

Unfolding Greece's Potential for Economic Growth: The Role of Start-up & Innovation Ecosystem

Claire Economidou

University of Piraeus

International Atlantic Economic Conference

Plenary Session: "Greece: Economic Adjustment, Prospects and Challenges"
Athens, March 27-30, 2019

Over the Last Decade

- As for May 2010, Greece has been receiving emergency financial support in form of three economic adjustment programs from the Euro area member states and the International Monetary Fund (IMF). Over the period 2010-2018 Greece has received 256.6 bn euros.
- These programs aimed to address economic imbalances and social challenges and pave the way for economic growth.
- However, as Greece's current economic and social situation shows, financial support provides merely a short-term relief. High employment persists, weak growth and small economic structure with small capacity to innovate and to export high-tech products.

Innovation and Economic Growth

To achieve economic growth:

- increase of the number of inputs in the production process, or
- think of new ways to get more output from the same number of inputs.

The latter, is the essence of what is broadly meant by innovation: new products; new processes; organization or marketing methods

Innovation = Invention x Commercialization

Entrepreneurship is vital for **innovation** to reach to the market and translate into economic value.

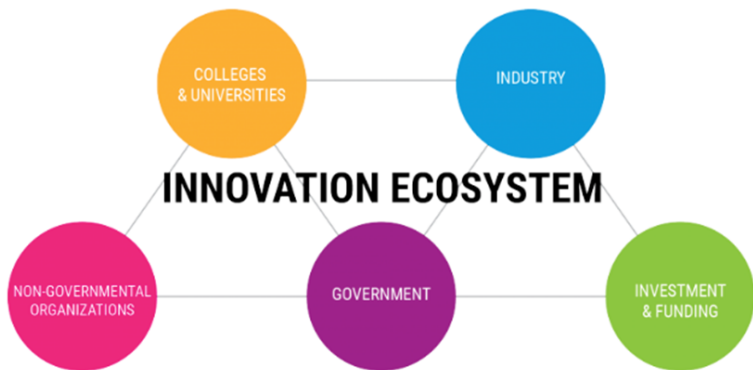
Entrepreneurship (and Startups) in Hosting Growth

Start-ups can play a pivotal role in Greece's economic recovery via:

- Attraction of FDI
 - For example, Switzerland's startups raised 772 million euros (2017) from foreign investors
- Complementary partnerships with established companies
 - Startups adept to the new challenges while large corporations can scale up operations
- Hiring highly-skilled talented workforce
 - As it is the case in Portugal, Israel
- Transform struggling cities into epicenters of innovation
 - Examples: Be'er Sheva, Israel; Barcelona, Spain

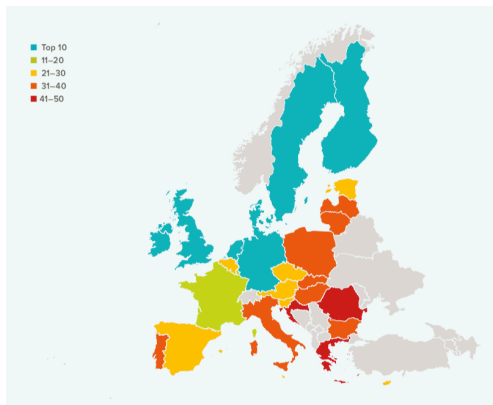
Ecosystem

Stakeholders: Corporations, Government Agencies, Universities, Venture Capital, Incubators and Entrepreneurs.



Goal: Enable technology development, innovation, creation of new businesses and eventually economic growth

'Mapping' Innovation Performance in the EU

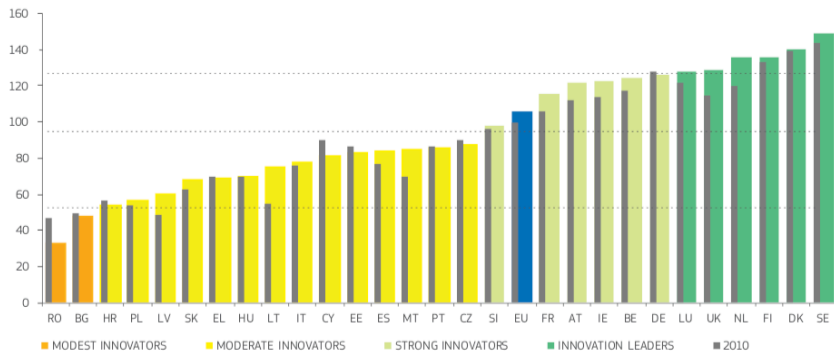


Source: Global Innovation Index (GII) Database

-> Global Innovation Index (GII)-2018 (by WIPO, INSEAD, CORNELL), Greece ranks 42 (out of 125) & among the bottom of the OECD countries [◀ framework](#)

