



منتدى الاستراتيجيات الأردني
JORDAN STRATEGY FORUM

**The “World Creativity & Innovation Day”:
The Underlying Challenge Facing Jordan
April 2023**



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The Jordan Strategy Forum (JSF) is a not-for-profit organization, which represents a group of Jordanian private sector companies that are active in corporate and social responsibility (CSR) and in promoting Jordan's economic growth. JSF's members are active private sector institutions, who demonstrate a genuine will to be part of a dialogue on economic and social issues that concern Jordanian citizens. The Jordan Strategy Forum promotes a strong Jordanian private sector that is profitable, employs Jordanians, pays taxes and supports comprehensive economic growth in Jordan.

The JSF also offers a rare opportunity and space for the private sector to have evidence-based debate with the public sector and decision-makers with the aim to increase awareness, strengthening the future of the Jordanian economy and applying best practices.

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- @JSFJordan
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- Jordan Strategy Forum

Amman, Jordan
T: +962 6 566 6476
F: +962 6 566 6376

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1. Background:

The United Nations (UN) designates specific days as **“international days”**. These celebratory dates are “occasions to educate the general public on issues of concern, to mobilize political will and resources to address global problems, and to celebrate and reinforce achievements of humanity”.

On April 21st, the UN celebrates the “World Creativity and Innovation Day”.

This international day should be remembered and celebrated for a number of reasons. Indeed, creativity and innovation have many positive implications.

- 1. At the micro level**, innovation improves productivity, reduces costs, improves brand recognition, increases competitiveness, creates jobs with above-average salaries, and increases sales and profits.
- 2. At the macro level**, basic economic sense asserts that innovation leads to higher productivity, and as productivity rises, more goods and services are produced, and hence, economies grow.

In addition, and as stated by the World Bank, **“understanding how to promote innovation in developing countries is more important than ever, given the new wave of digitalization and automation that is rapidly altering economies around the world”**.

Relative to this year’s World Creativity and Innovation Day, it is useful to refer to two recent publications.

1. On the 29th of September 2022, the World Intellectual Property Rights Organization (WIPO) launched the 2022 **“Global Innovation Index”**. This Index provides a measure of the innovation performance of 32 economies across the globe.
2. His Majesty King Abdullah II launched the **“Economic Modernization Vision” in June 2022**. In its rationales and motives section, it is stated that Jordan’s performance on the available international / global indices “ranges between average and above average in some of them, which is a testament to the country’s successes and a strong foundation for which new achievements can be built upon”. It is also stated that **“areas of improvement include the Global Innovation Index”**.

Relative to the above, the primary objective of this **“Policy Paper”**, published by the Jordan Strategy Form (JSF) on the occasion of this year’s “World Creativity and Innovation Day”, is to shed some light on where Jordan stands on the Global Innovation Index. Naturally, the overall objective is to recommend to the relevant stakeholders (public and private) what to concentrate consider to enhance Jordan’s standing on the Global Innovation Index. This Policy Paper is composed of 5 sections: **1. Background. 2. Creativity, Invention, and**

Innovation: The Concepts. **3.** The Global Innovation Index: Where Does Jordan Stand? **4.** The Policy Implications.

2. Creativity, Invention, and Innovation: The Concepts

Creativity, invention, and innovation are characteristics that people try to develop to help them look at the world in new and different ways.

Creativity is an expression of an idea or a concept that no one has thought of before. Creativity has no real value unless one transfers it into reality.

Invention is a creative idea which is developed into something that society can use. An invention can simply be a process, method, or a device.

Innovation takes a creative idea and an invention and exploits their benefits for commercial and other objectives.

As far as innovation per se is concerned, one can single-out four main types:

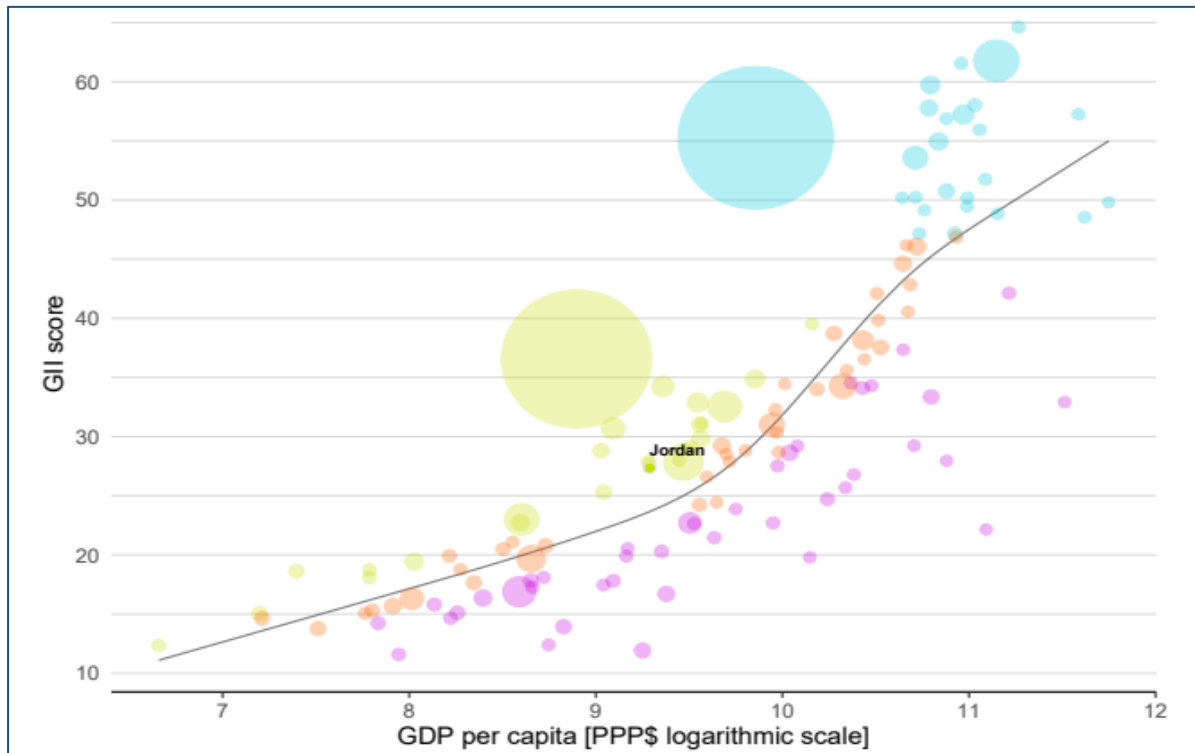
- 1. A process innovation** is the “implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software” (Eurostat). A good example is Henry Ford’s invention of the world’s first moving assembly line.
- 2. A product innovation** is the “introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses” (Eurostat). A good example here is penicillin.
- 3. A marketing innovation** is the “implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing” (Eurostat). A good example here is Instagram which is a platform for brands to showcase their products.
- 4. An organizational innovation** is the “implementation of an organizational method (in business practices, workplace organization or external relations) that has not been used before in the firm and is the result of strategic decisions taken by management” (Eurostat). A good example here are the first companies that allowed some of their employees to work from home while using the power of digital.

