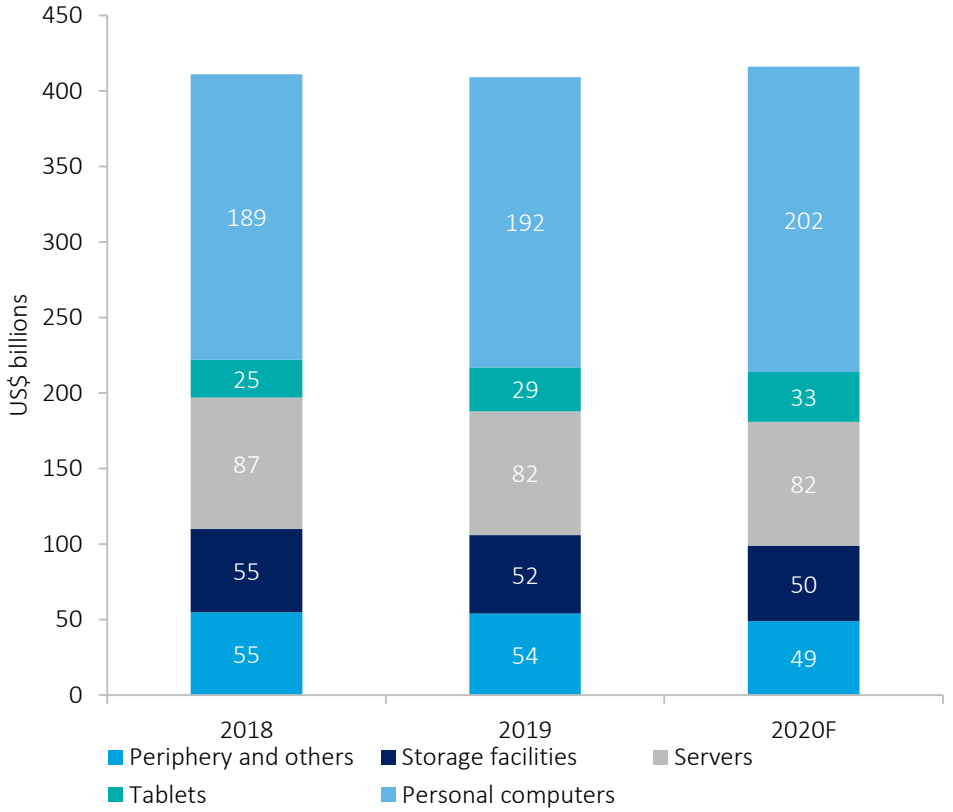
# Global use of computer equipment

- According to Forrester, global demand for computer equipment fell by 1% in 2019 due to a reduction in costs in the server and data storage system sector, and an increase in outsourcing technology and maintenance for current systems.
- The total global hardware market (including outsourcing technology and hardware maintenance) may grow by 1.7% (2018-2021).

## Details of the global procurement of computer equipment in 2018-2020, US$ billions




## Details of the global procurement of computer equipment by segment in 2018-2020, US$ billions




Source: Forrester

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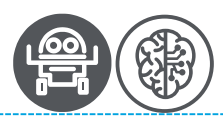
# Trends and impact in hardware industry

**Consumers will prefer professional gaming, buoying demand for advanced devices**

- **Driver:** Consumers are going to look for a professional gaming experience due to the growing popularity of esports leagues and gaming companies competing to attain the top spot.
- **Growth:** The global gaming market is expected to grow from USD 148.8 billion in 2019 to 189.6 billion in 2022 with a CAGR of 8.5%.
- **Outlook:** The industry is moving towards a platform agnostic, experience based gaming environment . Publishers are going to release more complex titles that will require precise input peripherals and headsets.
- **Response from players:**
  - In May 2019, Asus launched the ASUS ROG Mothership (GZ700), a gaming laptop with enhanced cooling.
  - HP in May 2019 launched the world's first dual screen gaming laptop, HP Omen X 2S.



**Neuromorphic computing will pave the way for a specialized hardware segment**

- **Driver**: The decline in growth rate of processing power of traditional chips and increase in demand for AI specific applications is buoying the need for Neuromorphic computing.
- **Outlook**: Neuromorphic devices need components that are analogous to the human brain. This includes production and use of neural networks that can be ported to neuromorphic hardware.
- **Growth**: The global Neuromorphic computing market may to grow to USD 650 million in 2025 from 42 million in 2018, at a CAGR of 49%.
- **Response from players**:
  - In July 2019, Intel launched Pohoiki Beach, an 8 million neuron neuromorphic system that allows brain inspired chip research.
  - HPE in 2018 announced that it is conducting research on brain inspired architectures to solve complex problems.

**Advanced technology will drive hardware innovations to cater to increased speed and density requirements.**

- **Driver**: Increase in computational requirements and higher level of storage and energy efficiency are driving the need for customized, high quality hardware.
- **Growth**: The global hardware spending could reach USD 897 billion in 2021 from USD 880 billion in 2019.
- **Alternative technologies:** This is giving a push for developing technologies such as:
  - **Onboard Optics (OBO)**: Onboard optical transceivers are optical modules that can be mounted on a network switch or adaptors to make data centres efficient.
  - **NVMe (flash) NVMe (flash) storage:** A high speed optimized and scalable storage protocol is being used in data centers for real time analytics.

Источник: Forrester

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# Trends and impact in hardware industry

**Quantum computing will witness mainstream adoption pushing for new hardware products**

- **Driver**: As traditional PCs peak their processing power, there is an urgency to move to quantum computing to solve specialized problems.
- **Outlook**: The technology will find use in areas such as targeted drug administration in medicine, calculating portfolio risk in wealth management , and space research.
- **Impact**: Companies are producing special purpose GPUs for accelerator use in high processing units:
  - Researchers are exploring qubits that are robust and error free , to carry out calculations.
- **Response from players**:
  - Tech giants such as Google, IBM and Amazon are competing to build quantum computers for mainstream applications.
  - In October 2019, Google launched Sycamore, its first quantum computer.

**Hardware security will become a focus area as designs become more complex**

- **Driver**: Increasing complexity of modern chips coupled with designs comprising billions of transistor components lead to vulnerabilities during design, fabrication, assembly, and testing.
- **Outlook**: Typical hardware attacks use vulnerabilities in hardware manufacturing supply chains to compromise systems. 63% companies reported that their data was potentially compromised due to a hardware or silicon level security breach in 2019.
- **Outlook:** Companies will design integrated circuits with security features to detect, quarantine and shut down attacks as they occur.
- **Response from players**:
  - Intel in 2018, announced new generation of chips with security baked into the hardware.

