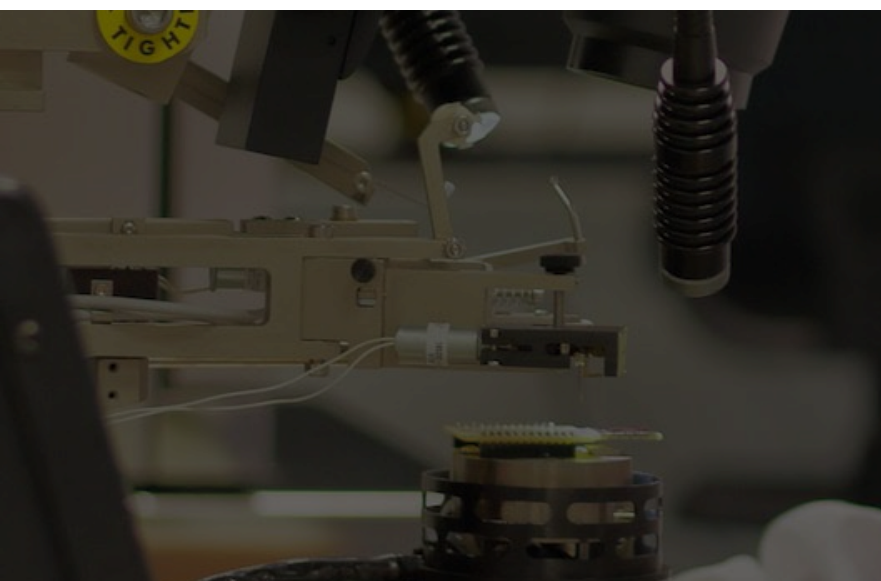


Jordan: A trusted partner for the semiconductor industry



strategy&



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Executive summary



Jordan is a highly attractive location for semicon investment

Jordan's cost-competitive workforce, favorable business environment, robust infrastructure, and commitment to sustainability make it **an attractive location for semicon companies**. Jordan offers a **unique opportunity for backend operations, enhancing supply chain resilience, and establishing a presence in the Middle East to serve the global markets**.

With the global semiconductor industry projected to face a talent gap, Jordan stands out as a promising destination with a **cost-competitive and skilled workforce**. The country boasts a high percentage of technicians and engineering graduates, creating a pool of talent for semiconductor design and backend operations.

International companies have successfully operated in Jordan for years, benefiting from its cost-advantageous labor market and **free trade agreements with all major regions**. Moreover, the country has a strong track record in protecting intellectual property rights of foreign companies. Jordan's reputation as a **safe business location in the Middle East**, coupled with financial stability and an effective legal framework, fosters a conducive environment for investments.

Jordan offers not only a **strong infrastructure** but also a **high quality of life**, supported by excellent healthcare and education systems. The country's commitment to renewable energy is evident, with 27% of its energy supply already coming from renewable sources. Recognizing the importance of water supply, Jordan is investing significantly to further improve the availability of vital resources. Additionally, Jordan's digital infrastructure provides a **solid foundation for business operations**.

Why Jordan is the right choice for the semicon industry:



Availability of skilled, low-cost workforce



Strategic location close to Europe and Asia



Safe and stable business environment



Liberal trade policy and attractive taxation system



Cost-competitive and stable energy supply

Jordan at a glance: An important partner for major world economies



11.2 million people (2023)



Arabic, English



Mediterranean climate



Jordan's currency is pegged to the US\$



Political stability and ties

Jordan is considered **one of the most stable countries in the region**, playing a key role in regional security. Jordan is a **major non-NATO ally** of the US and a **strategic partner to both the US and Japan**. The signing of the US – Jordan defense cooperation agreement serves as a compelling testament to the nature of the relationship and strategic alliance, while the seven-year Memorandum of Understanding (MoU) with the US stands out as one of the most momentous bilateral agreements that the US has ever signed.

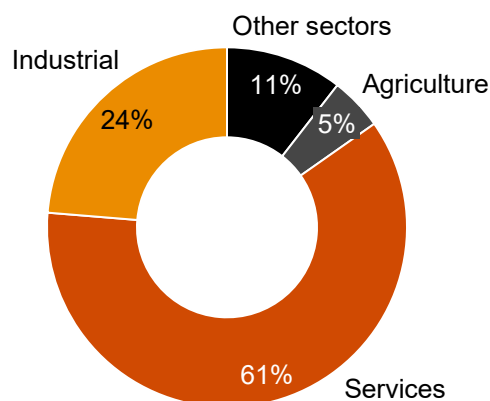
Location

Strategically positioned in the heart of the Middle East, Jordan enjoys market access to trade opportunities within the MENA region but also to Europe, Africa, and the larger Asia.

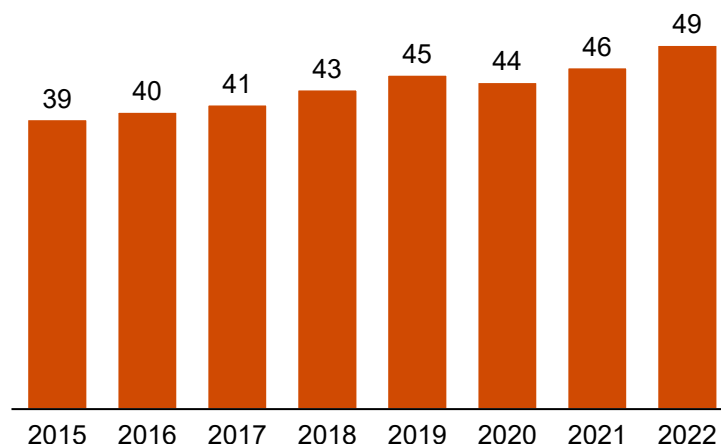
Economy and trade

In 2022, Jordan's GDP was USD 49B, which is expected to rise by 3% annually until 2028.¹ Imports are mainly from China, Saudi Arabia, the US, Germany, and the UAE. 22.3% of the exports are directed to the US (USD 1.8B in 2020) making it Jordan's most important trading partner.²

GDP across economic sectors² FY 2021



GDP in Jordan¹ (USD, in billions)





Talent availability,
quality and cost

01

The global semicon industry will face a talent gap



Estimated talent gap of ~380,000 professionals in US and Europe by 2030



~420,000 professionals can be recruited by applying “business as usual” (e.g. standard graduate recruiting) by 2030



Current situation (2021):

Total of **1.0M** professionals working in semiconductor industry in **US and Europe in 2021**

The semiconductor industry is facing a growing challenge as its rapid expansion outpaces the availability of skilled talent.

With a projected global market growth of 70% from 2022 until 2030 and the ambitious goals of the US and Europe (increase of market share and strengthening of domestic production), companies from these regions will require an estimated 1.8 million additional professionals by 2030.

Despite the potential increase in engineering and STEM graduates in the future, only a small fraction of these

Future estimation (2030):

Total of **1.8M** additional professionals required to realize **60% market share by 2030** (European Chips Act objective and current US share)

graduates currently opt for a career in semiconductors. This shortage extends to technicians as well, exacerbated by the declining number of apprentices and the diminishing appeal of shift work models.

Consequently, the US and European semiconductor industry are expected to face a talent gap of approximately 380,000 by 2030. In addition to that, other semicon economies, such as Japan, will also face a significant talent gap. As the industry continues to expand, **addressing this talent scarcity will be crucial to sustain growth and innovation.**

Engineers and technicians are key for semiconductor design & production

According to industry experts, the semiconductor industry heavily relies on various engineering profiles, including design, material, process, application, and software engineering.

necessarily requiring a specific university degree. Graduates with backgrounds in STEM (Science, Technology, Engineering, and Mathematics) and ICT (Information and Communications Technology) are well-suited for these roles.