Within the context of the above-mentioned four types of innovation, it is useful to note that different innovations can have different impacts.

- 1. Incremental Innovation:** This innovation uses existing technologies within an existing market. A good example is the smartphone market where innovation is largely done in the updating of the hardware, improving the design, or adding new and more efficient features.
- 2. Disruptive Innovation:** This innovation applies new technologies or processes to existing industries. A good example here is Amazon which uses internet-technologies to “disrupt” the existing book-shop industry.
- 3. Architectural Innovation:** This innovation applies to existing establishments that take their expertise, technology, and skills and apply them to different markets. A good example here is Amazon which uses its existing expertise to offer new services and products for different markets / fields.
- 4. Radical Innovation:** This innovation involves the opening up of entirely new markets. A good example, here is the innovation of the airplane.

3. The Global Innovation Index: Where Does Jordan Stand?

The Global Innovation Index (GII) is jointly published by Cornell University, INSEAD Business School, and the World Intellectual Property Organization (a specialized agency of the United Nations). This Index ranks many economies across the globe according to their innovation capabilities. Indeed, and over time, the GII has become a framework for governments and the private sector to use in evaluating their economies' performance in innovation, and in reflecting on the existing status quo.



The GII is composed of two sub-indices:

- 1. The Innovation Input Sub-Index:** This sub-index has five pillars that capture the elements of the national economy that enable innovative activities. Each of these five pillars are divided into three sub-pillars. Naturally, each sub-pillar has its own indicators.

The Innovation Input Sub-Index:				
Institutions	Human Capital & Research	Infrastructure	Market Sophistication	Business Sophistication
Political Environment	Education	ICTs	Credit	Knowledge Workers
Regulatory Environment	Tertiary Education	General Infrastructure	Investment	Innovation Linkages
Business Environment	Research & Development	Ecological Sustainability	Trade, Competition, & Market Scale	Knowledge Absorption

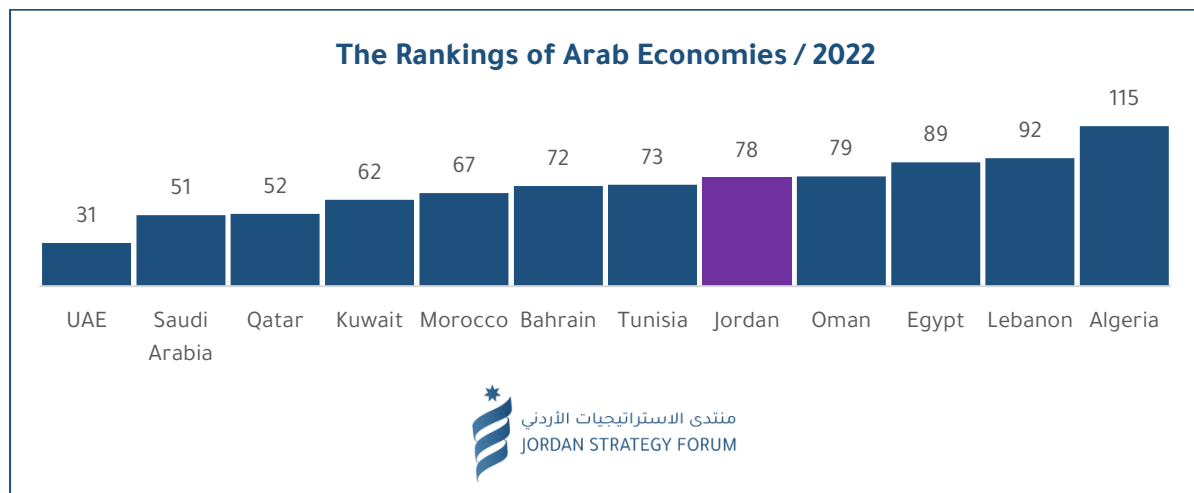
- 2. The Innovation Output Sub-Index:** This sub-index has two pillars that capture the results of innovative activities within the economy. Each of these pillars is divided into three sub-pillars. Naturally, each sub-pillar has its own indicators.

The Innovation Output Sub-Index	
Knowledge & Technology Outputs	Creative Outputs
Knowledge Creation	Intangible Assets
Knowledge Impact	Creative Goods & Services
Knowledge Diffusion	Online Creativity

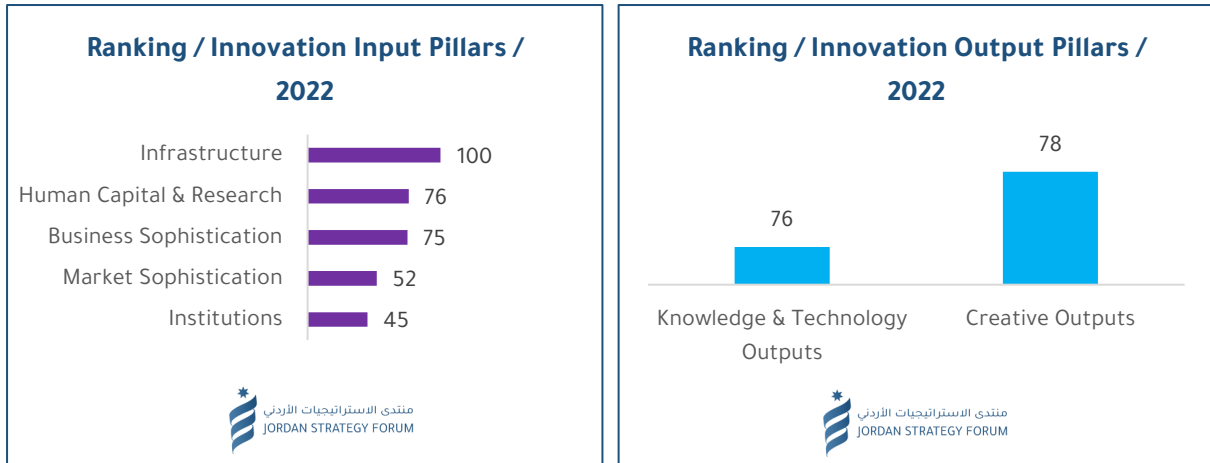
Based on the 2022 Global Innovation Index, we outline below the following observations:

The top five innovative countries are Switzerland, United States, Sweden, United Kingdom, and the Netherlands. The bottom five economies are Yemen, Mauritania, Burundi, Iraq, and Guinea.