**Emerging technologies will pave way for new storage hardware solutions.**

- **Driver**: The exponential growth in data needing processing and analysis, especially in trend based industries food, fashion, entertainment, and social media are increasing demand for storage.
- **Emerging technologies,** such as AI, machine learning, and IoT will require enhanced storage hardware.
- **Outlook:** Cross vendor storage tracking and analysis applications that leverage machine learning to optimize total storage infrastructure will help enhance performance and cost.
- **Response from players**:
  - Introduction of large memory servers:
    - In 2019, Intel launched Non volatile RAM, 3D Xpoint with enhanced capacity over DRAM.
    - Nantero plans to start shipping NVRAM DIMMs in 2020.

Источник: Forrester

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# Trends and impact in hardware industry

**5G rollout is driving new hardware designs and solutions.**

- **Driver**: :Widespread 5G network deployment and introduction of 5G devices is propelling the need for upgrades in chipsets and handsets.
  - As of 2019, 61 operators worldwide had launched commercial 5G networks, which is 10% of the global LTE segment.
- **Improved specifications**: intelligent applications are generating a slew of new requirement in latency, bandwidth, capacity, coverage, storage, real time data.
- **Response from players**:
  - **Samsung**: included extra components in its 5G devices such as 5G modem and 5G RF chip..
  - **HPE**: launched HPE 5G Core Stack , a cloud native 5G core network solution in March 2020 to speed up 5G adoption.

**AI adoption is driving the need for dedicated hardware architecture.**

- **Driver**: : AI algorithms require hardware that can perform calculations and bring intelligence to the device, independent of the cloud.
- **Near term outlook:** AI may aid semiconductor companies to capture 40 to 50% of total value generated from the technology stack. Storage devices such as NAND will experience high growth.
- **Response from players**:
  - **Intel**: Announced experimental research system for neuromorphic computing in March 2020, the advanced form of AI deployment.
  - **HPE**: Launched bespoke HP Z Workstations for machine learning in 2018

**Firms are looking to diversify revenue streams and adopt new business models.**

- **Driver**: Hardware companies are ready to adopt new business models and monetization methods due to lowering margins and impact of emerging technologies.
- **Hardware as a service (HaaS):** Vendors are packaging services such as hardware, software, maintenance and installation in one offering.
- **Near term outlook:** companies are building an environment where vendors, service providers and other stakeholders unite, to build ecosystem driven services and monetization models монетизации.
- **Response from players**:
  - HP is exploring HaaS for its devices segment.
  - Microsoft has been offering 'Surface as a service' since 2016, allowing hardware upgrades and support against a monthly fee.

Источник: Forrester

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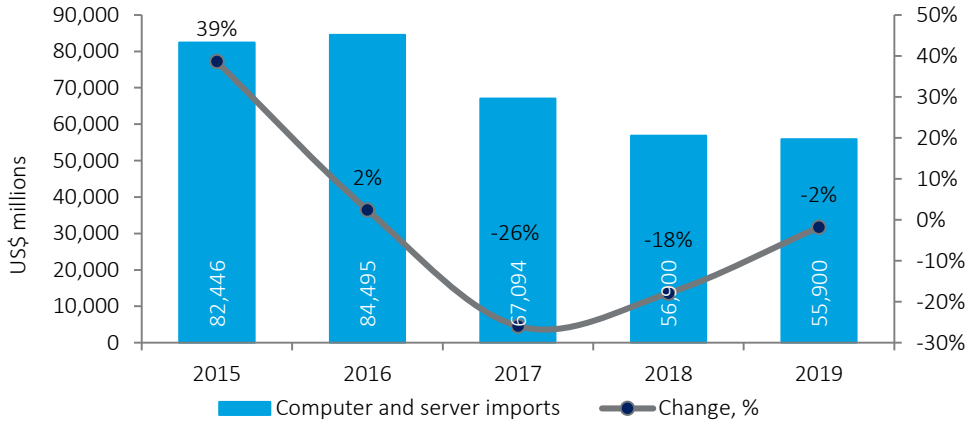
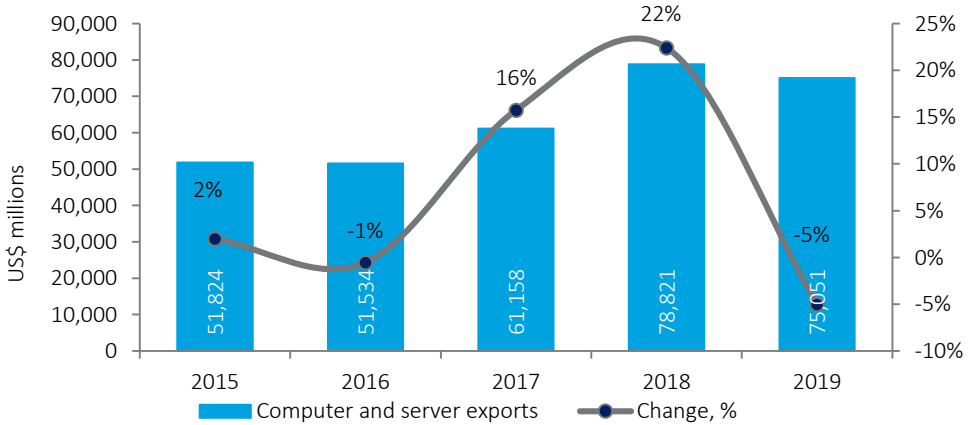
# Global computer and server imports and exports

## Global computer and server imports in 2015-2019, US$ millions

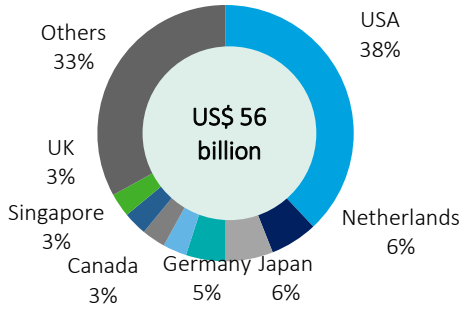



## Global computer and server exports in 2015-2019, US$ millions

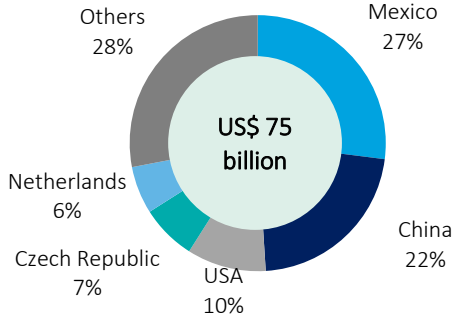



- China has been the undisputed leader in computer and server exports over the last decade. However, in 2019, its share fell to 22% of total exports in monetary terms, following Mexico, which accounted for 27% of global exports.
- One of the reasons for the decline in Chinese exports is the complex political relationship between the US and China. Mexico's position is aided by its proximity to the USA, extensive trade and investment relations as part of NAFTA, and other cultural and economic ties between the two countries. In addition, the USA is the largest source of direct investment in Mexico.
- The leading global producers of computer equipment are Lenovo, Hewlett Packard Enterprise, Dell Technologies, Apple, Acer Group and others. In recent years, Chinese companies have increased their share on the computer market.