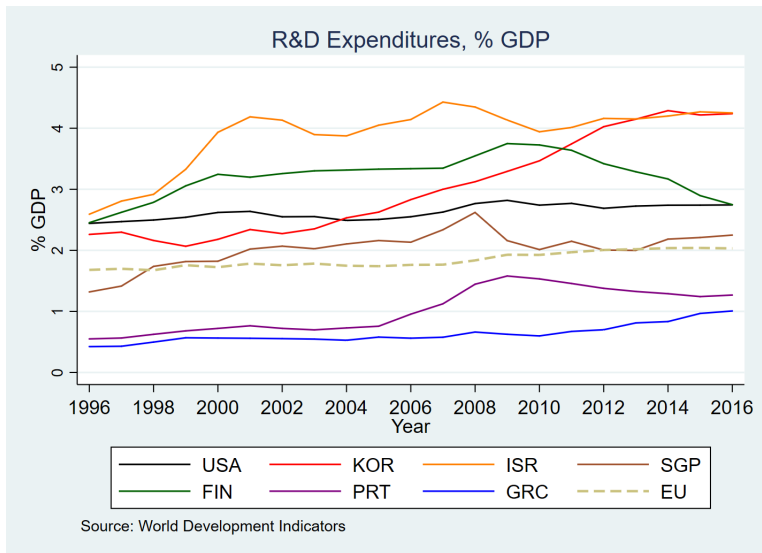
-> European Innovation Scoreboard (EIS)-2018 (by EU Commission), Greece ranks 22 (out of 28) in the EU [◀ framework](#)

Performance and Change of EU Member States' Innovation Activity

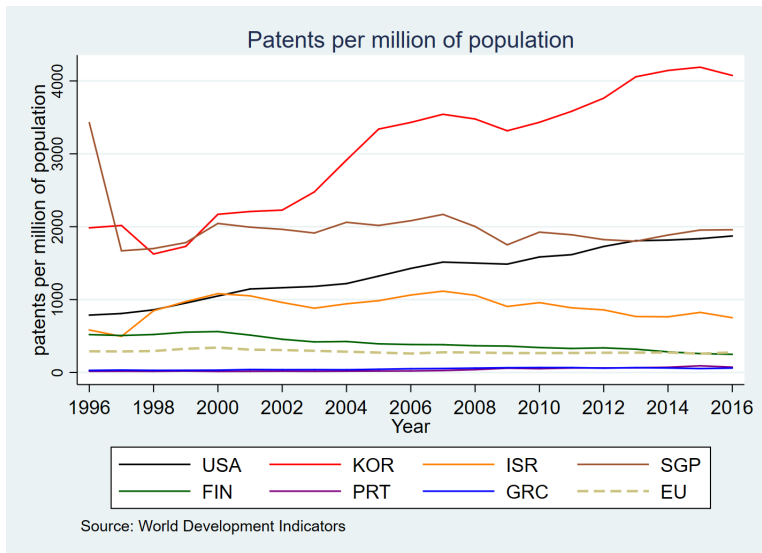


Source: European Innovation Scoreboard 2018, European Commission (2018)