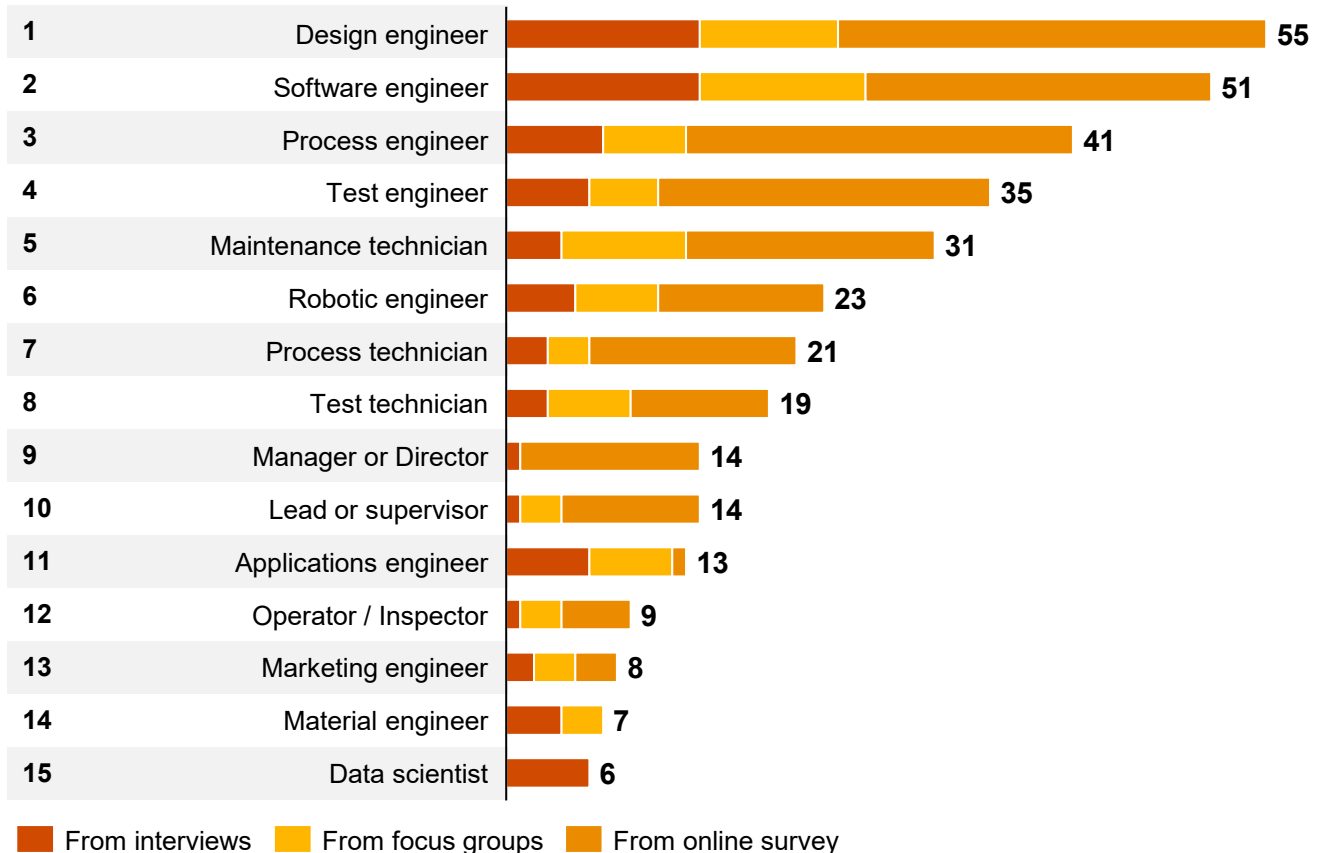
The industry's transformation is evident, with software engineers now ranking second in importance. Highly skilled technicians play a critical role as the operational workforce in semiconductor production.

Leadership positions are also crucial in the semiconductor industry. Project managers, directors, and supervisors combine industry expertise with traditional project management skills. Understanding the composition of the semiconductor workforce, including the significant portion of experienced professionals, is essential for effective talent management and recruitment strategies within the industry.

Notably, a significant portion, ranging from one to two-thirds, of a semiconductor facility's workforce consists of experienced professionals with extensive industry knowledge. The remaining positions can be filled through local workforce training, without

Importance of professional background from semiconductor industry (METIS)¹

Number of votes from 251 industry experts of 159 organizations



Summary: Jordan has a cost-competitive workforce with constantly increasing skill levels

Competitive strengths of the Jordanian economy

The Jordanian labor market has several competitive advantages compared to other countries.

Skilled labor force

Firstly, there is a highly skilled labor force readily available within the country. As a small country with limited GDP growth, the Jordanian labor market does not offer highly skilled workers enough opportunities. Consequently, the unemployment rate for university graduates is 78% for females and 26.5% for males, respectively.¹ These graduates are highly motivated to work given an opportunity that matches their skill set.

Graduates in sciences

The Jordanian labor force is renowned for its high quality education and high degree of science graduates. In the IMD world talent ranking 2022, Jordan ranks 14th for its high share of university graduates in ICT, engineering, math and natural science subjects of 28.4%.² Given their reputation, many Jordanian graduates are offered job opportunities abroad, and particularly in the Gulf countries.³

Competitive strengths of Jordan's workforce



Labor force growth

Additionally, Jordan is unlikely to face any labor shortages in the foreseeable future. The median age of Jordanians is 24 years and labor force grows with 3.7% per year which is the 7th highest value globally.²

Manager competence

Furthermore, Jordan ranks 17th globally in senior management competence², indicating that Jordanian firms are well managed and senior management talent is readily available for firms in Jordan. Jordanian labor laws and regulations also enable foreign labor and high-skilled labor work permits that allow knowledge transfer and the building of local know-how.

International experience

Many Jordanian employees also have international experience, especially in management positions. This allows for the transfer of knowledge and upskilling of the local workforce through on-the-job training.

1.6 Pay-to-productivity

In a global context, Jordan ranks 26th in pay-to-productivity⁴ underlining its high cost competitiveness and Jordan's high-skill workforce.

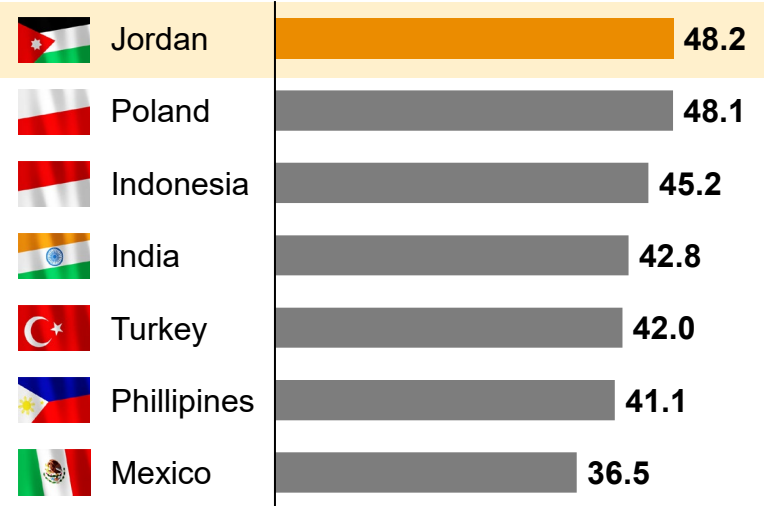
Upskilling of skilled workforce for the semicon industry

Several countries in the upper middle income range have already successfully attracted semiconductor design, testing and packaging fabs.

For example, Intel recently announced a \$4.6 B Investment in a testing and packaging fab in Poland.¹ Infineon is currently doubling its packaging capabilities in Indonesia and also operates a facility in the Philippines.² Moreover, USI, a subsidiary of ASE already has a testing and packaging fab in Mexico.³

However, looking at the IMD world talent ranking 2022 which measures the development, retention and attraction of highly-skilled workforce, **Jordan performs better than all of the aforementioned economies.**⁴ This illustrates its attractiveness for investments into semiconductor design, testing and packaging.

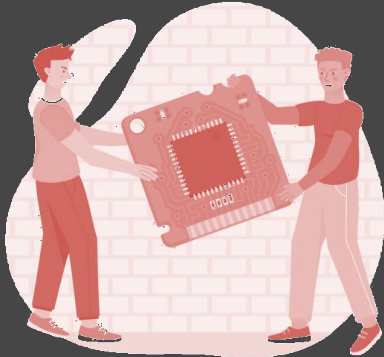
Availability of highly-skilled workforce IMD World Talent Ranking 2022



Jordan has a high-skilled workforce that is readily available for employment opportunities and motivated to work.

In the INSEAD Global Talent competitiveness index 2022, Jordan is on par with its peer group of upper middle income countries.⁵ Furthermore, In IMD’s world talent ranking 2022, Jordan ranks 10th out of the economies below \$20,000 GDP per capita for talent attractiveness.¹