## Structure of global imports by country in 2019




## Structure of global exports by country in 2019




Source: Trademap, Congressional Research Service

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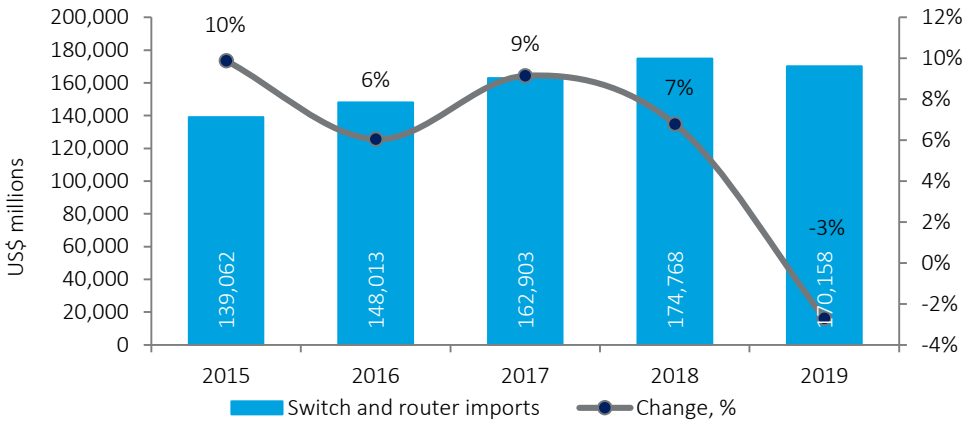
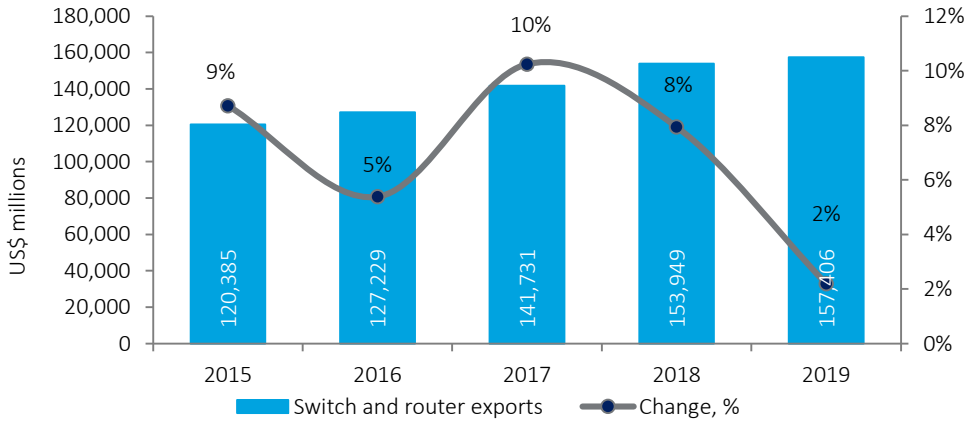
# Global switch and router imports and exports

## Global switch and router imports in 2015-2019, US$ billions

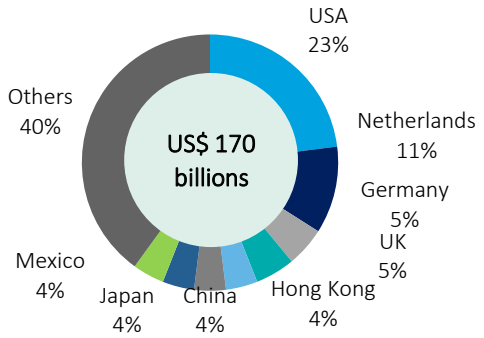



## Global switch and routers exports in 2015-2019, US$ millions

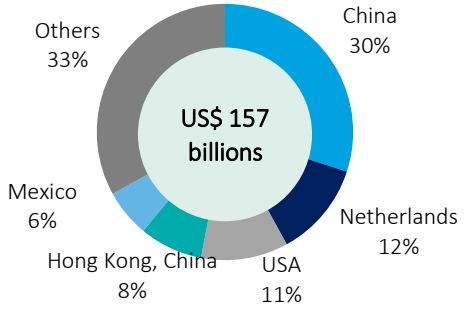



- Analysis of global switch and router exports by country in the last five years shows that China is the leader, accounting for 30% of exports in 2019. One of the reasons for this is the country's active policy of attracting capital and technology. For example, to attract direct foreign investment, China has introduced tax concessions on imports used to manufacture goods.
- To stimulate technology transfer, China often provides foreign companies with privileged access to the Chinese domestic market in exchange for the transfer of know-how to Chinese partners.
- The demand for communications equipment is forecast to continue its growth due to the popularity of mobile gadgets, with an extensive benchmark of strict bandwidth applications, primarily to work with video. However, this niche is closely linked to the global giants Huawei Technologies Co. Ltd. and Cisco Systems.

## Structure of global imports by country in 2019




## Structure of global exports by country in 2019




Source: Trademap.org, International Monetary Fund

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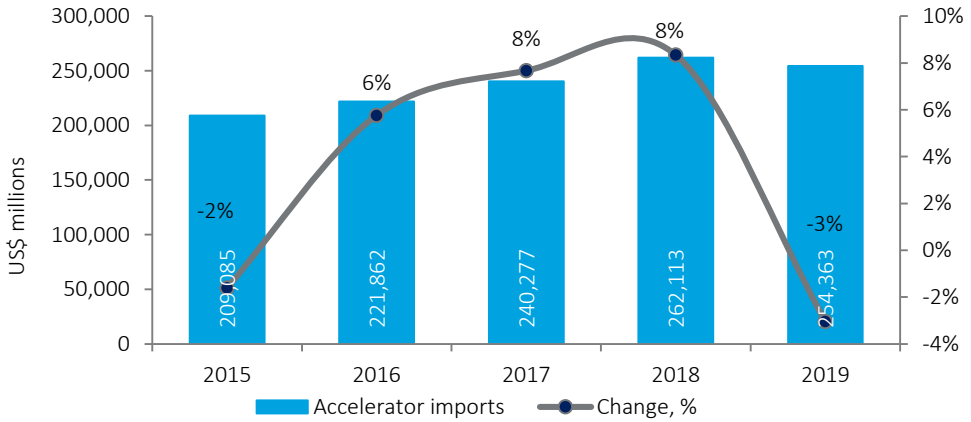
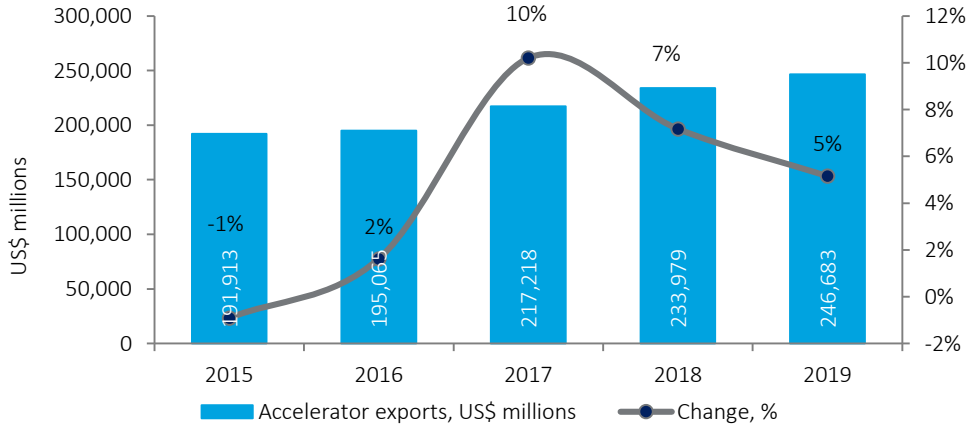
# Global accelerator imports and export