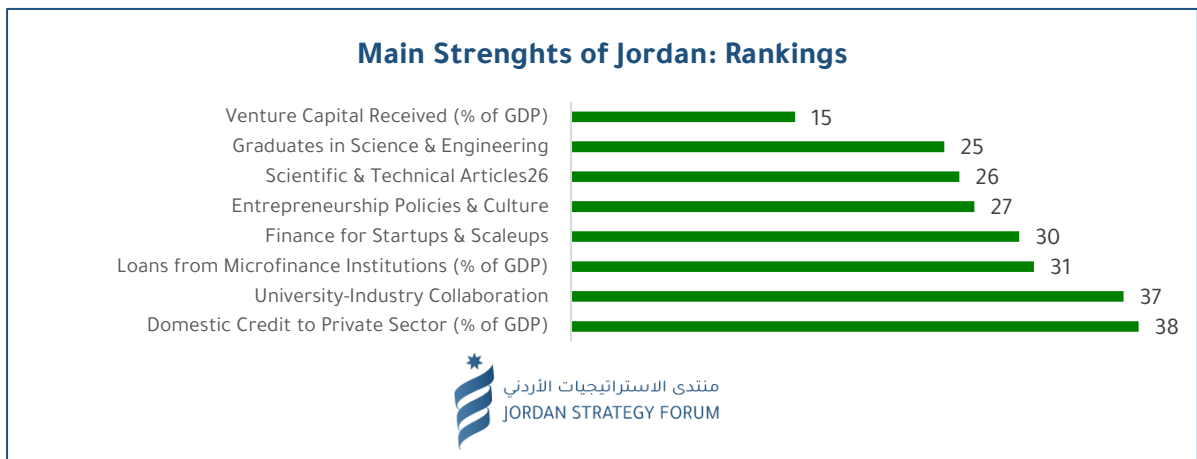
The top Arab country is the United Arab Emirates (UAE). One should admit that the rank of Jordan (78th) is poor. Jordan is among the weakest, relative to the rest of the Arab world.



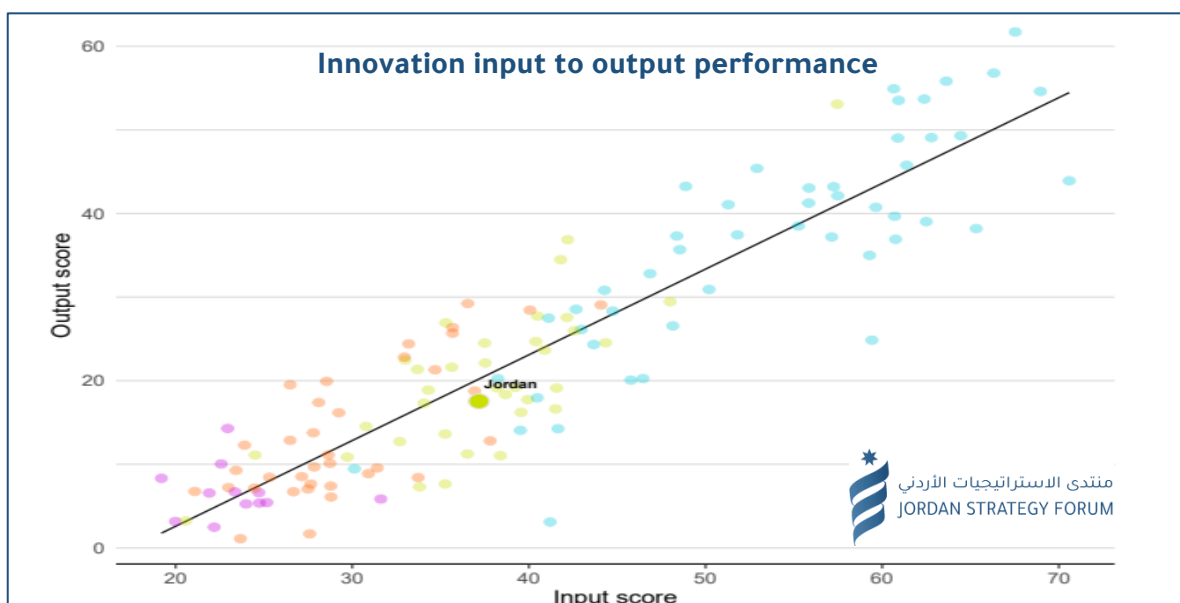
- 3.** Jordan performs better in “institutions” and “market sophistication”. However, while in “human capital”, and “business sophistication”, the rankings are poor, the rank in “infrastructure” is very poor. In the innovation output sub-indices’ pillars, Jordan’s rankings are also poor.



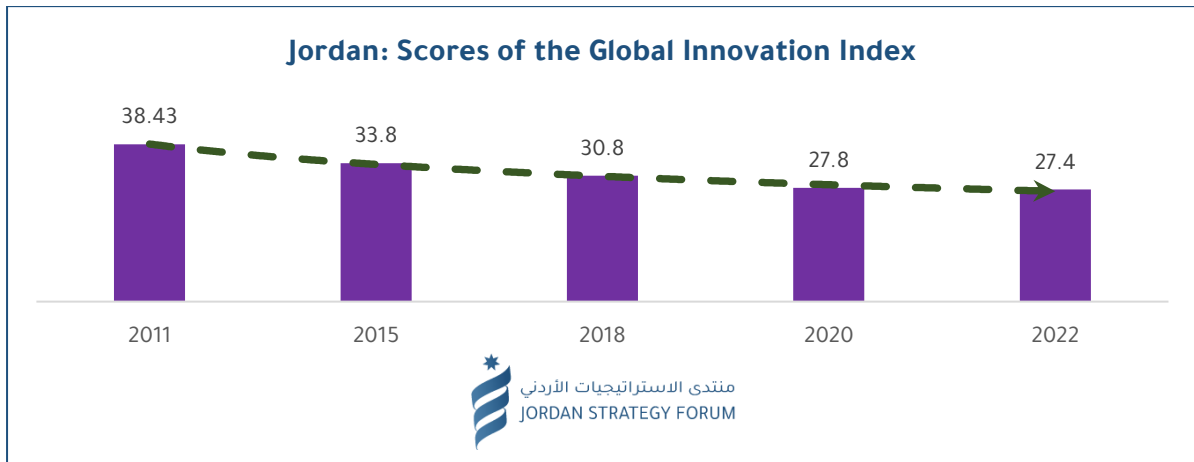
4. Jordan performs well in some of the indicators of the innovation input sub-index and output sub-index. For example, the ranks of Jordan in venture capital received (% of GDP) 15th. In graduates in science and engineering 25th.