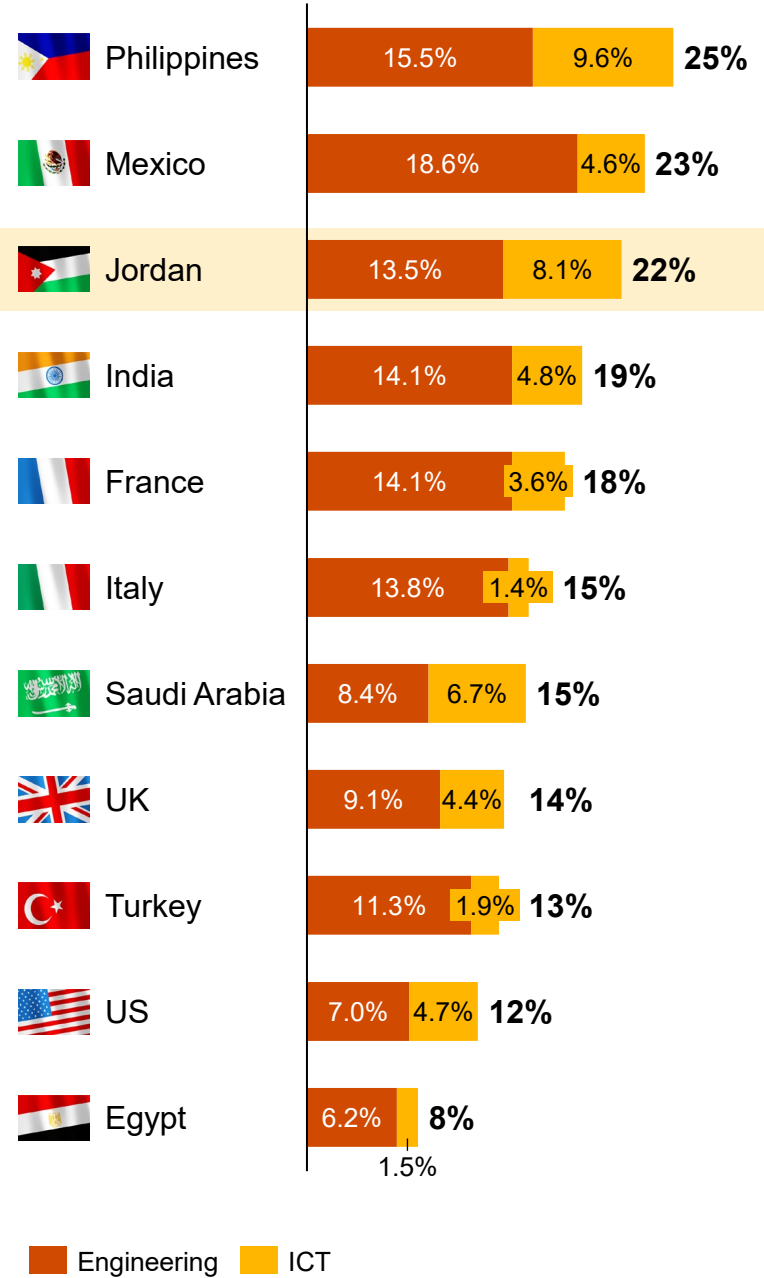
Jordan performs better in talent attractiveness than many other countries with substantial testing and packaging industry. This illustrates the investment case for semiconductor design and backend facilities in Jordan.



Sources: 1) Bloomberg 06/2023; 2) eeNewsEurope 04/2022; 3) USI company page 4) IMD World Talent Ranking 2022; 5) INSEAD Global Talent Competitiveness Index 2022

High percentage of ICT and engineering graduates

Percentage of engineering and ICT graduates by country¹



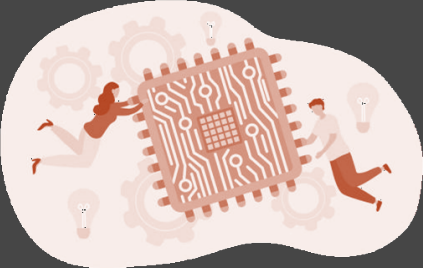
Jordan is renowned for its talent, boasting the highest number of engineers per capita. The country has gained recognition for exporting its talent to both regional and global markets.

This phenomenon is attributed to Jordan's relatively small size, which limits the country's economic growth and prompts the utilization of available talent beyond its borders.

Jordan's universities are teaching different specialties in engineering and software such as Python, Java, and Cyber security.

Consequently, a surplus of talent exists at a cost-competitive structure, primarily due to the high unemployment rate among Jordanian youth. Notably, the unemployment rate among female university graduates stands at 78%, while for males, it is 26.5%.² This means that in Jordan **over 50k unemployed engineers are available.**

Regardless, a semiconductor backend operation partially also requires a specially trained workforce. **Jordanian labor laws and regulations are prepared and permit, as well as encourage the employment and immigration of foreign and high-skilled workers.**

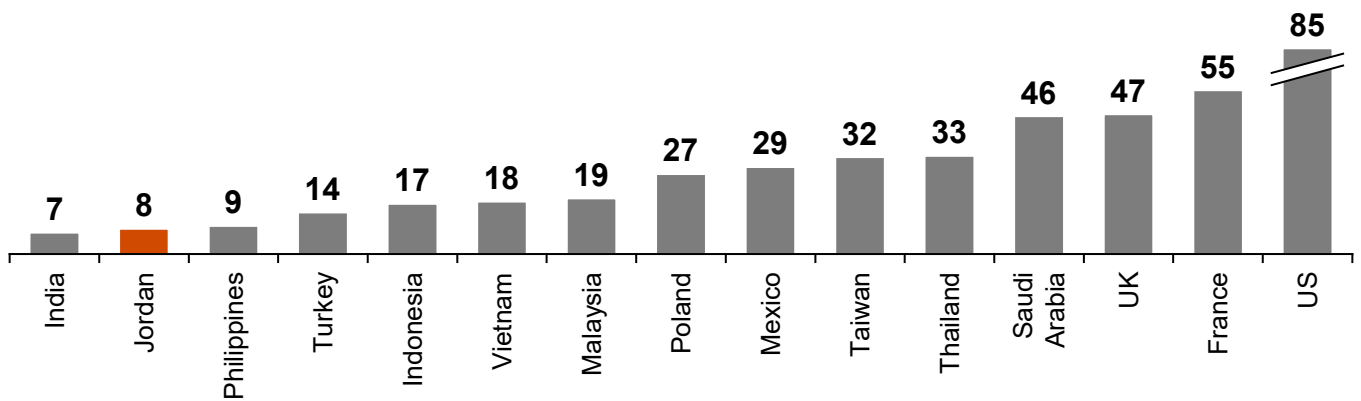


Sources: 1) UNESCO Institute for Statistics; 2) Technology & Business in Jordan PwC 2022

Jordan has a cost-advantageous labor market for semicon players

Jordan stands out as one of the countries offering the most cost-effective talent options. In terms of engineering professionals, **employing an engineer in Jordan costs 2-4 times less** compared to countries like Indonesia, Malaysia, and Taiwan, which are prominent backend semiconductor industry players.

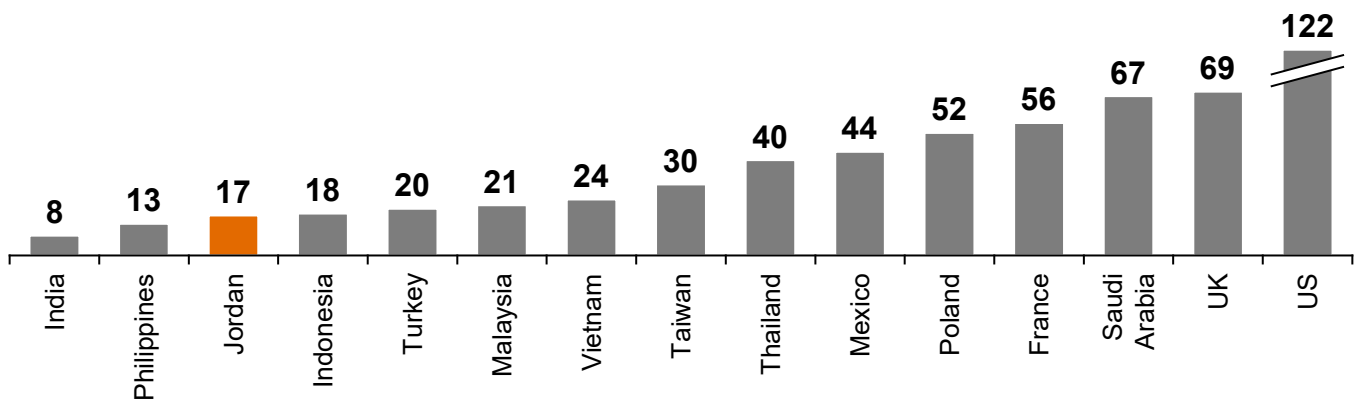
Engineers: Average annual salaries with 0-3 years of experience (k USD)¹



Considering software engineering talent, Jordan remains highly competitive. Only India and the Philippines have lower average salaries for engineers, with Jordanian engineers earning an average of 17k within a year. Other countries specializing in semiconductor backend and design roles can be up to three times more expensive in terms of salary expenditures.

These cost advantages position **Jordan as an attractive option for companies seeking affordable yet skilled talent in the semiconductor industry**. By capitalizing on its cost-effective workforce, Jordan has the potential to foster growth and attract businesses aiming to optimize their talent acquisition strategies.

Software engineers: Average annual salaries with 0-3 years of experience (k USD)¹



The case for foreign direct investment into Jordanian ICT sector

Success stories



Our continued investment is a testament to the talent and infrastructure that the country has to offer.