## Global accelerator imports in 2015-2019, US$ millions



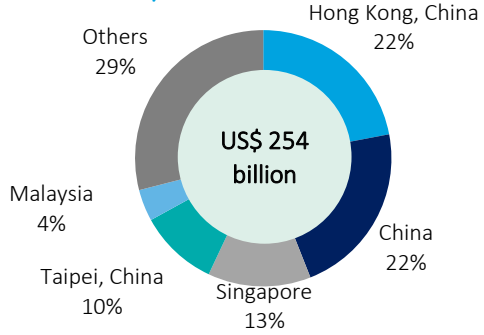

## Global accelerator exports in 2015-2019, US$ millions



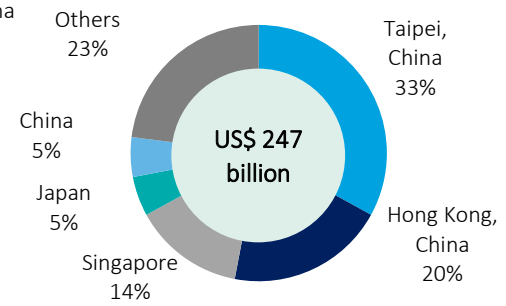

Source: Trademap, Congressional Research Service

- In the last 5 years, China has been the leading global exporter of accelerators (amplifying circuits – analogue devices used in switches, receivers, any sound reproduction equipment and others). In 2019, this figure amounted to 53%.
- Exports from China grew intensely in the last two decades, but a small part of accelerators are manufactured to cover domestic needs.
- The leading developers of computer integrated circuits and components are Realtek Semiconductor, Renesas Electronics Corporation and Renesas Electronics Corp.

## Structure of global imports by country in 2019




## Structure of global exports by country in 2019

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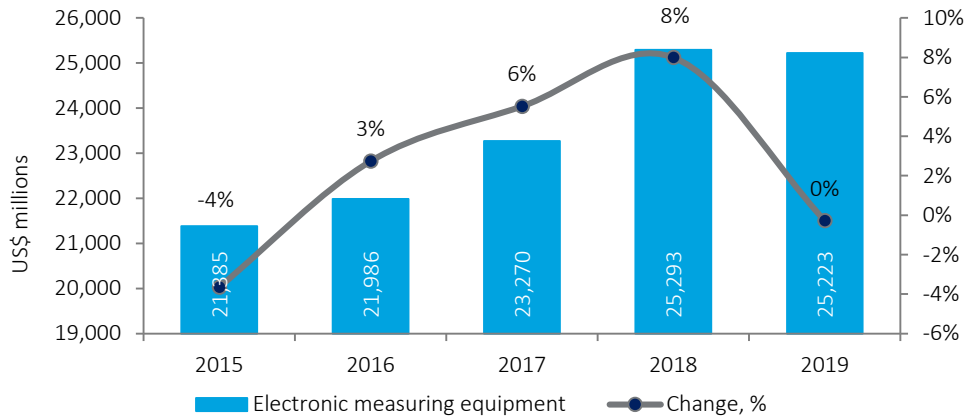
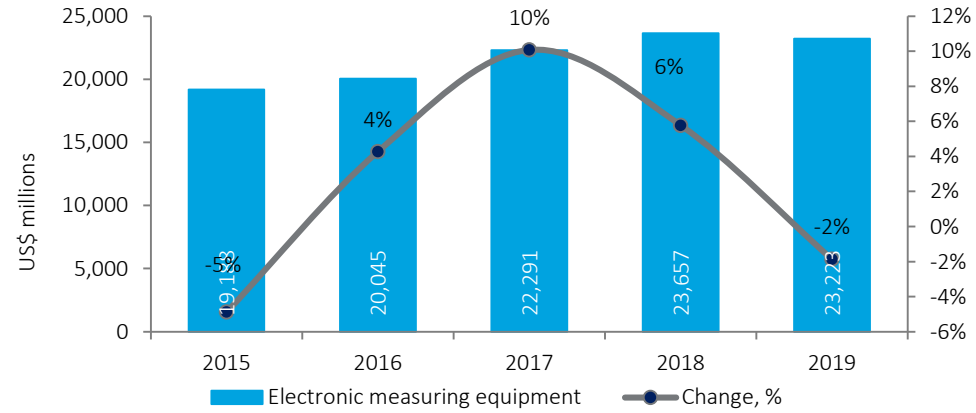
# Global electronic measuring equipment imports and exports

## Global electronic measuring equipment imports

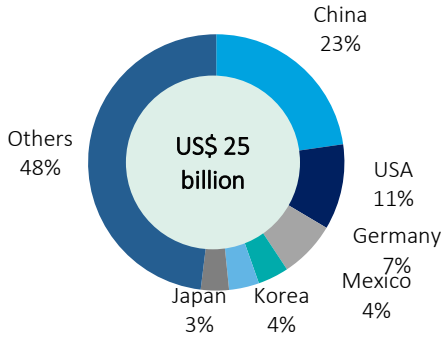



## Global electronic measuring equipment exports

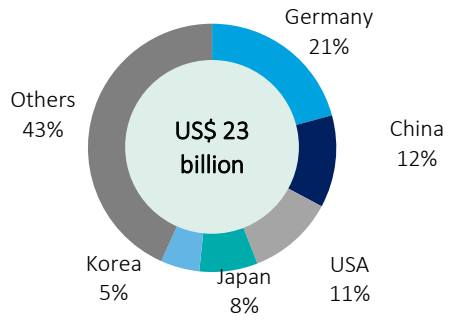



- Intellectual meters are electronic devices used to record electricity, heat, water and gas consumption at hourly intervals or less and pass on this information to an operating company server to issue invoices to customers. Intellectual meters may collect data for remote reporting.
- The largest markets for intellectual meters are Asia-Pacific and North America. Thus, the largest importers of electronic measuring apparatus are China (23%), the USA (11%) and Germany (7%).
- In 2019, the largest exporters of the product were Germany (21%), China (12%) and the USA (11%).
- Global producers of electronic measuring apparatus are Elster Group (Honeywell subsidiary), Itron International and others.