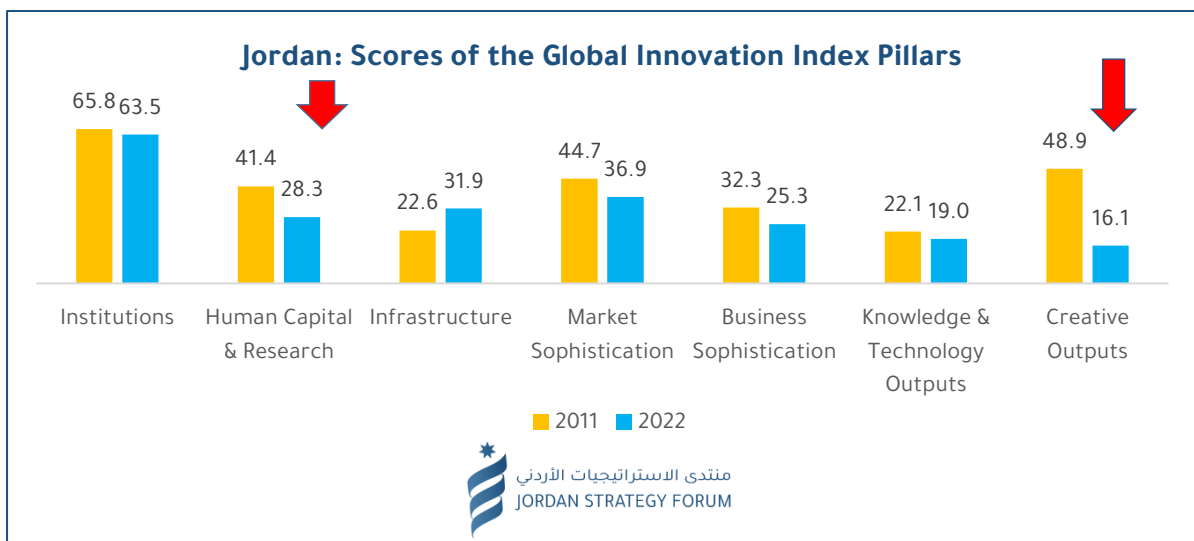
5. Jordan produces less innovation outputs relative to its level of innovation investments.



6. Over time, Jordan scores in the Index have been getting lower. As a result, in 2011, the rank of Jordan was **61 out of 142 economies**. In 2022, the rank of Jordan is **78 out of 132 economies**.



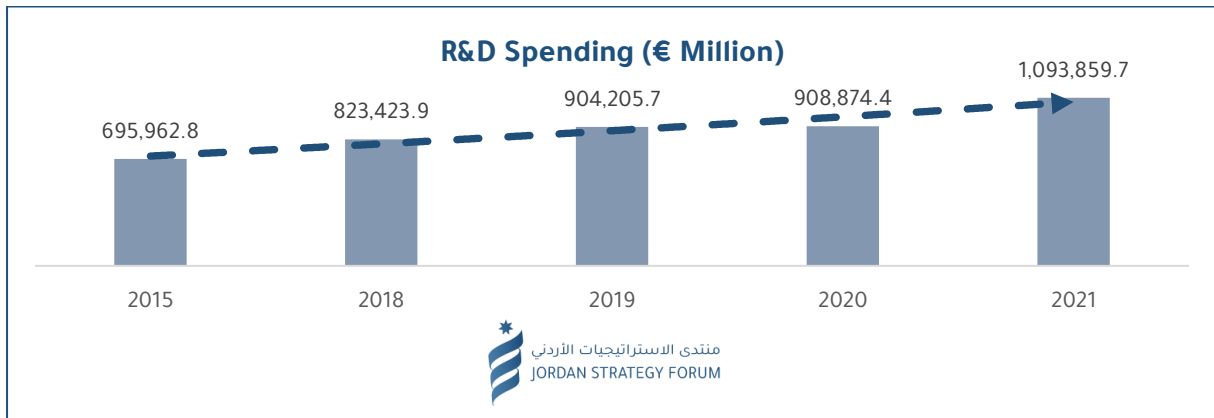
7. The main reasons behind the deterioration in Jordan scores (and ranking) are the scores of 2 pillars: Human Capital and Research and Creative Outputs.



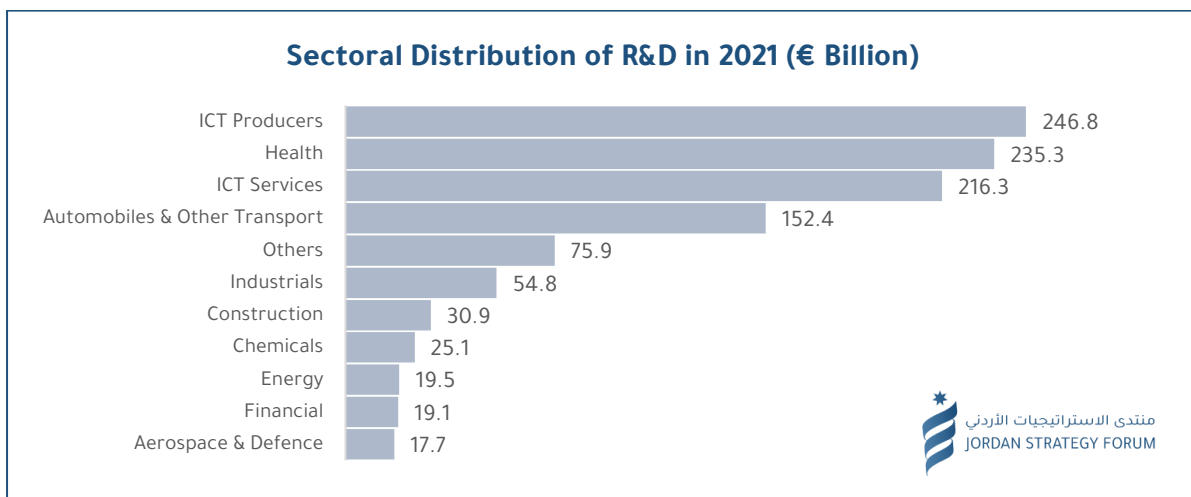
In addition to the above-mentioned observations about the relative performance of Jordan in the Global Innovation Index, we outline below a few observations about global R&D activities. The implicit objective of these observations is to show the financial size of this activity.