Ronaldo Mouchawar, VP of Amazon MENA

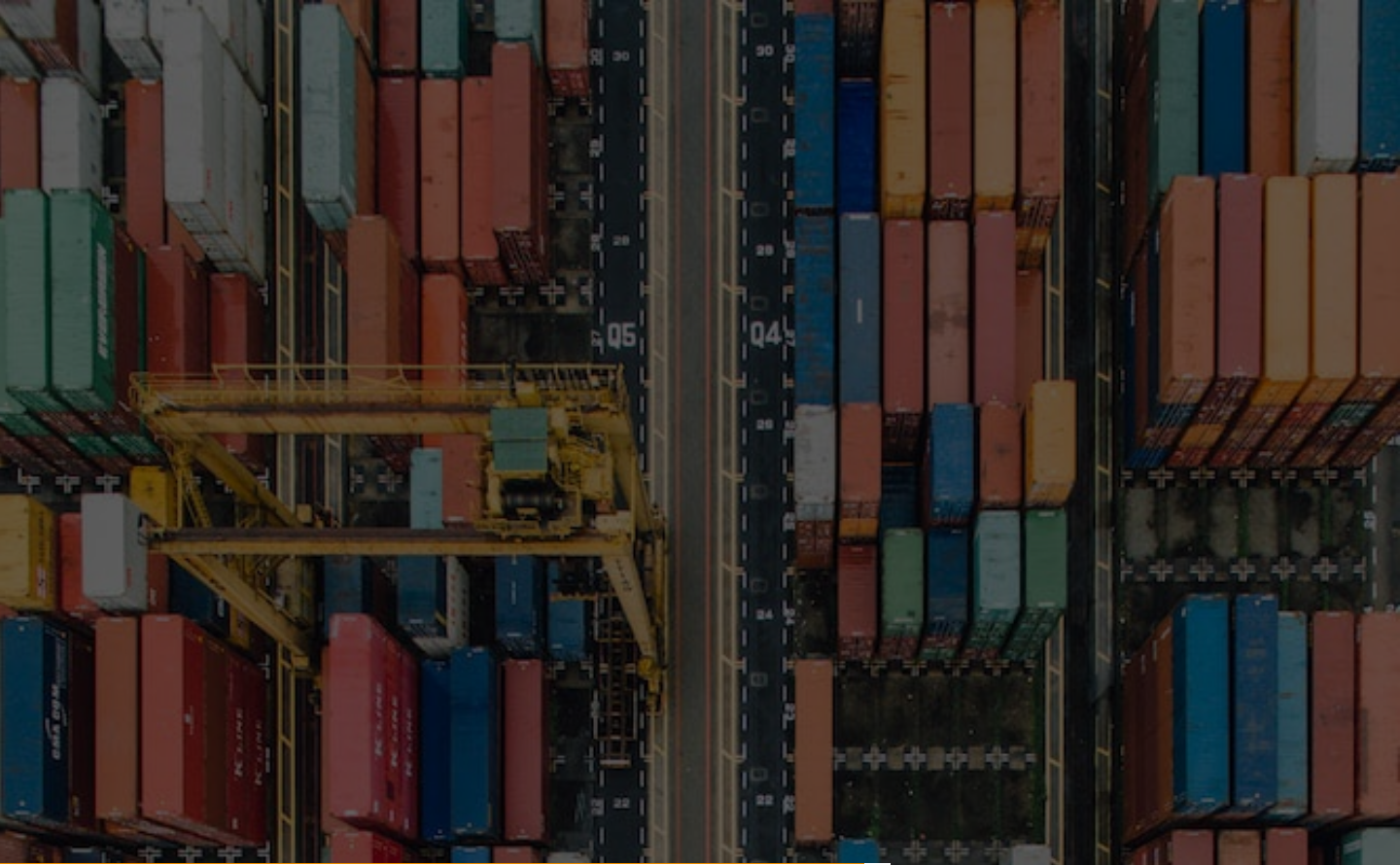
Jordan has a strong reputation for attracting international companies to expand their technical teams in the country. These companies have taken advantage of the readily available and cost-effective talent pool in Jordan.

One notable example is Cisco, which has been working in partnership with a Jordanian firm for 17 years. They operate a technical assistance center and shared services business, employing over 1500 resources, with nearly half of them being female. This workforce provides services to Cisco on a global scale.¹

Microsoft Jordan is another remarkable success story, as they have experienced rapid growth, increasing their number of employees from 10 to over 450 in less than two and a half years.¹ Other prominent companies like Amazon and Juniper have also achieved significant success in Jordan, illustrating the capabilities of the Jordanian workforce particularly in the ICT sector.

International firms with significant ICT investments in Jordan²



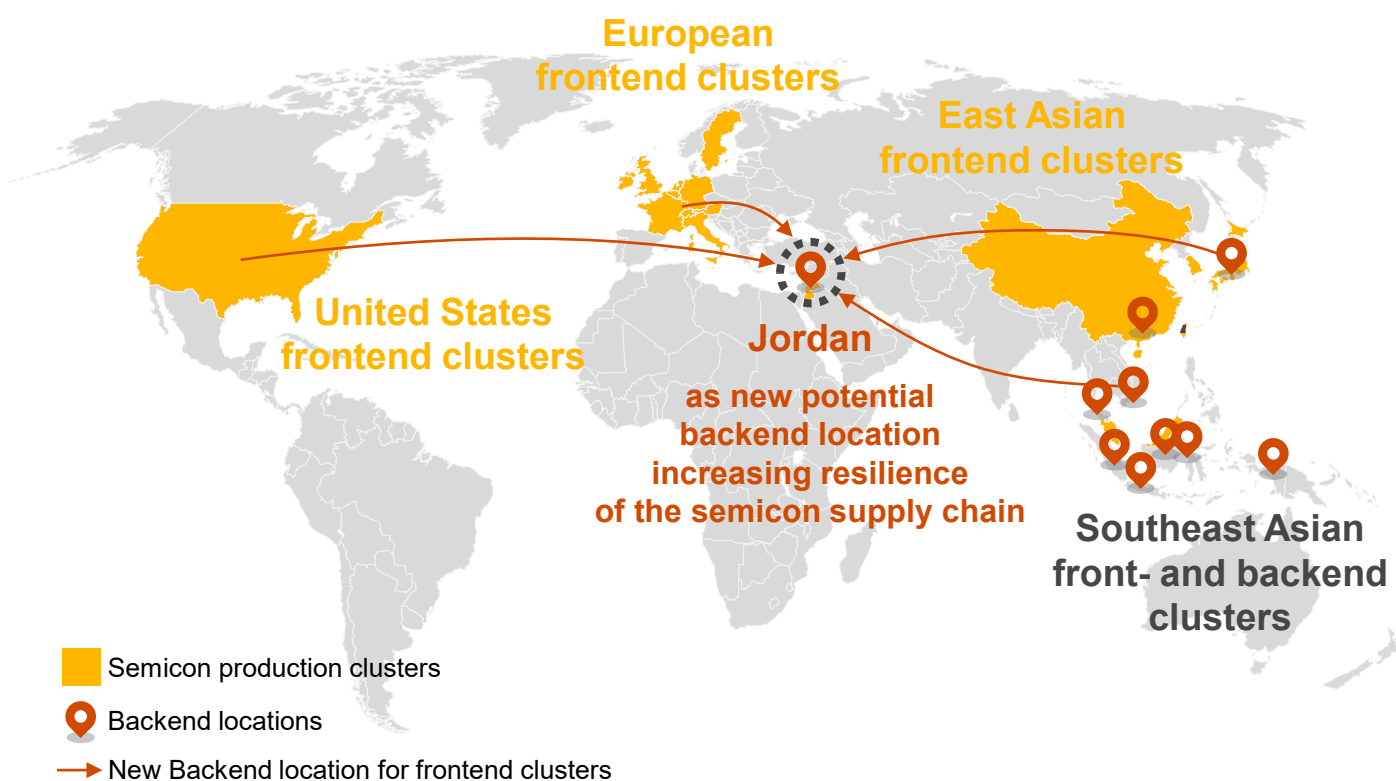


Trade and transport



02

Jordan is an attractive location to diversify backend operations and increase supply chain resilience



While multiple frontend hubs exist across the globe, backend facilities are currently mostly concentrated in Southeast Asia. This is a critical bottleneck in the global semiconductor supply chain. It would be highly advisable to also **diversify backend operations across continents to strengthen the supply chain resilience**. Due to its strategic location close to Europe, Asia, and Africa, Jordan is a promising choice for such operations.

Jordan's strategic geographic location provides several advantages for semiconductor backend manufacturing businesses, also in terms of transportation and export opportunities. With its proximity to European frontend facilities, Jordan is in a favorable position, closer than ASEAN countries that currently handle packaging and testing for wafers fabricated in Taiwan. Moreover, **air freight shipping from Jordan to European countries or the US east coast is 20 to 30% cheaper than from ASEAN countries**. For ocean shipping, the difference is even larger, with a 60 to 90% lower shipping cost.

Jordan has free trade agreements with all major regions



Jordan has multiple free trade agreements¹ that simplify and accelerate the smooth import of components needed for production and enable Jordan export to international markets without customs and taxes. Countries with agreements include several neighboring countries, as well as the US, Canada, Singapore, EU, and the UK after Brexit. This **provides access to a market of 1.6 billion consumers globally.**

Jordan has implemented several policies and initiatives to create a favorable business environment for foreign investors. The country has a liberal trade policy, and a streamlined business registration process, which makes it easier for foreign companies to operate in the country. In January 2022, **Jordan reduced and unified customs tariffs with a further reduction and streamlining scheduled for 2027.**²

Several foreign companies have successfully operated in Jordan for many years, such as Microsoft, Amazon, Juniper, Cisco, Expedia, and others, profiting from the liberal trade policy.