## Structure of global imports by country in 2019




## Structure of global exports by country in 2019




Source: Trademap, Congressional Research Service

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# State support

# State information and communication technology support

### Import substitution on the regulated market

To facilitate the planned regulated market import substitution, the Kazakhstan Government and MDDIAI will:

- consolidate state procurements according to unified commodity positions;
- expand the register of approved software and computer products to the quasi-state sector;
- improve mechanisms for concluding off-take contracts in the public and quasi-state sectors;
- assist in developing the production of electronics based on open-source solutions.

The above measures should help local electronics production reach KZT 243.6 billion by 2023 and create 21.3 thousand new jobs.

### Import substitution on the non-regulated market

To facilitate the planned non-regulated market import substitution, the Kazakhstan Government and MDDIAI will:

- provide innovation grants;
- prioritise financing through development institutions;
- assist in promoting products through domestic retailer networks;
- provide financing from 1% of subsoil users;
- provide cheap financing to purchase Kazakhstan products;
- create an association of electronic industry manufacturers and trade networks.

The above measures should help local electronics production reach KZT 439.2 billion by 2023 and create 41.4 thousand new jobs.

## State sector

**Creation**
Market volume: KZT 78 billion

**Health**
Market volume: KZT 10.5 billion

**Security**
Market volume: KZT 19 billion

## Quasi-state sector

**Power, telecommunications and transportation**
Market volume: KZT 96.8 billion

## Strategic businesses

**Consumers**
Market volume: KZT 177.6 billion

## Trade networks, public and business

**Consumers**
Market volume: KZT 682.1 billion



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# State sector support

## "Digital Kazakhstan" Programme

- In a bid to provide sector support, on 12 December 2017, the Kazakhstan Government issued Resolution No. 827 approving the "Digital Kazakhstan" State Programme 2018-2022.
- The "Digital Kazakhstan" State Programme provides for a number of specific measures to support the electronics industry in five key areas: "Digitalization of economic sectors", "Transition to a digital state", "Implementation of the digital Silk Road", "Development of human capital", "Creation of an innovation ecosystem".

## Register of trusted software

The MDDIAI has created a register of trusted software and electronics industry products consisting of 39 domestic service providers.

Inclusion in the register gives local producers priority in state tenders. This priority procedure was determined by amendments made in 2019 to the State Procurement Law.

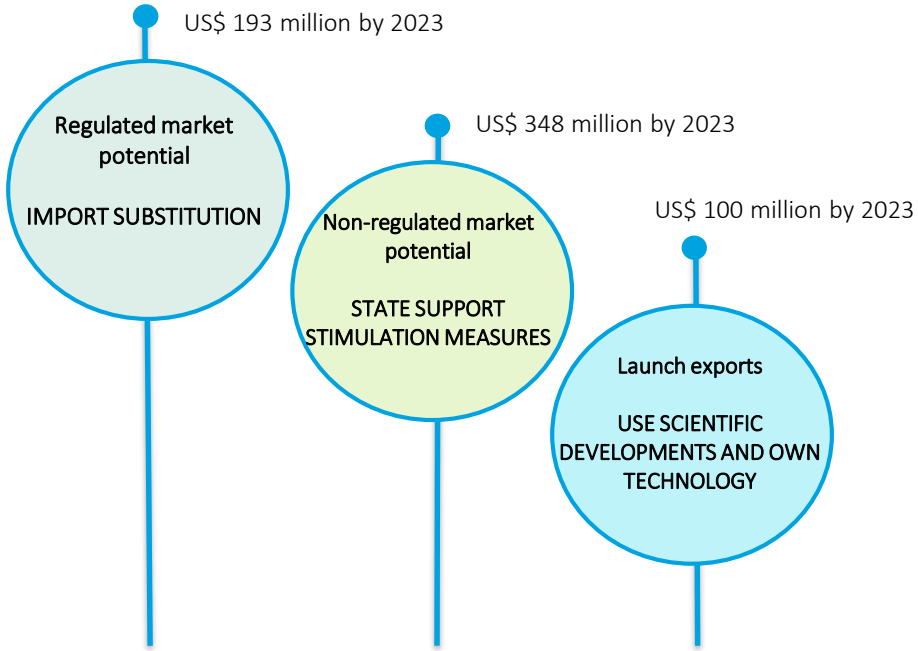
For inclusion in the register, applicants should provide:

- a document confirming proprietary rights to a programme or product,
- a certificate of compliance with inform security requirements,
- an industrial software certificate or CT-KZ certificate,
- a guarantee obligation and others.

## 3 stages for entering the international market

Necessary steps:

- Promote the company under the "DIGITEL" brand; activate the QazTrade , KazakhInvest , Embassy and Astana Hub promotional channels;
- Export accelerator, develop competencies;
- Attract investment for start-up companies through the MFCA platform and venture financing;
- Subsidise exporter costs; provide export loans.



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# State sector support within the framework of the Entrepreneurial Code

**Investment project**

create new or expand current production

**Priority investment project**

an investment project valued at least US$ 14.5 million in priority activities

**Special investment project**

- project implemented by a SEZ/free warehouse member
- project to assemble vehicles

The Kazakhstan Entrepreneurial Code determines the legal, economic and social conditions and guarantees ensuring the freedom of business in Kazakhstan and mechanisms for protecting investor interests.
Computer, electronic and optical equipment production are recognised as investment priority projects *(see the next slide).*

**Investment preferences in Kazakhstan**

| | Investment project | Priority investment project | Special investment project |
|---|---|---|---|
| Customs duty exemption | ✓ | ✓ | ✓ |
| State grants in kind | ✓ | ✓ | |
| Investment subsidies | | ✓ | |
| Import VAT exemption | | ✓ | ✓ |
| Income tax exemption | | ✓ | ✓ |
| Land tax exemption | | ✓ | ✓ |
| Property tax exemption | | ✓ | ✓ |
| Free work permit applications | | ✓ | |

Source: Kazakhstan Entrepreneurial Code

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# Priority activities for the implementation of investment projects (including priority investment projects) and special investment projects