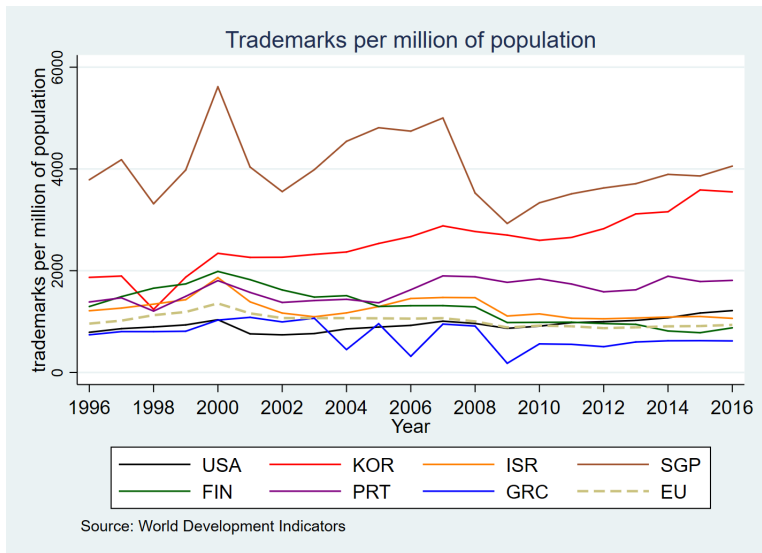
R&D Expenditure (% of GDP)



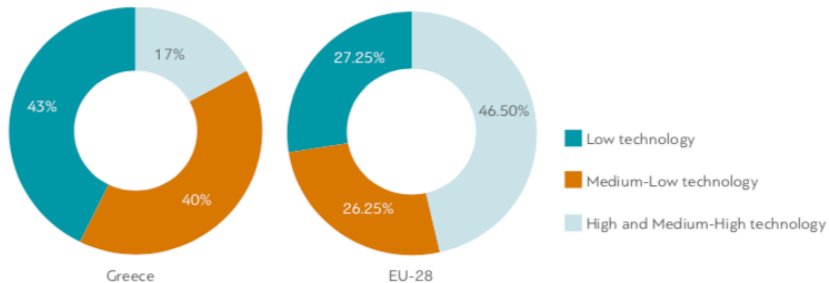
Patents (per population)



Trademarks (per population)



Technology Intensity of the Manufacturing Sector (GVA)



Source: Eurostat (2016)

Location and Human Capital

- Favorable location - at the cross-roads of Europe, Asia and Africa;
- Member of the EU's 15 trillion (euros) market;
- Excellent living conditions, mild temperatures, affordable housing and low crime rates;
- Highly educated talented pool:
 - 25% of 25-to-64-years old have B.A. or B.Sc. (OECD average is 16%) with
 - 25% holding STEM degrees (OECD average is 22%)

Supporting and Accelerating Startup Initiatives

- Incubators (Corallia, the EGG, IQbility, Orange Grove)
- Coworking spaces (the Cube, Found.ation, the Impact Hub Athens)
- VC groups (Venture-Friends, Marathon Venture Capital, the NBG Business Seeds)
- Equifund - investment platform established by the Ministry of Economy and Development & the European Investment Fund: aims to pour up to 1 bn euros by 2022 into Greek startups

Despite these favorable conditions and sources of support, Greece's nascent startup scene faces important challenges.

Obstacles to Growth

However, Greece still fails to meet its potential in boosting entrepreneurship and innovation due to:

- Limited access to the right talent

- ◀ facts
- ◀ publications
- ◀ attract talent
- ◀ compete for talent
- ◀ greek migrant flows