The 2022 EU Industrial R&D Investment Scoreboard was published on 13th of December 2022. This Scoreboard reports on **how much the top 2,500 companies in the world spend R&D**. Below, we outline several observations.

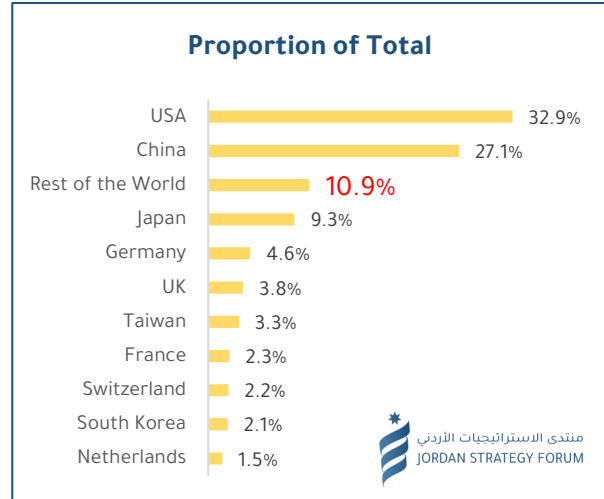
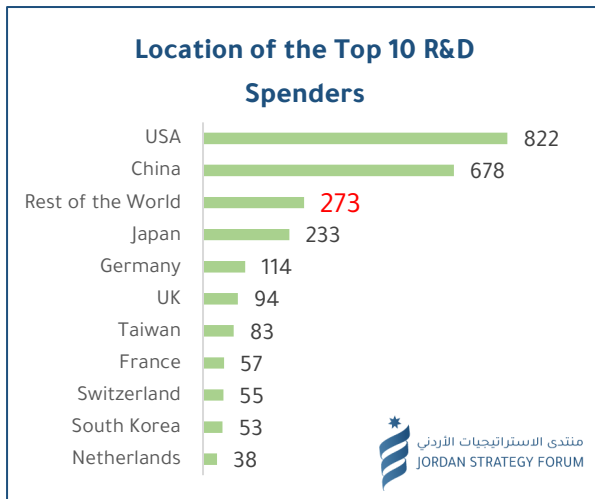
1. The total amount spent on R&D across all 2,500 companies was equal to **€1.094 trillion**. This amount is “equivalent to 86% of the world’s business-funded R&D”.



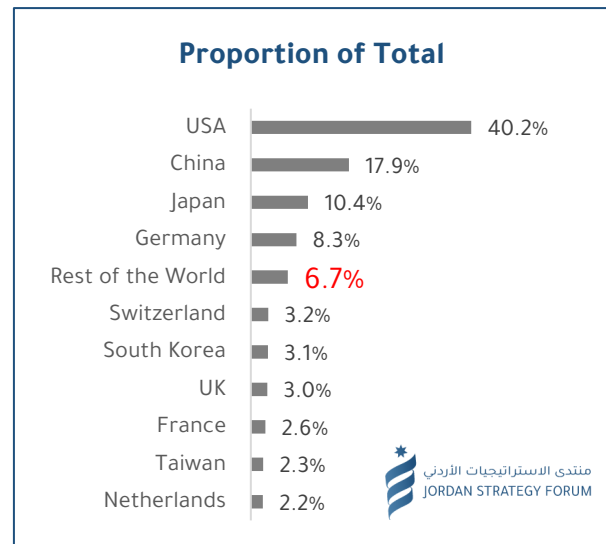
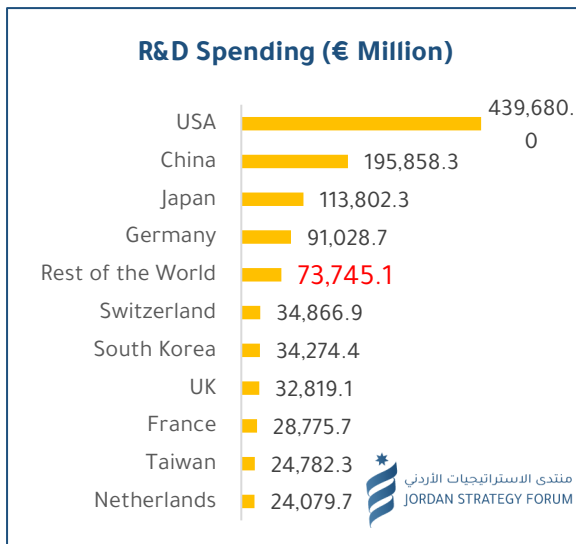
2. In terms of the sectoral distribution of R&D, the ICT producers attracted the largest amount (€ 246.8 billion). The health sector and ICT services come in 2nd and 3rd respectively.



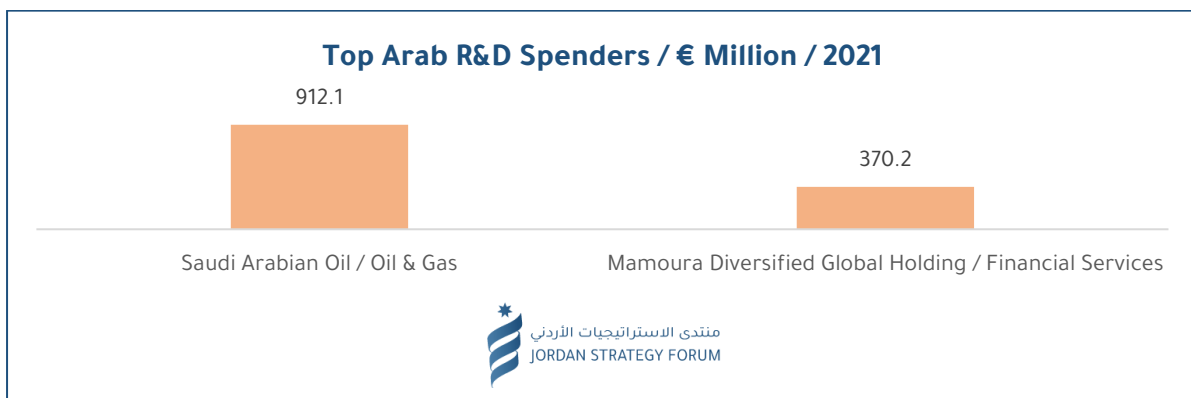
3. American and Chinese companies are dominant. Together, their 1,500 (822 + 678) account for 60.0% of the total number of 2,500 highest spending companies on R&D. The rest of the world has only 273 companies included in the top 2,500 companies (10.9%).