## Computer, electronic and optical equipment production

| Group name | Class |
|---|---|
| Electronic components and boards | Production of electronic components |
| | Production of electronic boards |
| Computers and periphery equipment | Production of computers and periphery equipment |
| Communication equipment | Production of telecommunications equipment |
| | Production of television and radio equipment |
| | Production of cable telephone and telegraph communication equipment |
| Household electronic equipment | Production of household electronic appliances |
| Instrument and devices for measurement and testing | Production of instruments and devices for measurement, testing and navigation |
| | Production of equipment to measure mechanical amounts |
| | Electricity meter production |
| | Radio-measuring apparatus production |
| | Medical and surgical instrument production |
| Electro-medical Medical equipment | Production of radiation, electro-medical and electro-therapeutic equipment |
| Optical equipment | Production of Optical equipment |
| | Production of photo and cinema equipment |
| Magnetic and optical data media | Production of magnetic and optical data media |



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# State sector support within the framework of the “Saving Simple Things” Programme

- The aim of the “Saving Simple Things” Programme is to saturate the local market with domestic goods; stimulate competition in the manufacturing industry and, most of all, generate a wide range of consumer goods.
- Business projects implemented in priority sectors according to the approved list of goods to finance priority projects, which includes computer, electronic and optical equipment production, are eligible for financing. The State uses the programme to subsidise bank loan interest rates.
- The Project operator is JSC Damu. According to the Ministry of the National Economy, since the programme launched, a total of 209 projects worth KZT 139.6 billion have been approved. Of those 209 projects, 154 received financing to expand and upgrade, while 55 received financing to open a new business.
- According to the Atameken Scientific Research Institute, approved projects include the production of consumer goods such as clothing (coats, suits, blouses, footwear, specialised clothing and others), food (macaroni, bakery products, meat and sausages, dairy products, confectionary and others), chemical industry products (fertiliser), building materials (bricks and cement) and service industry facilities (the construction of orphanages, pre-school facilities, sanatoria, hotels, rehabilitation centres and others).

## Programme terms

| | |
|---|---|
| Participants | private businesses (small, medium and large businesses) |
| Loan interest rate | 15% per annum |
| Subsidy amount | up to 9% of the nominal interest rate |
| Project purpose | investment and working capital replenishment; working capital may be replenished on a renewable basis |
| maximum amount per borrower | no limit |
| Subsidy period | for investment – 10 years without further subsidy period extensions |
| | working capital replenishment – 3 years without further extensions to subsidy periods |
| Loan refinancing | not stipulated |
| Current loans | bank loans issued after Government Resolution No. 820 dated 11 December 2018 entered into force are permitted |

Source: official website of the Kazakhstan Prime Minister

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# State sector support within the framework of the “SIIDP 2020-2025” Programme

- The aim of the “SIIDP 2020–2025” Programme is to create a competitive manufacturing industry in Kazakhstan domestically and overseas (Government Resolution No. 1050 dated 31 December 2019). The main focus of SIIDP 3.0 is the implementation of key projects with export potential.
- JSC NMH Baiterek is the main facilitator in implementing programme goals, such as increasing production levels and expanding the range of products in demand both domestically and overseas, as well as developing and digitising the manufacturing industry.
- Specifically, JSC NMH Baiterek acts as the operator for all recoverable financial support measures through its subsidiaries and is responsible for attracting resources on both domestic and overseas debt and equity markets to ensure cheap financing for manufacturing industry businesses.

## Project financing and lease financing within the framework of the SIIDP

1) Financial institution lending will continue through inter-bank lending under Kazakhstan Development Bank and Damu Fund credit lines.
2) Long-term financing under the Kazakhstan Development Bank credit line will involve mixing budget funds and commercial funds 50/50 for 7 – 10 years, at interest of up to 11% for the end borrower, with business participation in at least 20% of the project.
3) Long-term lease financing to upgrade equipment is provided by JSC BRK-Leasing to fund industrial and innovative activities implemented and/or planned for implementation in priority sectors.
4) Interest on loans provided by financial institutions is subsidised, and loan guarantee obligations (operator – Damu Fund) with a nominal interest rate not exceeding 15% per annum within the framework of Government Resolution No. 820 dated 11 December 2018.

## Project financing amounts, KZT millions

| Index | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|
| Republican budget | 146,065.3 | 215,725.1 | 107,896.4 | 107,863.5 | 101,996.9 | 101,249.9 |
| **Total** | **146,065.3** | **215,725.1** | **107,896.4** | **107,863.5** | **101,996.9** | **101,249.9** |

Source: official website of the Kazakhstan Prime Minister



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# State sector support within the framework of the “2025 Business Road Map” Programme

- The focus of the “2025 Business Road Map” Programme is to achieve the goals set out in the Kazakhstan President’s Address to the People “Strategy Kazakhstan-2050” from 14 December 2012. The Programme subsidises interest on finance lease loans/agreements and guarantees loans.
- It stipulates the provision of state grants and training of the business community to support and develop small and medium-sized businesses in Kazakhstan.
- The Programmes aims to ensure sustainable and balanced growth in regional business, and support current and creates new jobs.
- The Programme has 3 directions:
  - the support of new business initiatives for the business community in “single-industry towns”, small towns and rural areas
  - support for businesses operating in priority sectors
  - other non-financing support measures for businesses
- KZT 421 billions was allocated to implement the Programme until 2025.

**Programme terms**

| | |
|---|---|
| Participants | Entrepreneurs and businesses involved in industrial and innovative activities implementing and/or planning to implement their own projects in priority sectors |
| Subsidy amount | Up to 14% |
| Project purpose | Purchase fixed assets; replenish working capital; refinancing; and purchase a franchise |
| Maximum amount per borrower | KZT 7 billion |
| Subsidy period | 5 years, to replenish working capital – 3 years |

*Source:* official website of the Kazakhstan Prime Minister

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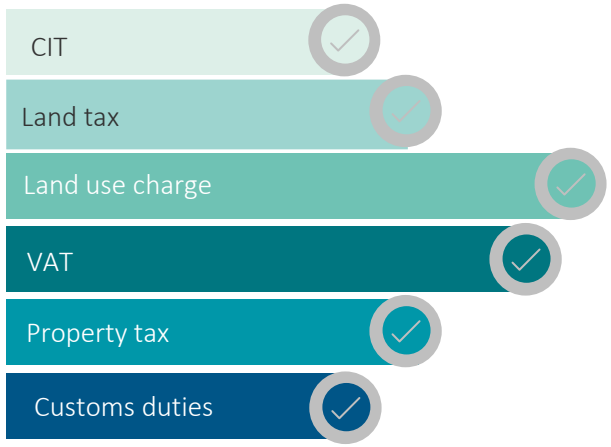
# Free economic zones