- Undeveloped collaborative networks

- ◀ facts

- Unfriendly business environment and market structure

- ◀ facts (a)
- ◀ facts (b)
- ◀ facts (c)
- ◀ as a result

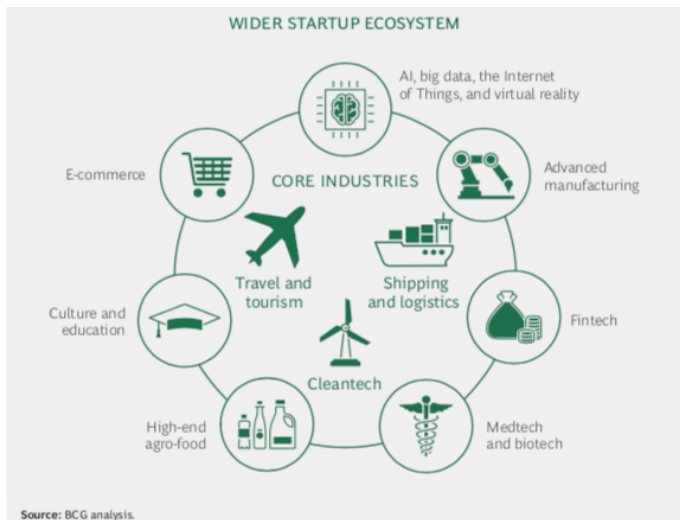
- Lack of sustainable funding

- ◀ facts

Four Pillars for Structural Foundation

- **Create a Collaborative Innovation Network,** [◀ actions](#)
which consists of large enterprises, academic institutions, and startups working together to further innovation;
- **A Business Environment Conducive to Growth,** [◀ actions 1](#) [◀ actions 2](#) [◀ actions 3](#)
which helps entrepreneurs quickly and easily set up, operate, and close a startup, as well as provides fiscal incentives designed to accelerate startup growth;
- **The Right Talent,** [◀ actions](#)
which consists of highly educated and competitively priced talent with specialized skills that are aligned with current market needs;
- **Sustainable Funding,** [◀ actions](#)
which is continuous access to capital that enables startups to grow and succeed over the long term

Core and High-Potential Industries for New Technology Developments



Host-Up Greece

The time has come to revive Greece's startup and innovation engine. Bold vision, careful planning and widespread support is required with:

- 1 Legislative actions
- 2 Innovation-inducing initiatives
- 3 Clear focus on high-potential sectors

in order Greece to host and grow national and international startups, attract and retain capital and talented individuals in the near and long terms.

Along with the development of successful ecosystems, Greece can leverage Industry 4.0 for an inclusive economic recovery and sustainable growth.

Closure

Thank you. Discussion / Comments

Limited Access to the Right Talent

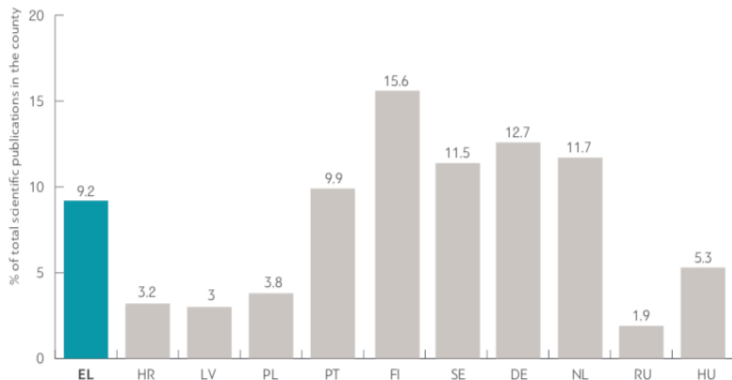
Greece fails to retain and employ high-skilled human capital:

- 59% of Greek employers unable to find suitable talent (Talent Shortage Survey 2016-1017, Manpower Group, 2016);
- Shortage of workers with training in high-demand fields such as software development;
- Publicly funded universities do not always provide students with specialized training courses (on entrepreneurship);
- Mass exodus of at least 420,000 young graduates since 2008 (Economic Bulletin, Bank of Greece, 2016);
- The existed intellectual and scientific potential of the country is not fully exploited to create economic value & growth

[▶ back to Obstacles to Growth](#)

Scientific Publications in Greece

(Top 10% Most Cited Publications Worldwide, 2002-2009)



Source: Innovation Union Scoreboard, European Commission (2016)

[▶ back to Obstacles to Growth](#)

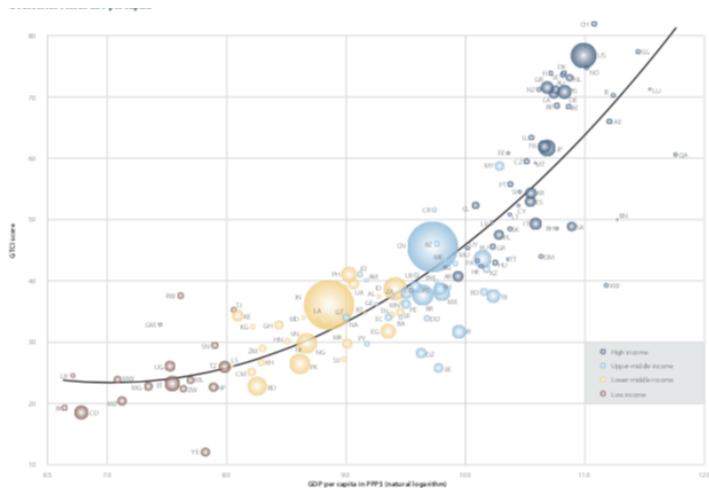
Country Capacity to Attract Talent



Source: Global Competitiveness Report, World Economic Forum (2016)