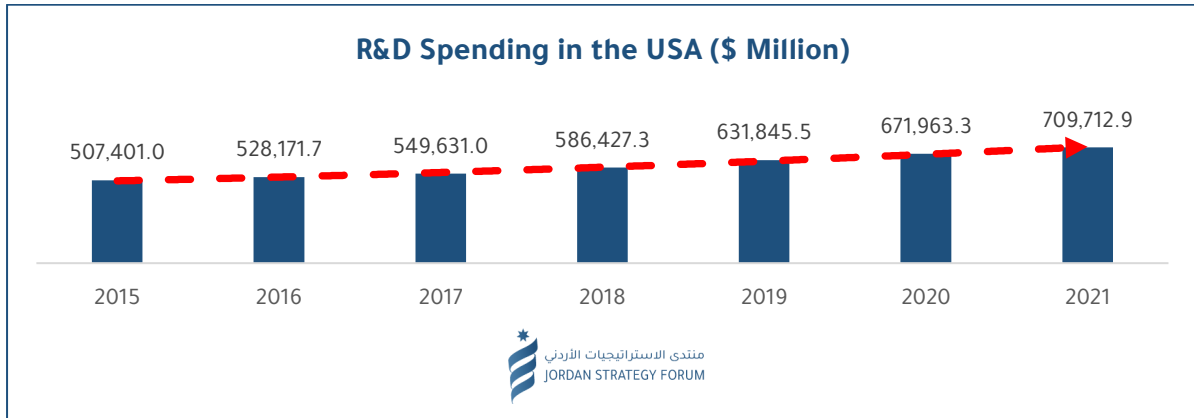
4. American and Chinese companies are dominant. Together, their companies account for 58.1% of total R&D spending. The rest of the world has invested \$ 73.7 billion | 2021 (6.7%) of the total.



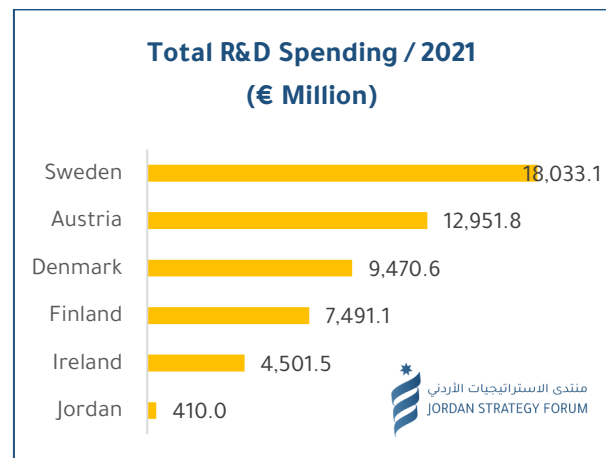
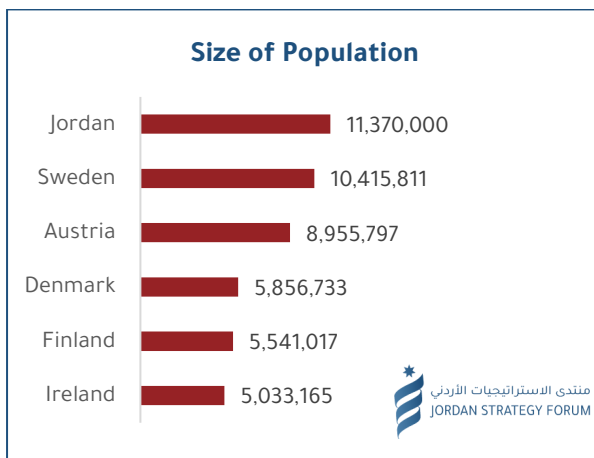
5. In the Arab region, 2 companies (1 from Saudi Arabia and 1 from the United Arab Emirates) are included in the top 2,500 R&D spenders in the world. Together, they spent € 1.28 billion in 2021.



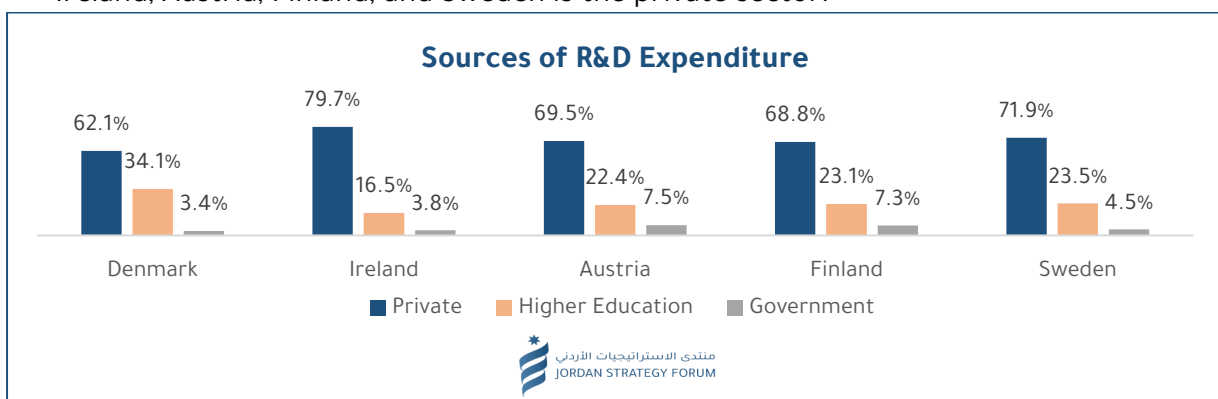
6. While there is no accurate data about Jordan's spending on R&D, it is expected to be around the \$ 450 million mark (1% of GDP). This amount is simply trivial compared to the American economy (\$ 709.7 billion).



7. While there is no accurate data about Jordan's spending on R&D, it is expected to be around the € 400 million mark (1% of GDP). With a population size close to Jordan's, Sweden spent about € 18 billion. This amount is equivalent to about 53% of Jordan's nominal GDP.



8. Like in most of the advanced economies, the major source of R&D funding Denmark, Ireland, Austria, Finland, and Sweden is the private sector.