- A special economic zone ("SEZ") is a part of Kazakhstan territory where special tax rules apply and infrastructure facilities are in place to perform priority activities.
- According to Order of the Ministry of Investment and Development No. 142 dated 27 February 2018, computer, electronic and optical equipment production are included in the list of priority activities in special economic zones. In particular, construction material production is included as a priority activities for the following SEZ:
  - Astana-Technopolis;
  - Aktau Seaport;
  - Innovative Technology Park.
- Under the Tax Code, SEZ members are exempt from:




**Members are also entitled to:**

- Land use for 10 years
- Hire foreign nationals according to a simplified procedure

**To receive tax concessions, SEZ members should meet all of the following simultaneously**

01 Be registered as a taxpayer with the tax authorities in the SEZ

02 Have no structural divisions outside of the SEZ

03 No less than 90% of its aggregate annual income should be generated from the sale of goods of own production/services (in the relevant priority areas for the given SEZ)

Source: adilet zan

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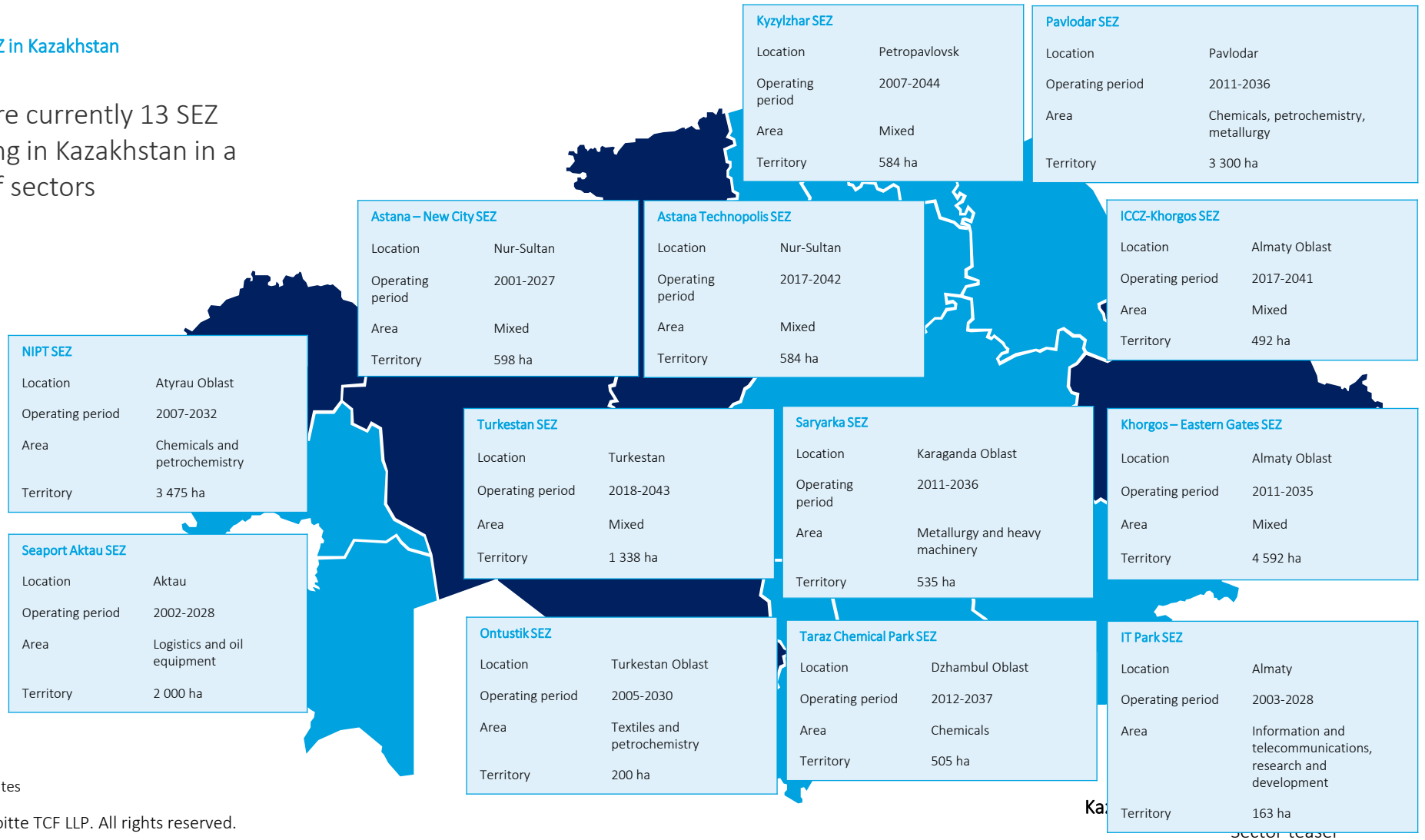
# Free economic zones

## Current SEZ in Kazakhstan

There are currently 13 SEZ operating in Kazakhstan in a range of sectors



**Kyzylzhar SEZ**

| | |
|---|---|
| Location | Petropavlovsk |
| Operating period | 2007-2044 |
| Area | Mixed |
| Territory | 584 ha |

**Pavlodar SEZ**

| | |
|---|---|
| Location | Pavlodar |
| Operating period | 2011-2036 |
| Area | Chemicals, petrochemistry, metallurgy |
| Territory | 3 300 ha |

**Astana – New City SEZ**

| | |
|---|---|
| Location | Nur-Sultan |
| Operating period | 2001-2027 |
| Area | Mixed |
| Territory | 598 ha |

**Astana Technopolis SEZ**

| | |
|---|---|
| Location | Nur-Sultan |
| Operating period | 2017-2042 |
| Area | Mixed |
| Territory | 584 ha |

**ICCZ-Khorgos SEZ**

| | |
|---|---|
| Location | Almaty Oblast |
| Operating period | 2017-2041 |
| Area | Mixed |
| Territory | 492 ha |

**NIPT SEZ**

| | |
|---|---|
| Location | Atyrau Oblast |
| Operating period | 2007-2032 |
| Area | Chemicals and petrochemistry |
| Territory | 3 475 ha |

**Turkestan SEZ**

| | |
|---|---|
| Location | Turkestan |
| Operating period | 2018-2043 |
| Area | Mixed |
| Territory | 1 338 ha |

**Saryarka SEZ**

| | |
|---|---|
| Location | Karaganda Oblast |
| Operating period | 2011-2036 |
| Area | Metallurgy and heavy machinery |
| Territory | 535 ha |

**Khorgos – Eastern Gates SEZ**

| | |
|---|---|
| Location | Almaty Oblast |
| Operating period | 2011-2035 |
| Area | Mixed |
| Territory | 4 592 ha |

**Seaport Aktau SEZ**

| | |
|---|---|
| Location | Aktau |
| Operating period | 2002-2028 |
| Area | Logistics and oil equipment |
| Territory | 2 000 ha |