Jordan offers a robust transportation system for goods



Jordan's strategic location in the heart of the Middle East makes it a **gateway for trade between Europe, Asia, and Africa**. Jordan's robust transportation system enables efficient and cost-effective transportation of goods.



Jordan is served by **three main airports**, including Queen Alia International Airport near the capital Amman, which is a major hub offering extensive air cargo services.






In addition to air transport, Jordan benefits from its **strategic access to the Red Sea via its seaport in Aqaba**. The port serves as a crucial link for international maritime trade, providing access to markets in Asia and Europe.



Jordan also offers a well-maintained **network of highways and road infrastructure that connect key cities**, facilitating the movement of goods by land.

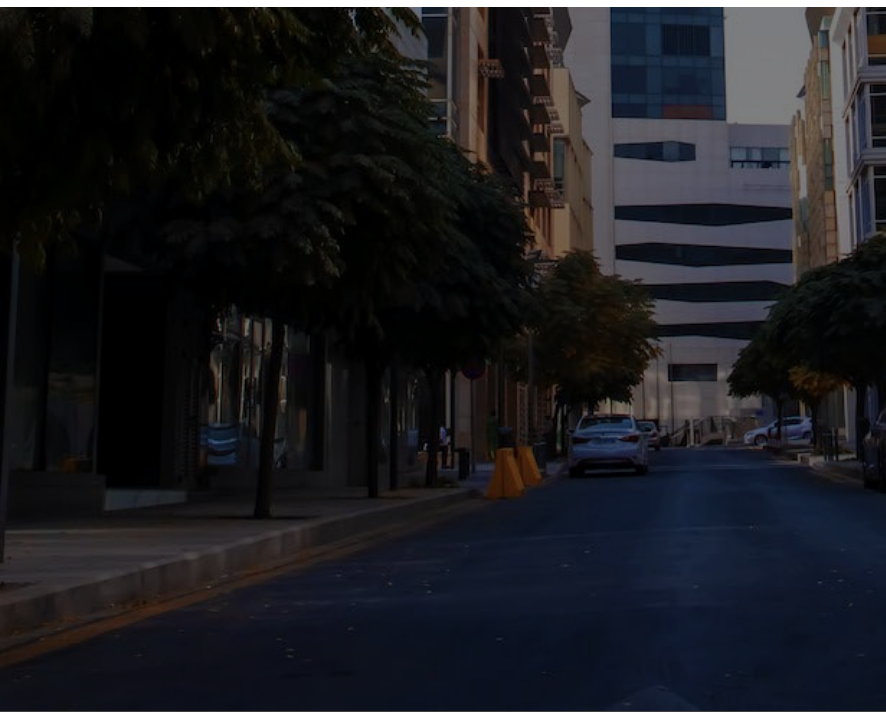


Jordan's rail network plays a vital role in the transportation of goods within the country. The **rail infrastructure connects major industrial areas** and facilitates the efficient movement of goods, providing an additional mode of transportation.

-  Capital
-  Internat. airport
-  Seaport



Business and life



03

Jordan's economic vision perfectly fits with the semiconductor industry

In 2022, Jordan launched the Economic Modernisation Vision, a comprehensive strategy aimed at **unlocking the country's full economic potential**. This visionary approach is **backed by strong political leadership and Royal patronage**, ensuring its commitment and implementation.

One of the primary drivers of this vision is **high-value manufacturing**, with the goal of positioning Jordan as a regional industrial hub by fostering the growth of high-quality, high-value products, such as **packaged semiconductor chips**.

Another primary driver are **future services**, aiming to achieve excellence in service sectors to drive national development and increase service exports on regional and global scales. One example would be **design services for the semiconductor industry**.

Importantly, the vision is aligned with the Sustainable Development Goals of the UN, highlighting **Jordan's commitment to sustainable economic growth and responsible business practices**.



Economic Modernisation Vision

Unleashing potential to build the future



High-Value
Industries



Future Services



SUSTAINABLE
DEVELOPMENT
GOALS



In this era, a country's success hinges upon its ability to swiftly adapt to rapid change, by nurturing creativity, excellence, innovation, and openness to new ideas and international expertise.

His Majesty Abdullah II bin Al-Hussein

A safe business location in the Middle East

Jordan, nestled in the heart of the Middle East, has long been recognized for its strategic location, cultural richness, and political stability. This unique combination, along with its commitment to safety and security, makes it an **ideal destination for businesses seeking a reliable operating environment**, such as the semiconductor industry.

In this chapter, we will explore the various aspects that make Jordan a safe, stable, and attractive choice for international businesses. We will highlight the country's financial stability, Jordan's reliable legal framework, and quality of life aspects. Moreover, we will shed light on the region's remarkable track record of political stability and personal security, which have consistently contributed to Jordan's overall business-friendly atmosphere.

Jordan takes pride in its dedication to maintaining a safe and secure environment for businesses and individuals alike. The government has implemented stringent safety regulations and protocols to ensure the protection of workers, intellectual property, and sensitive information. This commitment not only safeguards the interests of businesses but also fosters an atmosphere of trust, reliability, and longevity.

Key facts at a glance:



Financial stability

Low inflation with stable currency pegged to USD



Safety

16th safest country, very low impact from terrorism



Legal framework

Various attractive tax incentives for investments



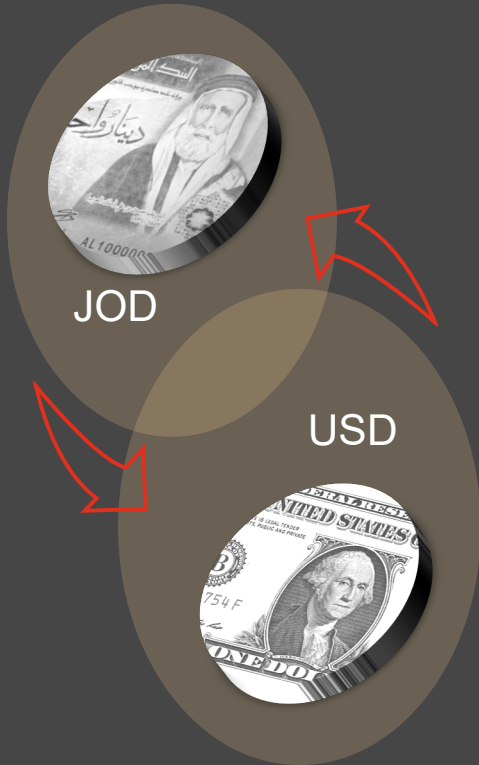
Quality of life

Rich culture, good healthcare and education systems

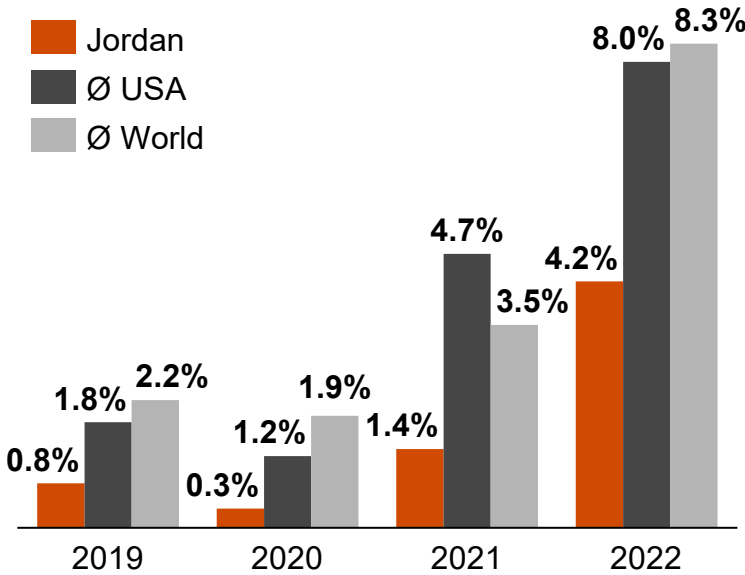
Financial stability through low inflation

Jordan's financial stability is a key factor that makes it an attractive destination for foreign investments. The local currency, **the Jordanian Dinar (JOD), is pegged to the US dollar**, ensuring a fixed exchange rate. This stability eliminates concerns of wild fluctuations and provides a secure environment for businesses to operate without the uncertainty associated with volatile currency markets. Especially for industries requiring high upfront investments and with a global footprint, such as the semiconductor industry, this is beneficial.

Additionally, Jordan maintains a low inflation rate, further indicating a stable economy. In May 2023, the inflation rate in Jordan stood at 1.97%, significantly lower than the 4.00% inflation rate in the US. This **low inflation rate demonstrates the country's commitment to maintaining price stability and fostering a favorable investment climate**. Foreign investors can find confidence in Jordan's financial stability, allowing them to focus on long-term growth and prosperity.