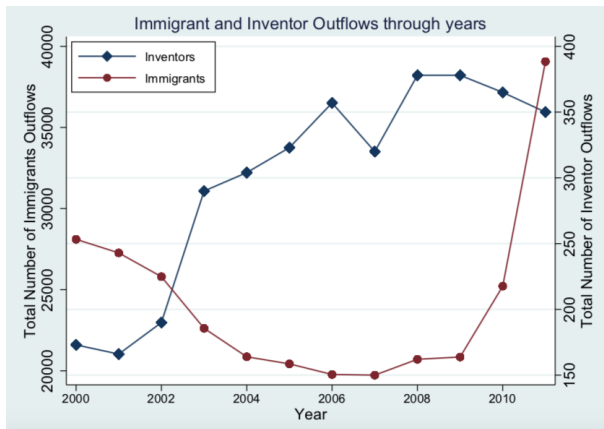
[▶ back to Obstacles to Growth](#)

Country Ability to Compete for Talent



Note: Greece ranks 44 (out of 125 countries). Source: Global Talent Competitiveness Index (GTCI), INSEAD (2019) [▶ back to Obstacles to Growth](#)

Inventor and Non-inventor Greek Migrants



Source: Drivas, Economidou, Karamanis and Sanders (MPRA working paper No. 88883, 2018)

(blue line: patent inventors; red line: non-inventors)

[▶ back to Obstacles to Growth](#)

Underdeveloped Collaborative Networks

- Lack of institutional support, and
- Limited government incentives continue to discourage corporations, universities, and startups from investing in and collaborating on R&D

Without corporate R&D spending and greater collaboration among companies, universities, and startups, opportunities for R&D spinoffs and early-stage product development will continue to dwindle.

[▶ back to Obstacles to Growth](#)

Unfriendly Business Environment

- Greece is 72th in the World Bank's 2018 **ease-of-doing-business** rankings - the lowest among OECD members
- Greece ranks 57th (out of 140 countries) in world **competitiveness** with score 62.1 (best: 100; US, Singapore, Switzerland).
- **Resolving a commercial dispute in court** is, on average, 53 months, compared with 19 months in other OECD countries (Doing Business 2018: Reforming to Create Jobs, World Bank Group, 2017).
- Strict labor and product market regulations (stricter than average of the OECD)
- Greece is 4th among the **most corrupted** countries in the OECD

▶ [back to Obstacles to Growth](#)

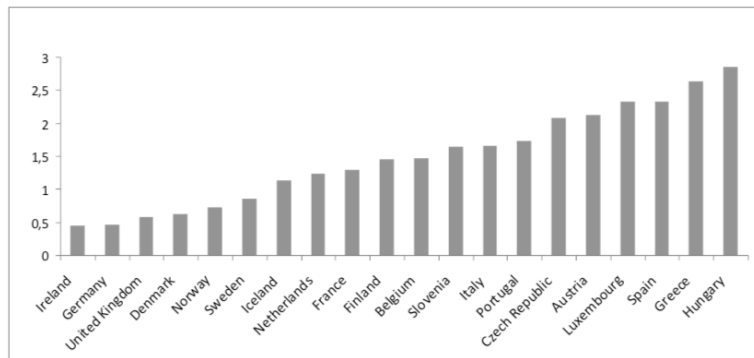
Most Problematic Factors in Doing Business

Factors	% of Respondents
Inefficient government bureaucracy	27.2%
Corruption	14%
Restrictive labor regulations	12%
Policy instability	11.5%
Tax regulations	11.1%
Access to financing	9.9%
Inadequate supply of infrastructure	3.9%
Tax rates	3.7%
Poor work ethic in national labor force	2.3%
Government instability/coups	2.3%
Inadequately educated workforce	1.4%
Inflation	0.6%
Crime and theft	0.1%
Poor public health	0.1%
Foreign currency regulations	0%

Source: Executive Opinion Survey, World Economic Forum (2017)

[▶ back to Obstacles to Growth](#)

Administrative Burdens on Start-Ups (from 0 to 6 the more restricting)



Source: OECD (2016)

[▶ back to Obstacles to Growth](#)

The Result of an Unfriendly Environment

- The result of all these, is a small economic structure that discourages the creation of large, globally competitive corporations with the capacity to innovate and export.
- The European Commission estimates that Greece exports about 33% less, largely because of institutional barriers (The Puzzle of the Missing Greek Exports, European Commission, 2014)
- Exports currently represent 30% of GDP (the euro area average is 44%), high value-added manufactured goods represent only a small share.