**Ontustik SEZ**

| | |
|---|---|
| Location | Turkestan Oblast |
| Operating period | 2005-2030 |
| Area | Textiles and petrochemistry |
| Territory | 200 ha |

**Taraz Chemical Park SEZ**

| | |
|---|---|
| Location | Dzhambul Oblast |
| Operating period | 2012-2037 |
| Area | Chemicals |
| Territory | 505 ha |

**IT Park SEZ**

| | |
|---|---|
| Location | Almaty |
| Operating period | 2003-2028 |
| Area | Information and telecommunications, research and development |
| Territory | 163 ha |

Source: SEZ sites

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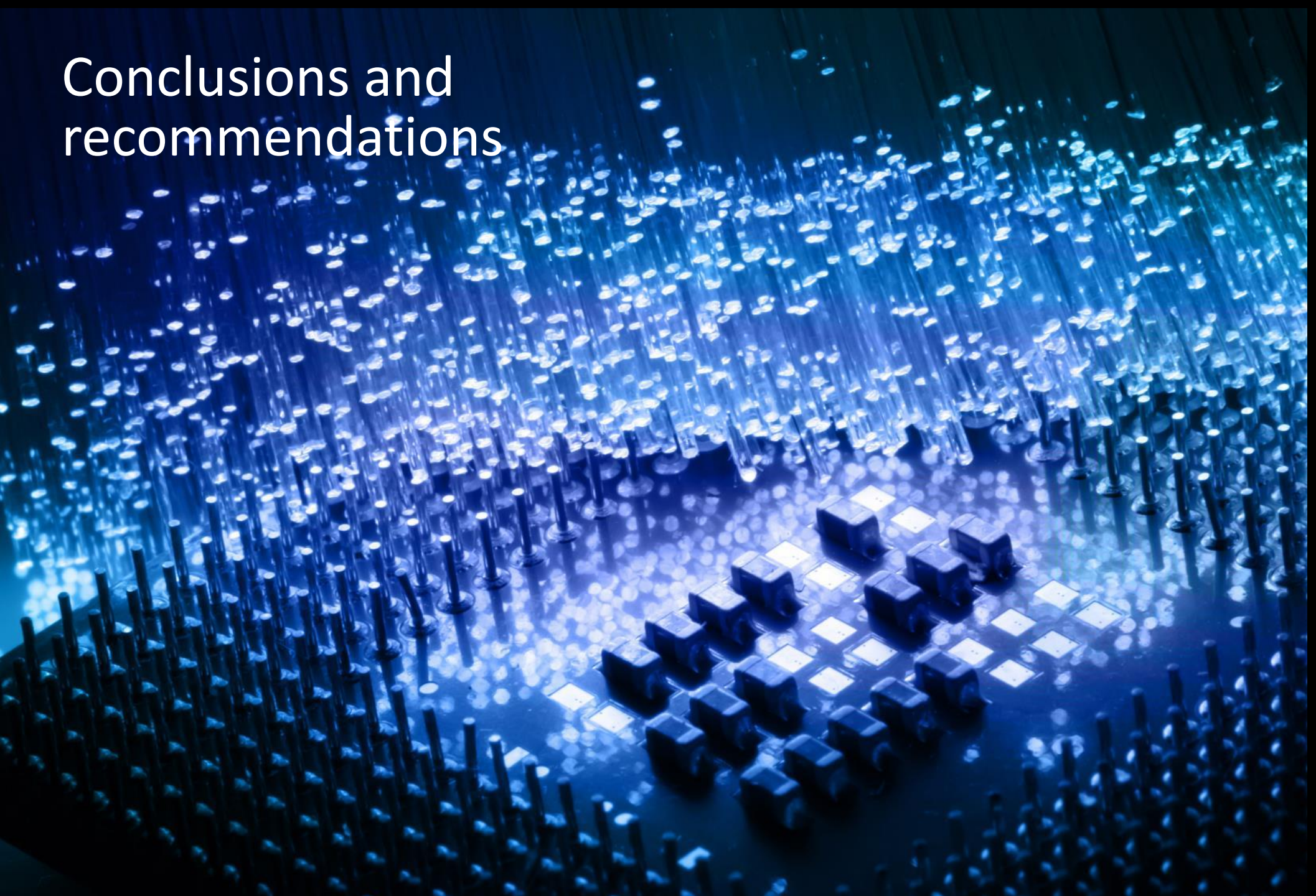
# Conclusions and recommendations



# Conclusions and recommendations

### Sector growth

- Kazakhstan has observed sector growth: if in 2010, production was at KZT 16.5 billion, then by 2019 that figure had reached KZT 44.5 billion. Nevertheless, local production accounts for only 4% of the total electronics industry in the country.

### Industry potential

- The electronics industry has a great potential for further development. State support and growing demand for electronic goods are key prerequisites for increasing the production capacity of Kazakhstani enterprises, which will reduce import dependence as well as increase exports. The latter is facilitated by the territorial proximity of the Russian and Central Asian markets. Software occupies a significant share in the cost structure of electronic industry equipment, so the country needs to develop a system of venture financing for local startup projects in the field of electronic industry.

### Import substitution

- The sector is currently in urgent need of stimulation to replace imports for practically all electronic goods, such as mobile phones, computers and periphery devices, televisions, communication equipment, fibre optic equipment, and measuring apparatus. For example, in 2019 the country imported products worth KZT 1,020 billion, mainly from China and Russia.

### State sector support

- The “Digital Kazakhstan” State Programme;
- Special economic zones have been set up;
- Significant tax and customs benefits are in place, while production infrastructure has been built;
- Beneficial economic conditions;
- Sector support measures in the form of increases in the number of off-take contracts with domestic manufacturers, the introduction of cheap funding to purchase locally assembled computers through trade networks, the allocation of financing for electronics research and others.

### Involvement of transnational corporations and venture funds in cooperation

In order to develop the electronic industry in the country, it is necessary to follow the world practice: to attract large transnational corporations to the country with the localization of their service centers, providing them with targeted conditions of cooperation under the condition of technology transfer. In addition, a positive shift in the development of the industry contributes to the comprehensive development of the human resources component of the industry by training specialized personnel, to apply systematic measures in the field of higher and specialized secondary education, including a system of grants and benefits for applicants for this specialization, attracting teaching staff.

### Access to human resources

- Kazakhstan has the potential to build human capital in the electronics industry, stimulating an influx of staff through the allocation of learning grants in IT, the creation of universities and vocational courses in computer literacy.



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# List of abbreviations

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| | |
|---|---|
| CAGR | Compound aggregate growth rate |
| EV | Company value |
| Kazakhstan | Republic of Kazakhstan |
| MDDIAI | Ministry of Digital Development, Innovation and the Aerospace Industry |
| n/a | no data available |
| US$ | US Dollar |



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