Comparison of inflation rate over time

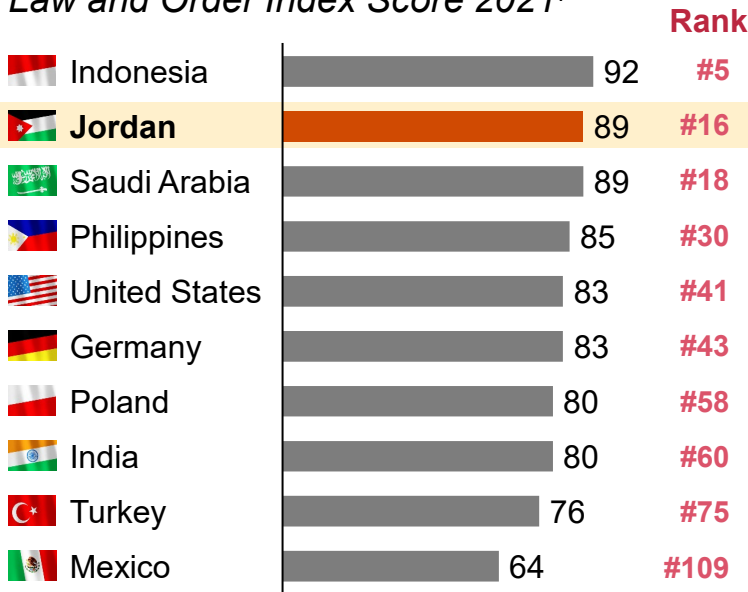


1.97%

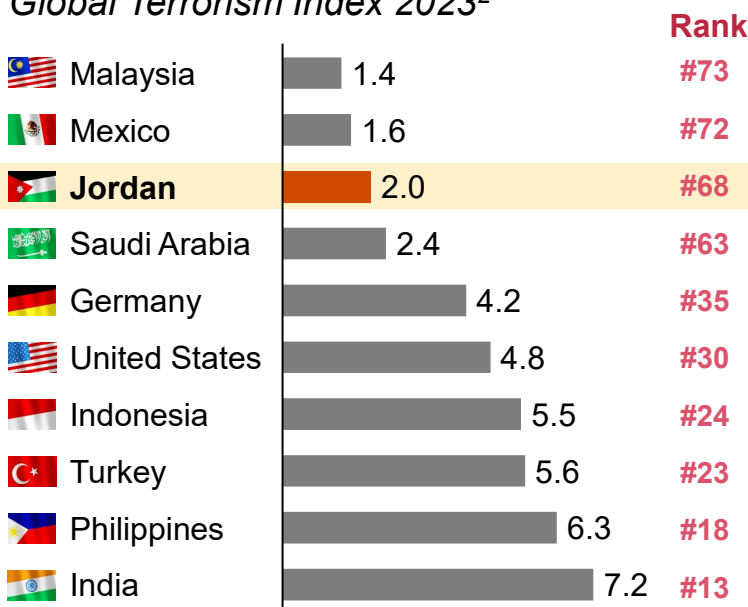
inflation rate in Jordan in **May 2023**, compared to 4.00% in the US

Jordan is seen as the 16th safest country worldwide

Perceived personal security of citizens *Law and Order Index Score 2021¹*



Impact of terrorism *Global Terrorism Index 2023²*



Based on the Law and Order Index Score 2021 of Gallup's Law and Order report, Jordan ranks among the top countries that prioritize the safety and personal security of their citizens. This reflects the confidence and trust that people have in the country's law enforcement agencies and justice system. In the Middle East, Jordan ranks third, and operates on par with the two frontrunners. On a global scale, Jordan secures the 16th position, with a score comparable to countries like Spain, Denmark, the Netherlands, and Sweden. Notably, Jordan even surpasses countries such as the United States (41st) or Germany (43rd)¹.

In the Global Terrorism Index 2023, Jordan was identified as country with low impact of terrorism, significantly lower than its neighboring countries and many nations worldwide, e.g., including the United States and Germany². This score highlights the effectiveness of Jordan's counter-terrorism efforts, its policies and security measures.

Concluding, Jordan shows a **high level of overall security and safety**, contrary to the common conception of the Middle Eastern region.

An effective legal framework fosters business investments

Jordan offers many incentives for investments:

- Investors can be **exempted from customs duties** on fixed assets, production requirements, inputs, and spare parts necessary for their economic activity
- Investors can be subjected to **0% sales tax**, especially possible for **design services**
- **Tax exemptions or reductions on income tax** are available for investors engaged in economic activities with development impact. The income tax reduction will be **no less than 30% for a period of maximum 5 years** from the date of actual operation.
- Investors are eligible for various incentives, benefits, and exemptions for economic activities in any area in the Kingdom, as approved by the Council of Ministers. Incentives may include **exemptions and incentives related to land, energy, water, and infrastructure costs**.



Jordan has established an **effective institutional framework to attract and retain investment**, support export growth and oversee development and free zones.

Jordan's Investment Law specifies several privileges, protections, and guarantees foreign investors enjoy, including:

- Equal treatment and non-discrimination of domestic and foreign investors
- No minimum foreign capital requirements in tech sector
- No restrictions on capital transfers and profit repatriation
- Foreign residents may open accounts in local and foreign currency and may repatriate capital in convertible currency

Possible tax incentives

- 0%** Sales tax
- 0%** Income tax reduction (or more)
- 0%** Custom duties
- 0%** Exports income tax
- 5%** Tax on profit generated in Jordan
- 30%** Income tax reduction (or more)

Labor law and regulations support an attractive environment for workforce and employers in Jordan



Contracts

There are 2 kinds of contracts in Jordan. An indefinite contract has a start date but no end date and does not expire until employment is terminated. A fixed-term contract has a defined start and end date.



Probation Period

Probation period in Jordan is 3 months. Either of the parties of an employment can terminate the employment during a probation period without having the legal liability to provide prior notice or severance pay.



Compensation

The minimum wage rate in Jordan is \$367 per month for workers in all sectors.

There is no mandatory bonus in Jordan however some companies in Jordan offer bonus rate within a range of 4% to 5% of the annual salary. The average annual salary increase in Jordan is around 5%.



Working Hours

The standard normal working hours are 8 hours per day excluding an hour break and 48 hours per week, which can be distributed throughout the week provided that the working day does not exceed 11 hours.

Traditionally, Fridays and Saturdays are the official weekends in Jordan. Overtime is limited to 30 days per year and is paid at a percentage of the employee's wage rate.



Leaves

Every worker is entitled to annual leave with full pay for a period of 14 days for every year of employment. This does not include the bank holidays and rest days, except of course they fall in the leave days. Employees must be given 21 days of annual paid leave after they have worked for 5 years in the company.



Termination/Severance

Employers and employees have equal right to terminate contracts of employment, with or without notice, provided the termination is in accordance with the procedures prescribed by law. According to the law, an employee will be entitled to a minimum of a month of advance notice and a severance pay in case of contract termination. If the termination is initiated by the employee, then the employer will be entitled to a minimum of one-month notice and an indemnity.



Maternity Leave

A female employee is entitled to 10 weeks of paid maternity leave which is covered by the social security. At least 6 weeks of leave must be taken after delivery. She is also entitled to 12 months of unpaid leave for childcare reasons. After maternity leave ends, the employer should provide the new mother an additional one-hour break for one year to nurse her child. Male employees receive up to three days of paid paternity leave.



Sick Leave & Flexible Hours

1. Employees are entitled to 14 days of paid sick leave per year. In general, sick leave requires a medical certificate from a physician. Employees receive an additional 14 days of sick leave at full pay if hospitalized or half of the employees pay if not hospitalized but supported by a medical report.
2. Jordan enforced a regulation (Regulation No. 22 of 2017) which introduces flexible working arrangements for certain categories of employees and gives the option for workers to work remotely.



Social Security & Private Health Insurance

A monthly deduction is taken from the salaries of all employees in Jordan – the social security rates are 14.25% and 7.5% contributed by the employer and employee, respectively.

Social security benefits include maternity insurance, insurance against unemployment, medical care as well as old-age, disability and death pension.

The private sector is not obliged to cover employees under health insurance, however, there are many insurance options available that the private sector is benefiting from as part of improving the overall employee experience, compensation, and benefits.