[▶ back to Obstacles to Growth](#)

Lack of Continuous Funding

... has been a serious issue. Important vehicles, however, thus far have been:

- The National Strategic Reference Framework (19 billion Euros from 2014 through 2020;
- EquiFund
 - about 260 million euros have already been committed for early-stage and growth-stage funding;
 - is expected to provide Greek startups with up to 1 billion euros by 2022

→ EquiFund aims to unlock equity potential in the Greek market: (i) Fill specific gaps (angel investors); (ii) Incentivize general partners to invest in startups by providing access to cheap capital

[▶ back to Obstacles to Growth](#)

Create A Collaborative Innovation Network: Actions & [Best Practices]

- Development of Independent Research Fund - financed primarily by corporations [GERMANY]
 - "Stifterverband", German corporations and foundations finances challenges in higher education, science, and innovation
- Kick-start Private Investment [ISRAEL]
 - Israel Innovation Authority provides government guarantees for startups where the cost of risk was too high
- A Global Networking Mentoring Programme [NETHERLANDS]
 - teaching startups how to grow, avoid pitfalls and identify new market opportunities ('Spring Singapore'; 'Costa' & 'StartupDelta' in Netherlands)
- Design and Develop Local Innovation Districts [SPAIN]
 - 22@Barcelona innovation district; CyberSpark Industry Initiative, Be'er Sheva, Israel - both areas were previously underdeveloped
- Entice Anchor Tenants to Innovation Districts [IRELAND]
 - Ireland, in 2003, instituted a low corporate tax rate of 12.5%, a 25% credit on R&D expenditures, and favorable IP regulations

Build a Growth-Conducive Business Environment: Actions & [Best Practices]

Develop Startup-friendly tax policies:

- Reduce Social Security Contributions (in early years) [IRELAND]
 - Social security exemptions could be allowed for foreign residents who are board directors and share-holders and who own more than 3% of a startup
- R&D Tax Credits [IRELAND]
 - RD cash grants for up to 30% of an investment and allow losses to be carried forward up to 10 years
- Simplify Accounting and Tax Payment [IRELAND]
 - Use 'cash-basis' accounting
- Increase Tax Breaks for Revenue Generated from IP [IRELAND]
 - Encourages the IP development and stirs up competition

▶ [back to Four Pillars](#)

Build a Growth-Conducive Business Environment: Actions & [Best Practices] (cond.)

Develop Startup-friendly tax policies:

- Provide Expatriates with Tax Incentives [IRELAND]
 - a 15% flat income tax on domestic income for ten years
- Reforming Tax Policy on Employee Stock Options [GERMANY]
 - a separate category of stock options specifically for employees; stock options would not be taxed as income but as a capital gain, for which the rate is 15%; employees must hold the options for more than one year from date of exercise or more than two years from date of grant
- Expanding the Golden Visa Program to Include Founders and Startup Employees [CYPRUS]
 - Non-EU startup founders and employees (and their families) can obtain a Greek residency permit that is valid as long as the person is working for a startup (e.g., Cyprus)

▶ back to Four Pillars

Build a Growth-Conducive Business Environment: Actions & [Best Practices] (cond.)

Ease Regulations:

- Create a Watchdog Group [SPAIN]
 - identify emerging industries and remove regulatory barriers in high-potential segments (e.g., Hydrogen and Electric Vehicles, Unmanned Aerial Vehicles, Autonomous Vehicles)
- Overhaul the IP Framework [EU]
 - Facilitate universities to successfully engage in technology transfer (OTTs)
- Revamp Bankruptcy Laws [EU]
 - Fully implement the recent 4446/2016 bankruptcy regulation ('second chance'); Optimize and promote out-of-court debt restructuring
- Establish an Online ONE-STOP Shop for Government Interactions [IRELAND]
 - Online legal templates, guidelines and forms for transactions, legal advices for founders, answer entrepreneurs' questions, etc.