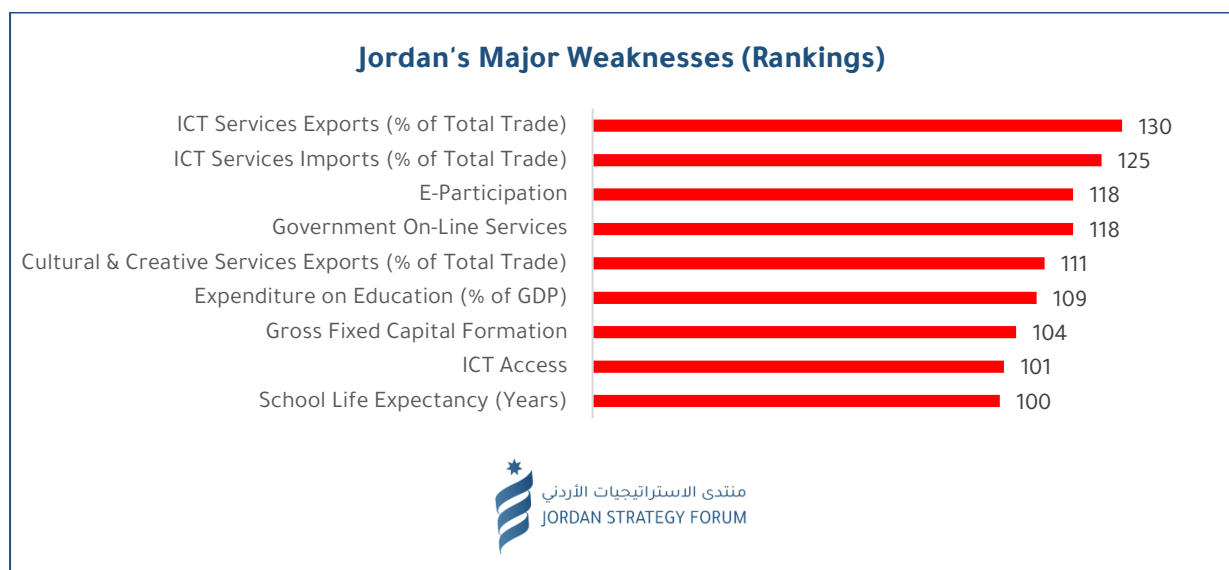
4. The Policy Implications

Innovation is arguably one of the least understood issues in economics. Indeed, it is difficult to understand why some countries are good at innovation while others are not. Based on the World Intellectual Property Organization's (WIPO) 2022 Global Innovation Index, Switzerland, United States, Sweden, United Kingdom, Netherlands, Republic of Korea, Singapore, Germany, Finland, and Denmark are the top ten (out of 132 economies) innovative countries in the world. In addition, it is known that these countries (and few others) are "big spenders on R&D activities".

The fact that the top 10 (and few others) innovative countries are demonstrably different in terms of their politics, economics, and even culture, makes it difficult to pinpoint specific factors that make them innovative, and more innovative than others. Indeed, if one looks at, for example, their geographic and population sizes, availability of natural resources, labor supply, fiscal and monetary policies, education, and even their military spending, these countries are different, and yet, they are the top 10 innovative countries in the world.

Whilst it is difficult to understand why some countries are good at innovation while others are not, one can state that successful nations in innovation must be doing many things right. Indeed, these countries are doing the right thing in many of the indicators which enter in the calculation of the Global Innovation Index.

Implication 1: All relevant stakeholders in Jordan (the government as well as the leaders of the private sector) should look at the detailed components of the Index, and in particular, at the indicators in which Jordan ranks dismally. These include the rankings in school life expectancy in years is (100th), in gross fixed capital formation (104th) in expenditure on education (109th) and in ICT services exports (130th).



Implication 2: The global amounts of R&D activities are simply huge. In addition, they cover almost all economic sectors. A country the size of Jordan cannot really compete in this activity. Indeed, while no one can deny that R&D expenditure does drive innovation, this activity, it should be stressed, is expensive, risky, and takes time to bear its fruits. To maximize the envisaged benefit from what the Jordanian economy spends on R&D (albeit relatively little), relevant stakeholders should not spread the R&D funds too thinly. They should concentrate on few areas where Jordan is strong. Even better, it would be advisable for the Jordanian institutions that carry-out research to cooperate with other similar institution abroad.