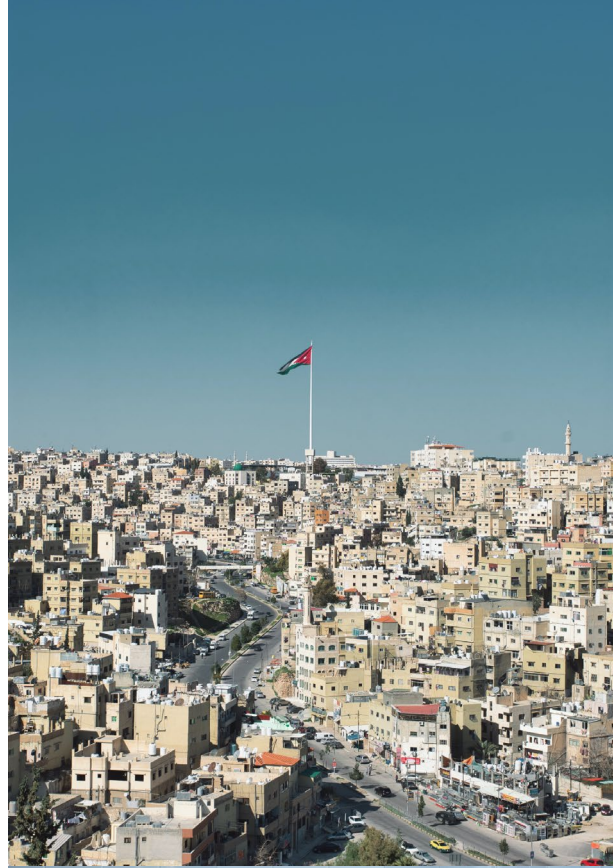
Jordan is known for its good healthcare and education system

Jordan has a **comparatively low cost of living** in the global environment. More specifically, Jordan ranks 101st out of 176 economies for expensiveness of household consumption. Within the Middle East and North Africa (MENA) region, Jordan ranks 7th out of 12 countries¹.

The regional climate encompasses Mediterranean and desert characteristics with four seasons. The overall climate is predominantly arid, with limited rainfall and dry conditions. Depending on the region, temperatures range between 9-22°C during winter months and 26-39 °C in summer.

The healthcare system in Jordan is advanced with many private and public hospitals and a large and increasing internationally qualified workforce. **The World Bank has recognized Jordan as the leading healthcare service provider and a premier destination for medical tourism in the MENA region.** Prior to the impact of COVID-19, Jordan welcomed up to 250,000 foreign patients annually, generating over \$1 billion in yearly revenue. The country's appeal lies in its ability to offer **efficient and high-quality medical care at an affordable price**, resulting in minimal waiting times for a wide range of treatments, including cardiac diseases, oncology, infertility, and cosmetic surgery².

Jordan also has **diverse private international schools teaching different global curriculums with high quality**, including the American Community School and the International Baccalaureate schools, among others. Jordan has one of the fastest-growing education sectors in the Middle East with 10 public and 17 private universities, as well as 51 community colleges².



The quality of life is enriched through a variety of leisure activities



Jordan offers lots of things to do and explore. **The capital, Amman, offers a vibrant nightlife scene with clubs, pubs, and relaxed cafes,** accompanied by DJs, providing entertainment for both tourists and locals.

Beyond the capital, visitors can discover beachside bars and authentic cafes that stay open until sunset. Festivals play a significant role in Jordan's culture, encompassing various forms of art, theater, dance, and food. These annual events serve as platforms for locals and tourists to come together and engage in diverse ways.

Jordan is also home to several significant cultural sites that showcase its rich history and heritage. One of the most renowned is Petra, a UNESCO World Heritage site and one of the New Seven Wonders of the World. Another iconic site is the Roman city of Jerash, boasting well-preserved ruins of temples, theaters, and colonnaded streets. The Dead Sea, with its unique salt-rich waters, offers a surreal experience where visitors can float effortlessly while taking in the breathtaking surrounding landscapes.



Electricity and
infrastructure

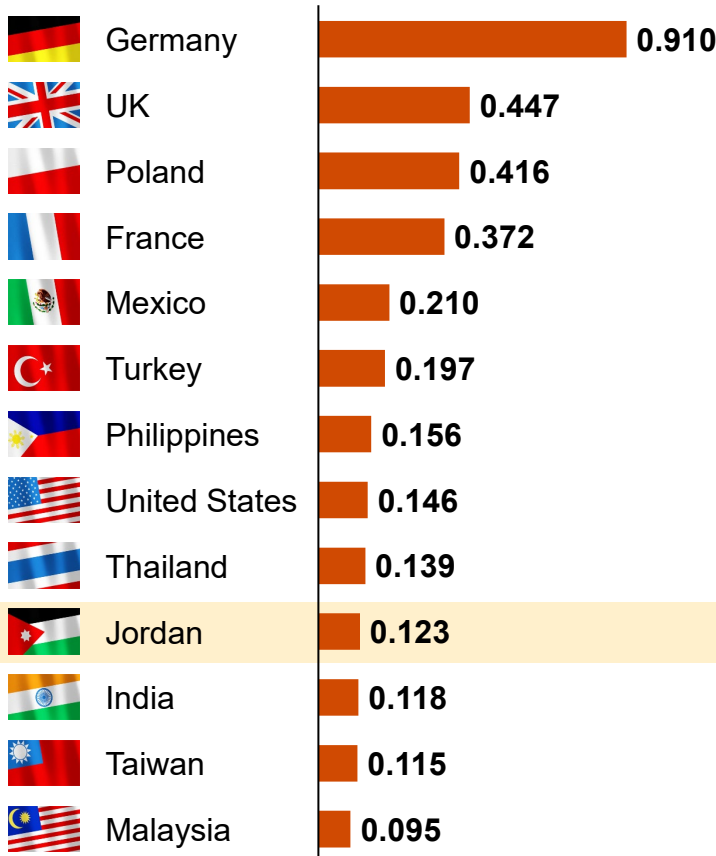
04

The electricity supply is cost-competitive and stable

Electricity plays a critical role in semiconductor packaging and testing, impacting the cost structure and operational efficiency. As the level of automation in fabs increases, the shift in production costs from labor to energy increases.

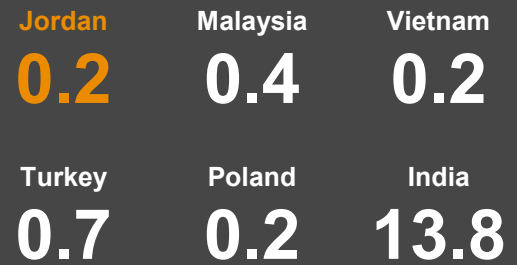
In this regard, Jordan's industrial electricity rates are deemed competitive when compared to other countries hosting existing semiconductor facilities or are considered for them.

Electricity prices for business, September 2022 (USD / kWh)¹



With an energy price of 0.12 USD/kWh in 2022, Jordan is comparable to Asian countries, remaining largely unaffected by the global energy crisis. It also outperforms many European countries in terms of energy cost competitiveness.

Power outages in firms in a typical month (number)²



Furthermore, stability of electricity supply is an important factor for semiconductor facilities that operate 24/7, 365 days a year. Jordan boasts a commendable level of energy stability, as indicated by the World Bank. With an average of 0.2 power outages in a typical month, Jordan is comparable to other countries relevant to semiconductor packaging or certain Eastern European regions.

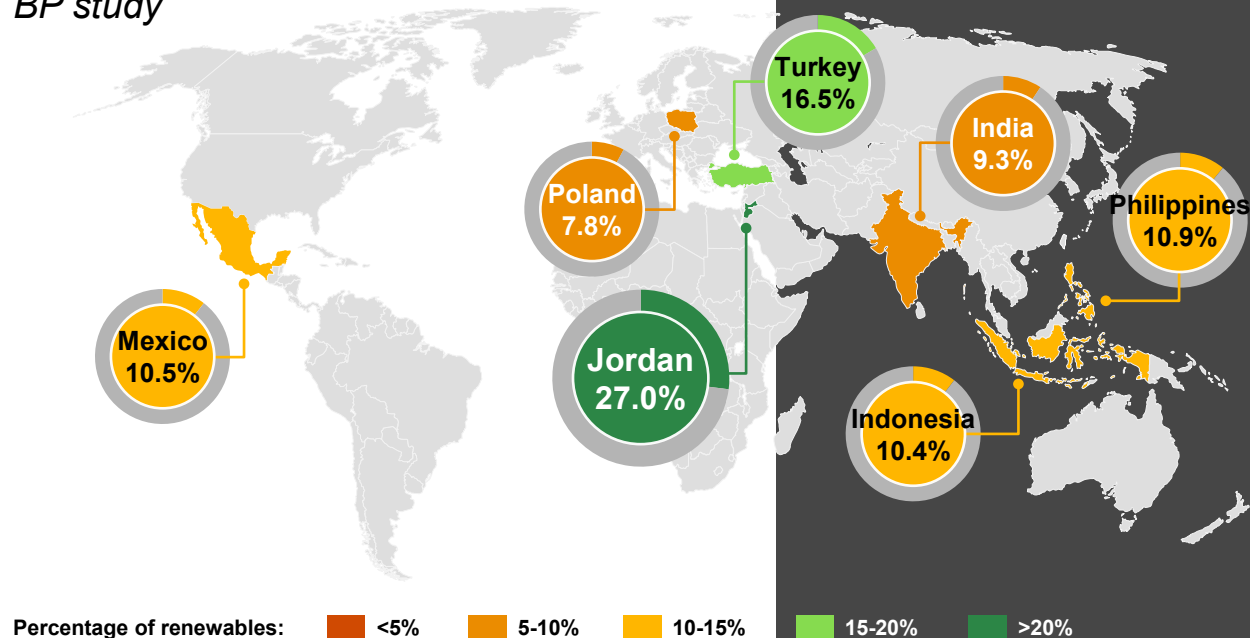
Considering both cost-competitiveness and stability, Jordan presents itself as an attractive location for reliable and affordable electricity.