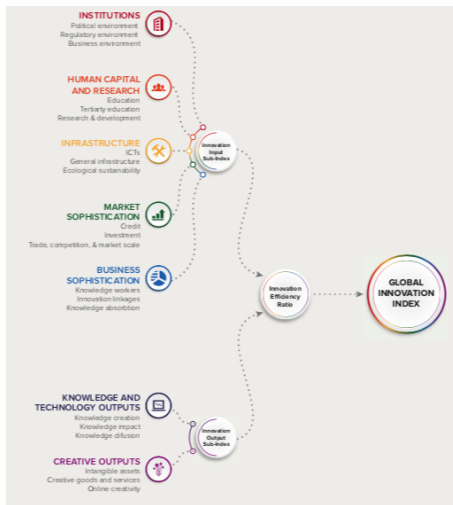
Recruit the Right Talent: Actions & [Best Practices]

- Internship Programmes for Academic Credit - let universities and organizations raise enrollment rates [GERMANY]
- Online Portal - let students easily apply for internship positions [FRANCE]
- One-Stop Shop for Talent-related Activities [CANADA]
 - provide job seekers with links to educational seminars; contact information for startups, founders, VCs, and angel investors; and dates for upcoming recruiting events (e.g., Built in MTL, Canada)
- Attract Talented Professionals from Corporations [USA]
 - US job site AngelList
- Synergies of Start-ups with Universities - to create certificates and training centers [USA]
 - Found.ation, Tech Talent School

Ensure Sustainable Funding: Actions & [Best Practices]

- Hellenic Development Bank [GERMANY]
 - Aims to offer Greek startups access to debt financing through special loan products, such as innovation grants, growth capital, standard loans, and direct investment
- Corporate Venture Capital [UK, US]
 - Startups with high growth potential can receive financial support and mentoring from a partner organization in exchange for equity
- Equity Crowdfunding [UK, US]
 - Individuals invest in an early-stage, unlisted company in exchange for shares, e.g., popular online crowdfunding platforms: Razoo, Indiegogo, and Patreon
- Innovative Corporate Arrangements (consortium of large corporations) [NETHERLANDS]
 - Provision of office space, business skills, training, and management, mentoring in exchange for a small percentage of equity; 'High-impact' initiatives, e.g., establish a research fund or innovation district

Framework of the Global Innovation Index, GII, 2018



▶ back to 'Mapping' Innovation Performance in the EU

Framework of the European Innovation Scoreboard, EIS, 2018

FRAMEWORK CONDITIONS

- **Human resources**
 - 1.1.1 New doctorate graduates
 - 1.1.2 Population aged 25-34 with tertiary education
 - 1.1.3 Lifelong learning
- **Attractive research systems**
 - 1.2.1 International scientific co-publications
 - 1.2.2 Top 10% most cited publications
 - 1.2.3 Foreign doctorate students
- **Innovation-friendly environment**
 - 1.3.1 Broadband penetration
 - 1.3.2 Opportunity-driven entrepreneurship

INVESTMENTS

- **Finance and support**
 - 2.1.1 R&D expenditure in the public sector
 - 2.1.2 Venture capital expenditures
- **Firm investments**
 - 2.2.1 R&D expenditure in the business sector
 - 2.2.2 Non-R&D innovation expenditures
 - 2.2.3 Enterprises providing training to develop or upgrade ICT skills of their personnel

INNOVATION ACTIVITIES

- **Innovators**
 - 3.1.1 SMEs with product or process innovations
 - 3.1.2 SMEs with marketing or organisational innovations
 - 3.1.3 SMEs innovating in-house
- **Linkages**
 - 3.2.1 Innovative SMEs collaborating with others
 - 3.2.2 Public-private co-publications
 - 3.2.3 Private co-funding of public R&D expenditures
- **Intellectual assets**
 - 3.3.1 PCT patent applications
 - 3.3.2 Trademark applications
 - 3.3.3 Design applications

IMPACTS

- **Employment impacts**
 - 4.1.1 Employment in knowledge-intensive activities
 - 4.1.2 Employment fast-growing enterprises of innovative sectors
 - **Sales impacts**
 - 4.2.1 Medium and high-tech product exports
 - 4.2.2 Knowledge-intensive services exports
 - 4.2.3 Sales of new-to-market and new-to-firm product innovations
-