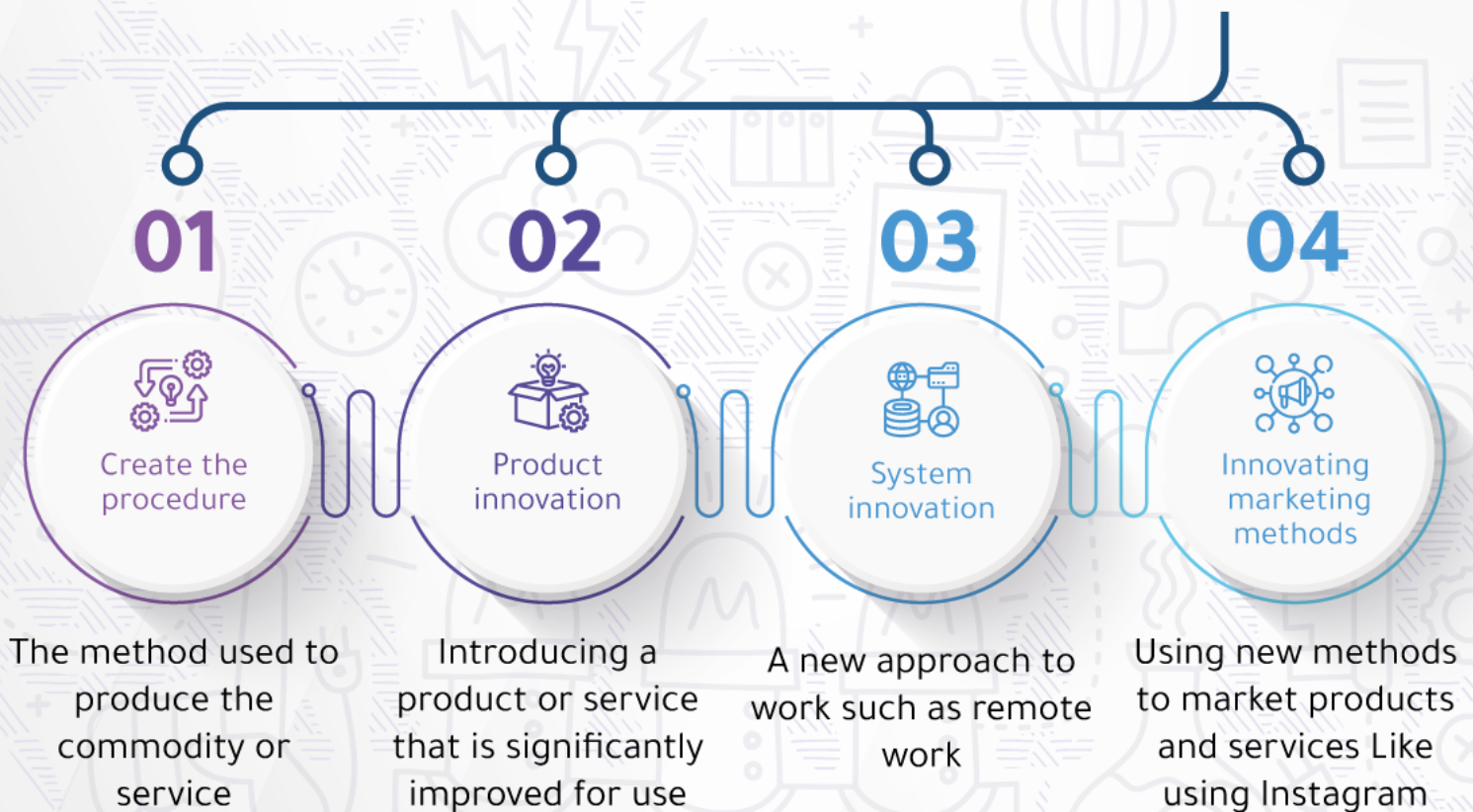
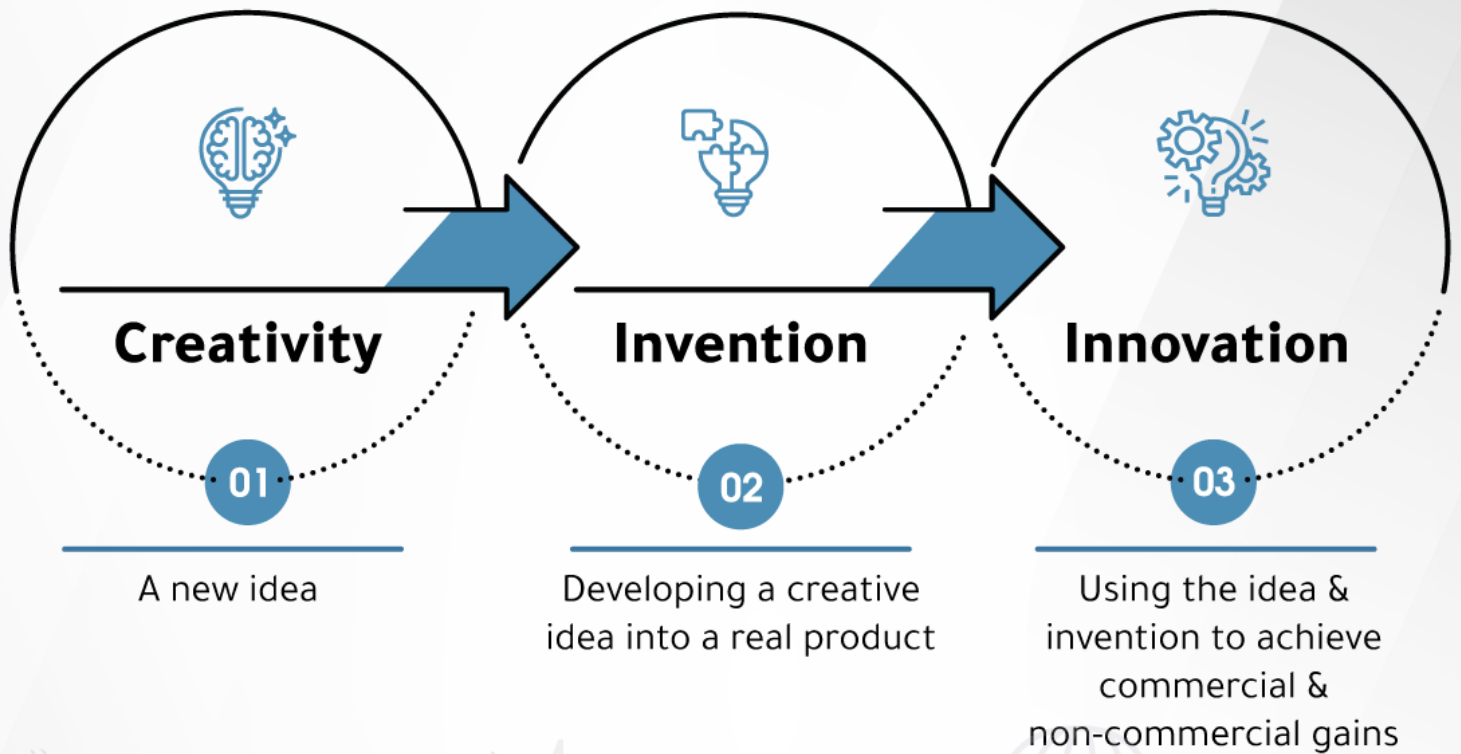
Implication 3: Based on a synthesis of more than 50 years of theory and research on national innovation rates, a Professor of Public Policy (Mark Taylor), stated that “countries don’t have to be like America or Japan or China in order to get ahead. They can design their own sets of policies and solutions to fit their circumstances, economies, politics, histories, and cultures”.

For the Jordanian economy to move forward on the innovation front, it is critically important for all stakeholders (public and private) to consider the following quotations from the World Bank.

1. “Understanding how to promote innovation in developing countries is more important than ever, given the new wave of digitalization and automation that is rapidly altering economies around the world”.
2. “The potential gains from innovation in terms of boosting incomes, jobs, and economic growth are vast. Yet, paradoxically, developing countries do surprisingly little when it comes to **adopting** advanced-country experience to upgrading their products, technologies, and business processes”.
3. “The potential gains from bringing existing technologies to developing countries are vast and **dwarf foreign aid**. Yet, developing country firms and governments invest relatively little to realize this potential”.
4. “Unlocking the enormous growth potential of moving countries closer to the technological frontier is not as simple as, say, providing additional incentives for research and development”.

TO SUM UP, it is heartening that the “Economic Modernization Vision”, which was launched by His Majesty King Abdullah II in June 2022, looks at **“EDUCATION”** as one the drivers to implement the vision. We all hope that implementing this driver well will prove to be successful. **This will enable all Jordanians to celebrate this day (World Creativity & Innovation Day) in a lot more positive spirit.**

The Concepts of Creativity, Invention, & Innovation





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