Already today, 27% of the energy supply is from renewables

Around 27% of Jordan's electricity comes from renewable sources, which is the highest share in the region. The Ministry of Energy and Mineral Resources has established a solid foundation for renewables through legislation and procedures **aiming to achieve a renewable share of 50% in 2030**. Jordan is one of the countries with the highest efficiency for solar energy and an increasing share of solar power, making up 16% of the total energy mix. This makes Jordan a **reliable partner for industry leaders committed to net zero emissions**.

The Jordanian electrical system has been enhanced to meet growing demands and incorporate new power plants. Connections with neighboring countries have been completed, and interconnection lines have been upgraded. The Green Corridor Project has boosted transmission capacity from 500 MW to 1,400 MW, allowing electricity to be efficiently distributed from the south to the center of the country.

Share of renewables in electricity mix *BP study*



The Jordan Renewable Energy and Energy Efficiency Fund has successfully improved renewable energy usage and reduced electricity costs for indigent families. The government has approved the National Energy Efficiency Action Plan (NEEAP) for 2018-2020, with a goal of achieving a 20% reduction in energy consumption by 2020.

To increase competitiveness, save emissions, and reduce costs, the government also encourages industries to switch from fuel to natural gas. A reliable supply is ensured by the new LNG import project.

The digital infrastructure is a strong basis for business operations

Jordan's telecom providers have established **strong partnerships with European vendors** to upgrade their networks, including 2G, 3G, and 4G, and to build the cutting-edge 5G network. With a remarkable mobile coverage of 98%, Jordan ensures connectivity throughout the nation.

The resilience of Jordan's digital infrastructure was evident during the COVID-19 pandemic. As the **entire educational system shifted online and companies adopted remote work setups, the digital infrastructure seamlessly supported the surge in demand.**

Recognizing the importance of data centers, Jordan has established eight high performance Tier 3 data centers and one Tier 3 disaster recovery site. These facilities offer **secure and efficient storage and management of digital assets**, ensuring businesses can rely on stable operations.

Furthermore, Jordan's strategic location has attracted the presence of many **international submarine cables**. Notably, the country serves as the convergence point for Google's Blue Raman cable, linking Asia, Europe, and Africa.

In summary, **Jordan offers an established and resilient digital infrastructure that international companies can leverage when starting business operations in the country.**

Key facts at a glance:



Resilient digital infrastructure



98% mobile coverage



5G network in construction



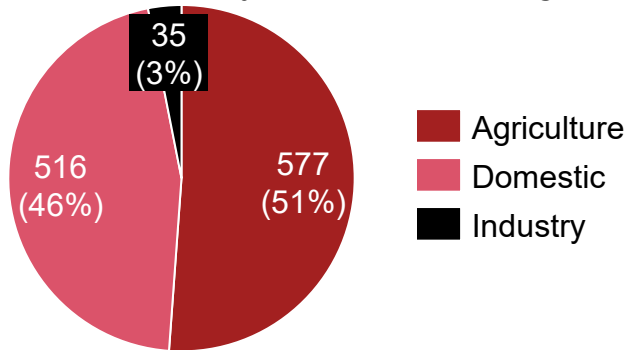
Eight Tier 3 datacenters



Connection to many international submarine cables

Jordan is investing strongly to improve its water supply

Jordan's water usage in 2020 in M m³
Jordan Ministry of Water and Irrigation¹



Jordan applies innovative water management strategies to improve water supply



Dams and reservoirs



Efficient irrigation



Wastewater treatment



Sea water desalination

The Aqaba-Amman Water Desalination & Conveyance Project will significantly improve Jordan's water supply situation²



USD 3 B

+300 M m³ desalinated Red Sea water from 2027

Jordan faces significant water scarcity due to its arid climate and limited natural water sources. However, the nation has implemented innovative water management strategies to address this challenge. Jordan invested in water infrastructure projects, such as dams and reservoirs, to capture and store rainfall runoff for agricultural and domestic use. Additionally, the country has adopted efficient irrigation techniques and water conservation measures to optimize water usage in agriculture, the largest consumer of water resources.¹ Jordan also places great emphasis on desalination and wastewater treatment technologies to augment its water supply.

Noteworthy, Jordan is currently in the final phase of tendering the Aqaba-Amman Water Desalination & Conveyance Project (AAWDCP). It is expected to start operation in 2027 and deliver the country with 300 million m³ of desalinated Red Sea water per year², equivalent to 27% of the country's water usage in 2020. This will **secure the water supply and increase its resilience, even with a growing water demand.**

Sources: 1) Jordan Water Sector Facts and Figures 2020, Jordan Ministry of Water and Irrigation;

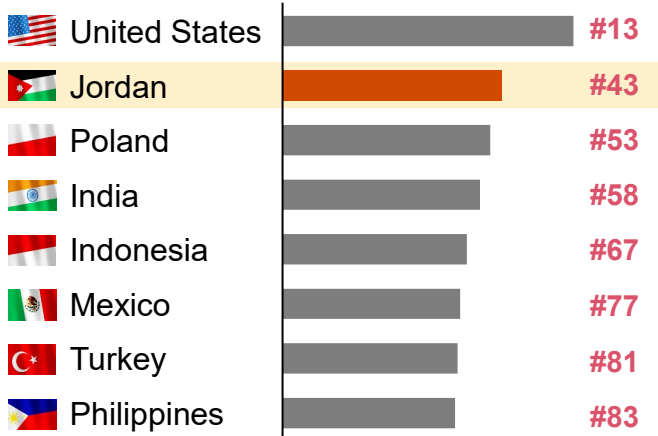
2) AAWDCP Project Fact Sheet for COP27, United Nations Economic and Social Commission for Western Asia (UNESCWA)

IP rights protection

05

Jordan has a track record to protect intellectual property rights of international companies

Strength of IP protection by country *Int. Property Rights Index 2022¹*



Jordan has multiple government agencies and specialized courts enforcing intellectual property rights (IPR) laws and regulations. Jordan's courts have jurisdiction over all intellectual property (IP) disputes, including copyright, trademark, patent, and industrial design infringement cases. The courts have a good track record of upholding IPR and have issued a number of rulings in favor of IP owners. In one recent case, the Court of Appeals upheld a lower court's ruling that a

Jordanian company had infringed on the copyright of a British company. The Court of Appeals ordered the Jordanian company to pay damages to the British company and to stop selling the infringing software.

Jordan works closely with international organizations and other countries to promote IPR protection and enforcement.

The country is a member of the World Trade Organization (WTO) and the World Intellectual Property Organization (WIPO). Jordan participates in several international agreements and initiatives related to IPR, such as the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and the WIPO Development Agenda.

Jordan has passed several laws in compliance with international IPR protection which includes trade secrets and semiconductor chip designs. Furthermore, the Jordanian government has established several programs to promote IPR awareness and education.

Conclusion

In light of the changing global landscape, there is a growing recognition of the importance of diversifying trusted partners and **establishing resilient supply chains**. Jordan emerges as a **reliable partner**, particularly for **semiconductor backend operations and design services**. Jordan is a competitive destination for such activities due to the following factors:

- **Availability and quality of talent:** Jordan offers access to a large pool of talented engineers that can be upskilled to cover a wide range of semiconductor-related roles.
- **Cost efficiency:** Jordan is a cost-effective destination for semiconductor packaging and testing. The country's labor costs are lower than in many other countries and the same applies for electricity costs.
- **Geopolitical stability:** Jordan is a stable and secure country with a long history of cooperation with the United States, Europe, and Japan. This makes it an attractive destination for semiconductor companies that are looking for a reliable and secure partner where they can diversify their operations.
- **Resilient infrastructure:** Jordan has a well-developed infrastructure that is capable of supporting the needs of the semiconductor industry. The country has a reliable power grid which already is 27% renewable giving the opportunity to companies focused on reaching the net-zero target by 2050. Jordan also has a well-maintained transportation network, and a modern telecommunications system that has been tested during global emergencies like the pandemic and showed excellent resilience.
- **Geographical proximity to fabrication sites:** Jordan is located close to semiconductor frontend fabrication sites in Europe, US and Asia, which makes it a convenient location for backend packaging and testing facilities. This proximity also allows for easy collaboration between design and manufacturing teams.
- **Safety and security:** Jordan is seen as the 16th safest country globally. This makes it an attractive destination for semiconductor companies that are looking for a secure location to improve their operations and supply chain resilience.

To conclude, **Jordan is a competitive destination for semiconductor design services and backend packaging and testing facilities**. The country offers a number of advantages, including a skilled workforce, government incentives, a stable political environment, a resilient infrastructure, low costs, and a strategic location.

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Thank you

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